



Innovation: an Emerging Management Discipline

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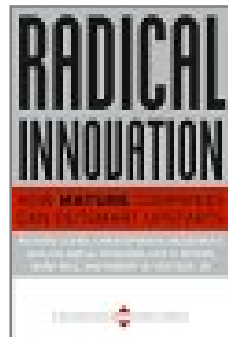
Director, Radical Innovation Research Program



Radical Innovation Research Program

Phase I (1995-2000)

- Can we describe management practices for breakthrough innovation?
 - Using traditional NPD processes does not work.
- Twelve projects.
- Multidisciplinary team.
- Prospective, Longitudinal



Phase II (2001-2005)

- How do firms build a sustainable BI capability?
 - Average life expectancy: 4 years.
- Twelve + nine companies.
- Corporate level.
- Multidisciplinary team
- Prospective, Longitudinal





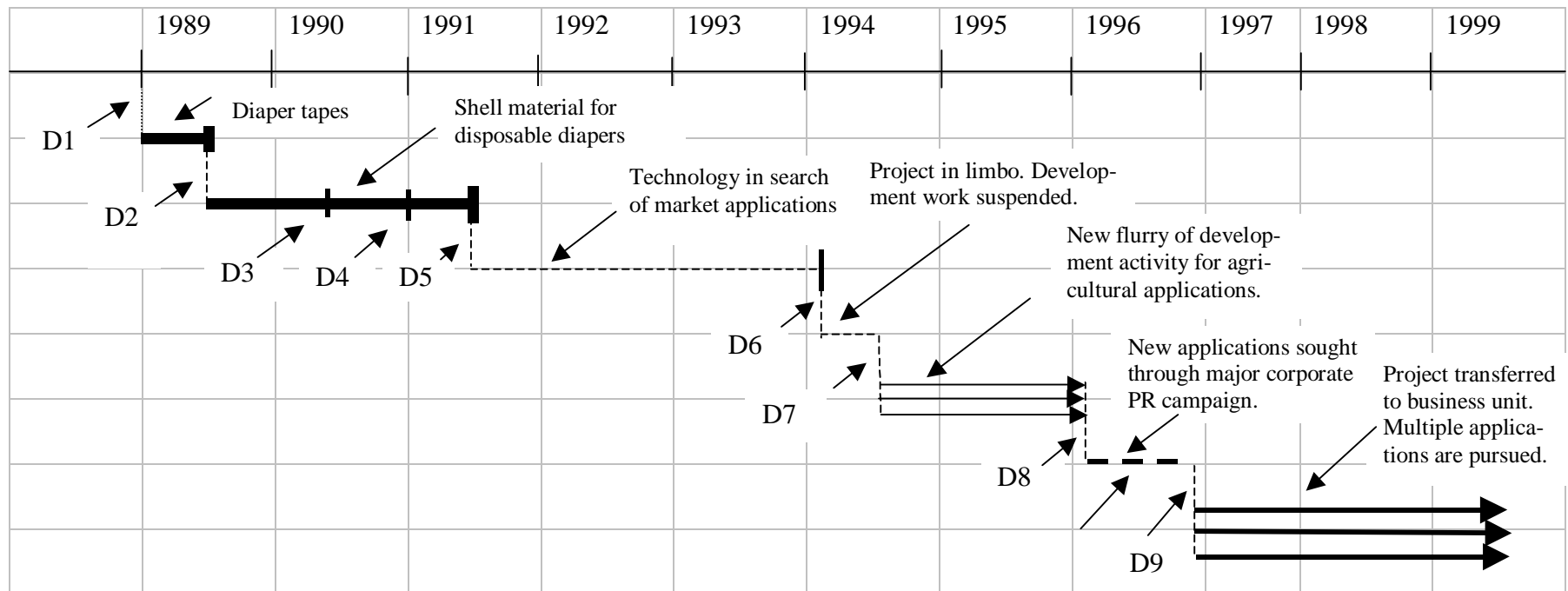
Companies in the Study



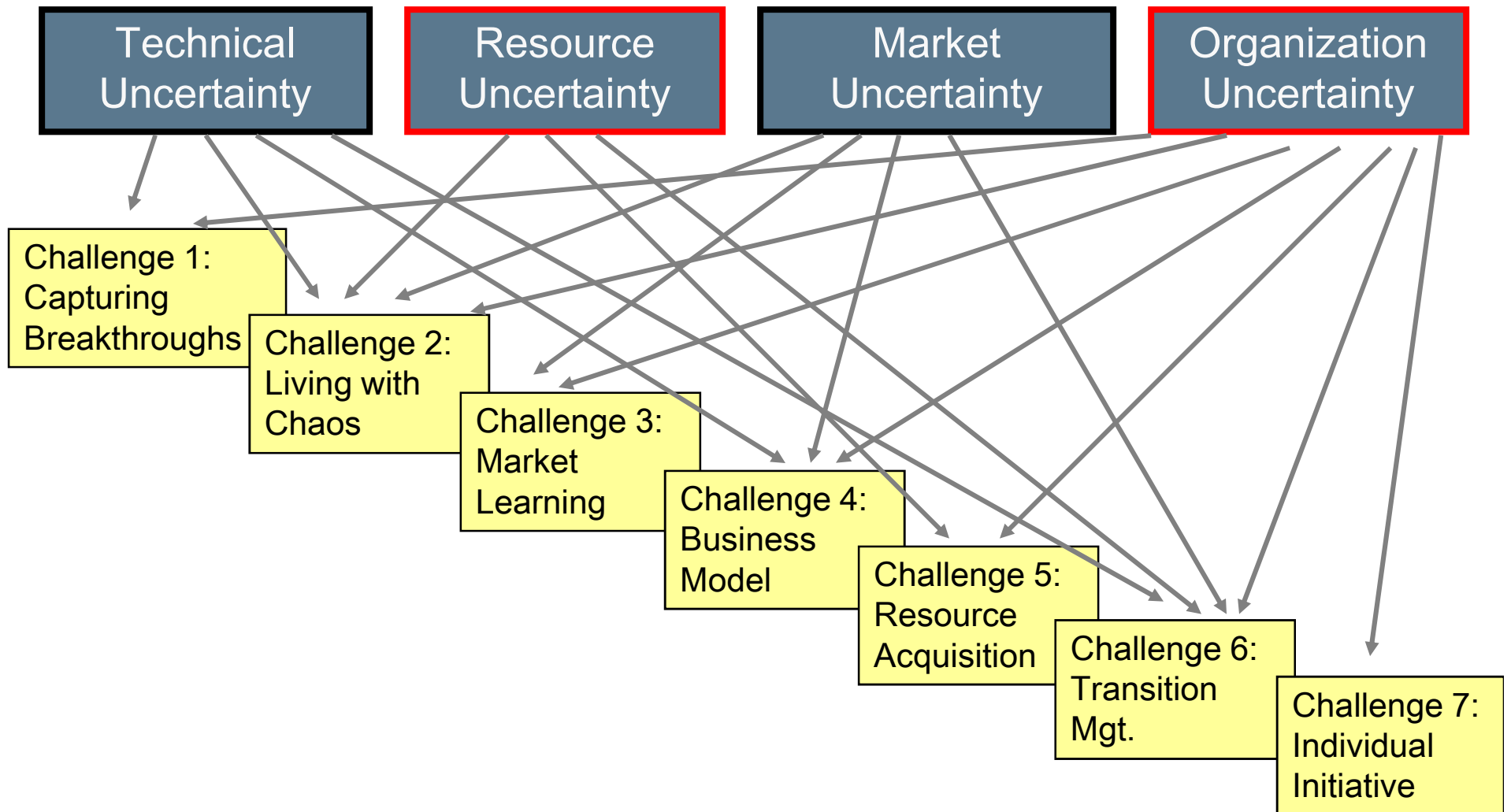
- ▶ *GE* →
 - ▶ *IBM* →
 - ▶ *Air Products* →
 - ▶ *DuPont* →
 - ▶ Analog Devices
 - ▶ General Motors
 - ▶ Nortel Networks
 - ▶ Otis Elevator (UTC)
 - ▶ Polaroid
 - ▶ Texas Instruments
 - ▶ Bose
 - ▶ Dow Corning
 - ▶ Guidant
 - ▶ H-P
 - ▶ Intel
 - ▶ P&G
 - ▶ PPG
 - ▶ Rohm&Haas
 - ▶ Xerox
- 246 interviews
- ▶ 3M
 - ▶ Albany Int'l
 - ▶ Corning
 - ▶ J&J Consumer
 - ▶ Kodak
 - ▶ Mead-Westvaco
 - ▶ Sealed Air
 - ▶ Shell Chemicals



