



Demonstrating Impact on Innovation

A (short) NIST Panel Presentation

June 14, 2006

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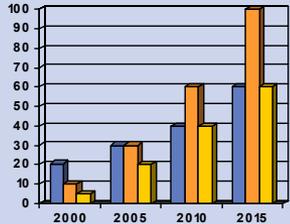
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“Innovation fosters the new ideas, technologies, and processes that lead to better jobs, higher wages and a higher standard of living”

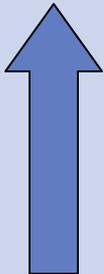
Source: Council on Competitiveness: National Innovation Report, Dec 2004

To promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life

Standards and methods leading to effective innovation IS the Mission



Innovation Drives Economic Growth



Microsoft

intel

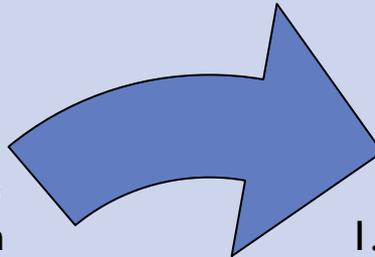
IBM

CISCO SYSTEMS

Innovative Products Create Markets



And the Cycle Continues

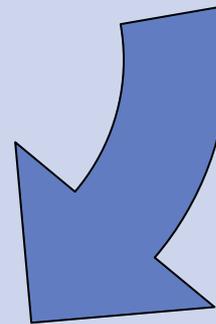


3. Effective Innovation Translate to NIST Mission Fulfillment

1. Basic Research Translates to more Discoveries



Measurements and Standards Make the Wheel Go Round



2. More Discoveries Translate to more Product Ideas (aka Innovations)



- Within NIST History:
 - How did prominent NIST success stories unfold?
 - > Who identified the prospective innovation (and by what process)?
 - > How were the resources assembled to pursue and support?
 - > What was the cost to tax payers?
 - > What was the direct and indirect benefit to the economy?
- Future Projects (a sampling):
 - Show the time line for AMT to developing Nanotech Industry
 - Show how NIST can further foster innovation in the IT space

NIST has, and continues to execute well against the MISSION. Does the world know ?



Supplemental Slides



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- Understand **WHERE** innovation comes from:
 - Understand and forecast targets areas for innovation
 - > Existing Market Improvements (Current Sectors)
 - > New and Emerging Markets (Prospective Areas)
- Understand **HOW** innovation is *enabled and cultivated*
- Understand **WHEN** standards, methods, analysis and common resources intersect and add value to these opportunities
- Understand **WHAT** feeds innovation

**You cannot control what you cannot
measure**

- The WHERE:
 - From our educational system as measured by:
 - » Output of critical thinkers for existing emerging areas
 - » Ratio of US education output and quality vs. other Nations
 - Small Companies as measured by:
 - » Number and funding metrics
 - » Start and success rate trends
 - Large Companies as measured by:
 - » Patents in existing, new and emerging opportunity areas
 - » Our ability to maneuver and compete against other

Where are our concrete “touch points”?

- The HOW:
 - How do standards enable innovation?
 - » Benefits vs. Investment
 - » Case Studies and Success stories
 - How do National resources impact the speed innovation?
 - » Standards and Methods
 - » Common, necessary (but expensive) resources
 - How do we get the message out?
 - » Measuring our value (direct and indirect)
 - » Communicating our value (making our value known to those “that matter”)