BI Lifecycle: Dupont Biomax®



Understanding Breakthrough Innovation





Early vs. Mature BI Capacity

Early	Mature
<p>Executives act as provocateurs, patrons to provide air cover</p>	<p>Leadership sets expectations, clarifies strategic intent, develops RI culture, structures & reward systems. Governance boards help align emerging opportunities with strategic intent.</p>
<p>Mavericks champion projects.</p>	<p>RI idea hunters seek opportunities. NBCreation personnel work with teams to develop business models. Adopt real options mentality and learning based project management approaches.</p>
<p>Resources gained through favors.</p>	<p>Individual managers with authority to provide seed funding & internal VC organizations provide multiple sources of capital for RI. Portfolio approach to funding.</p>
<p>Completion of RI tasks & project staffing rely on individual initiative.</p>	<p>Strategy for identifying, selecting, rewarding and retaining RI champions, experts and team members.</p>
<p>Communication, metrics barriers challenge project transition. They flounder.</p>	<p>Transition teams established with funding and senior mgmt support to accelerate projects until ready for SBU environment.</p>



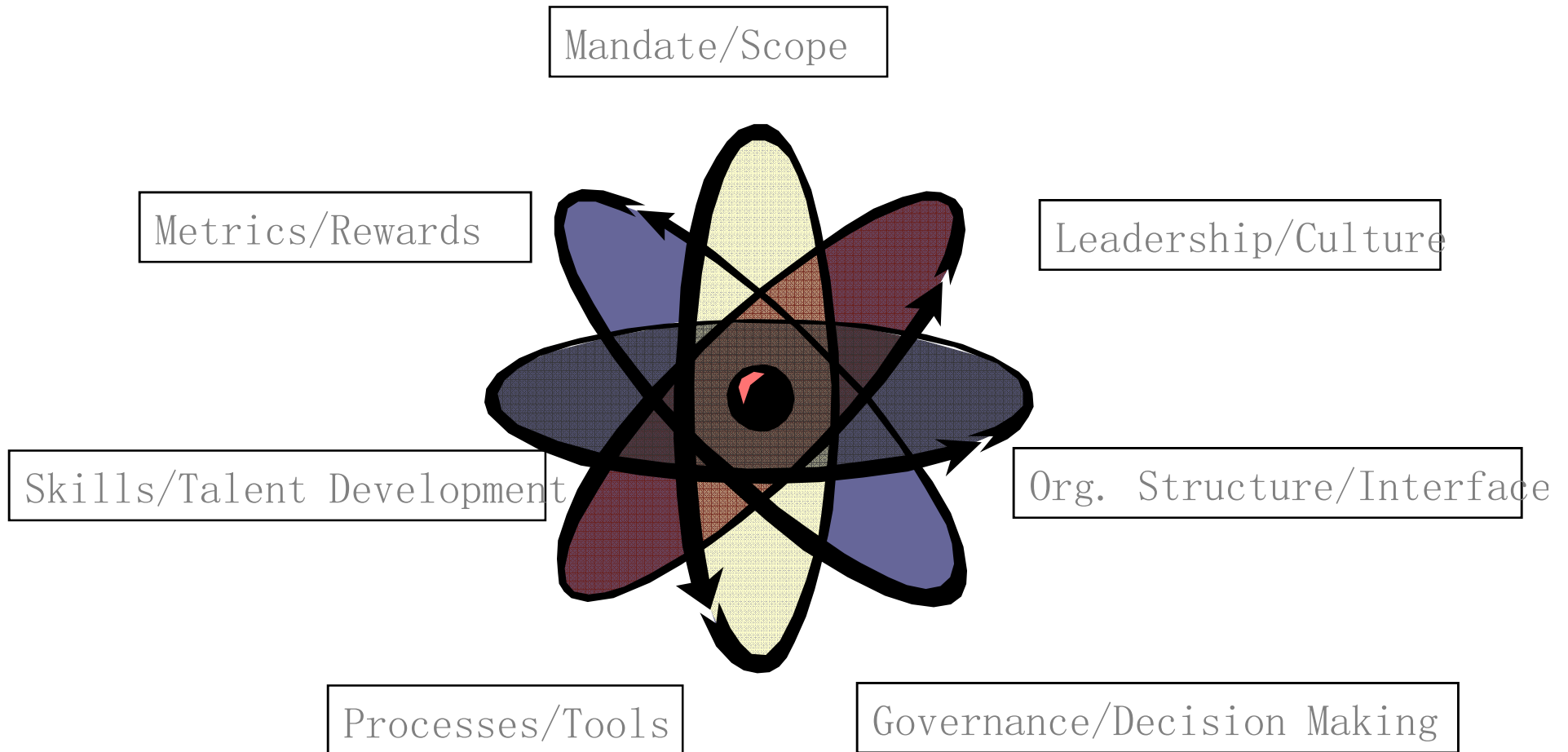
Breakthrough Innovation Capability

Breakthrough innovation *maturity* is defined as the degree to which the organization has embedded a system for initiating, supporting and sustaining RI activities



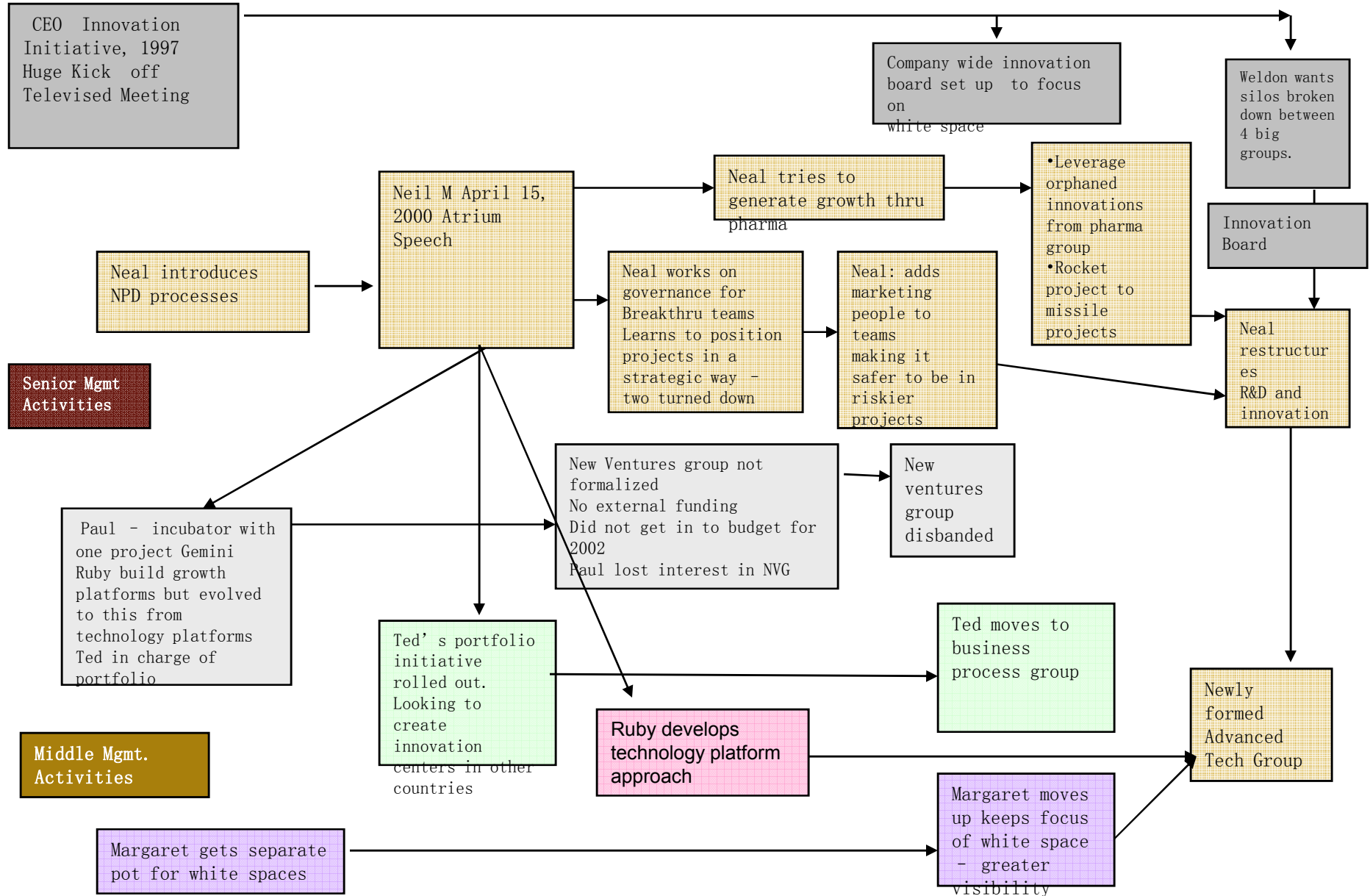
Average Life Expectancy of a BI system: 4 years