Quantify and Promote Success

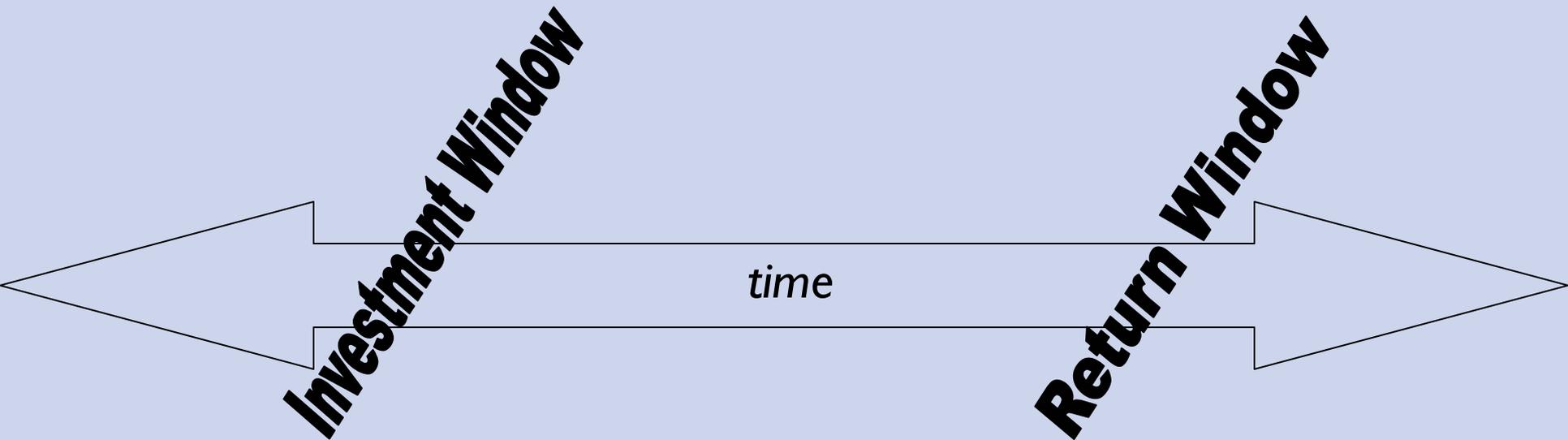
- The WHEN:
 - From our educational system as measured by:
 - » Output of critical thinkers for emerging areas
 - » Ratio of US output vs. other Nations
 - Small Companies as measured by:
 - » Private sector investment
 - » Start and success rate trends
 - Large Companies as measured by:
 - » Patents in existing, new and emerging opportunity areas
 - » Our ability to maneuver and compete against other

Set and manage expectations

- The WHAT (feeds innovation):
 - How is innovation stimulated and WHY?
 - Is global inertia for innovation shifting?
 - To where and why?
 - How do we understand, mitigate and/or migrate?
 - Is this history repeating?
 - Or do we innovate, innovate, innovate!! (against both mature and new opportunities)

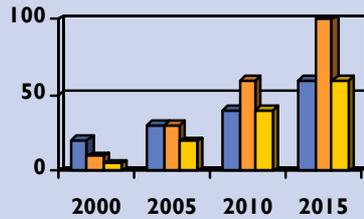
“Those who cannot remember the past
are condemned to repeat it”

George Santayana

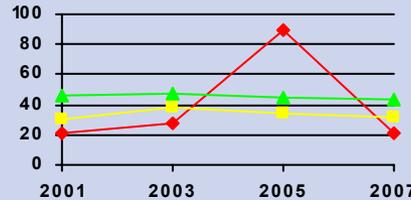


Determine (and agree) on the time ROI
timeframe (and hold the course)

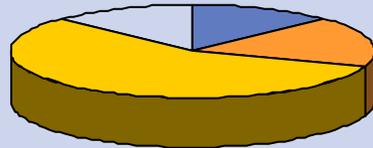
Relative Growth of Target Influence Area



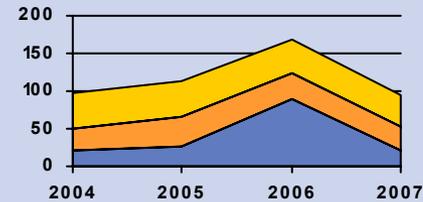
Private Sector Investment in Target Influence Area



Market Share for Target Influence Area



Relative Competitive Performance



Determine (and agree) on measurement metrics against time scales

- Plot US GDP vs. other National (relative and absolute)
- Plot Output of Critical Thinkers vs. Household Income
- Plot US GDP against total VC raised and Spent
- Plot US R&D Spending against US patents against Issued
- Plot trends in Private Capital Investment vs. location
- Plot employment trends by major innovative industries by locale
- Other leading or indicators and measurements?

We have work to do !