Phase II: Management Systems for BI

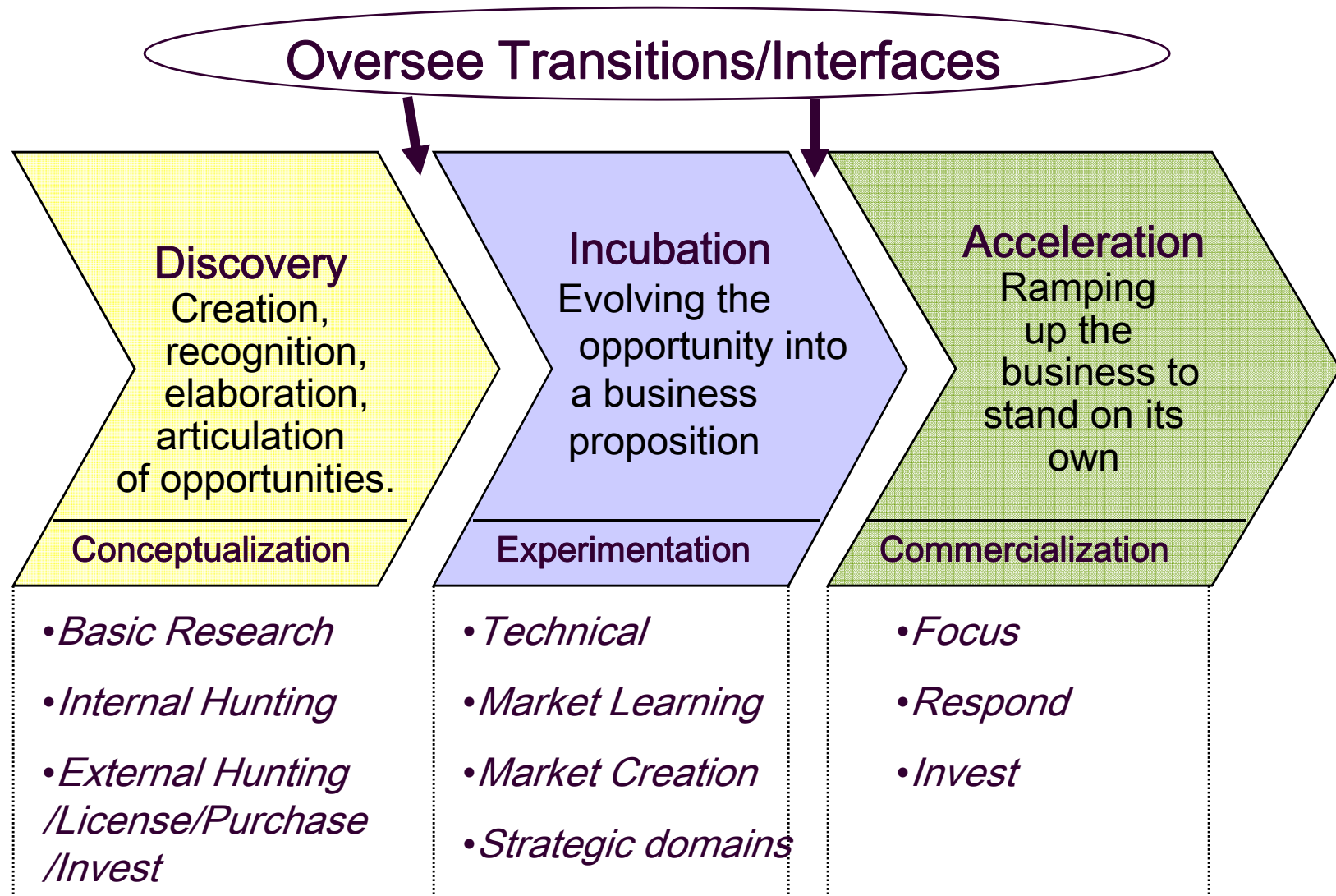




Example BI Management System Time Line

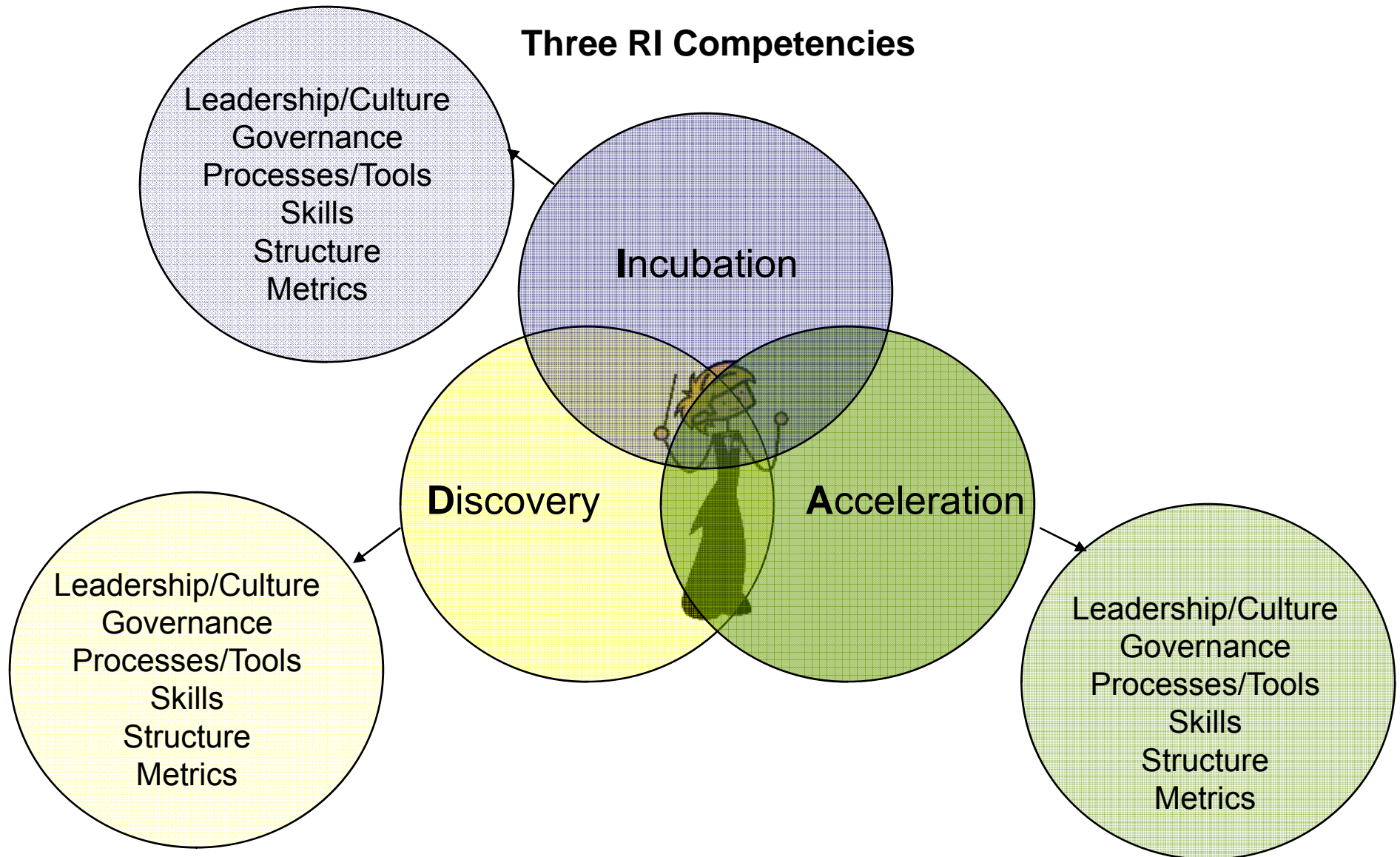


Not just one competency....but 3



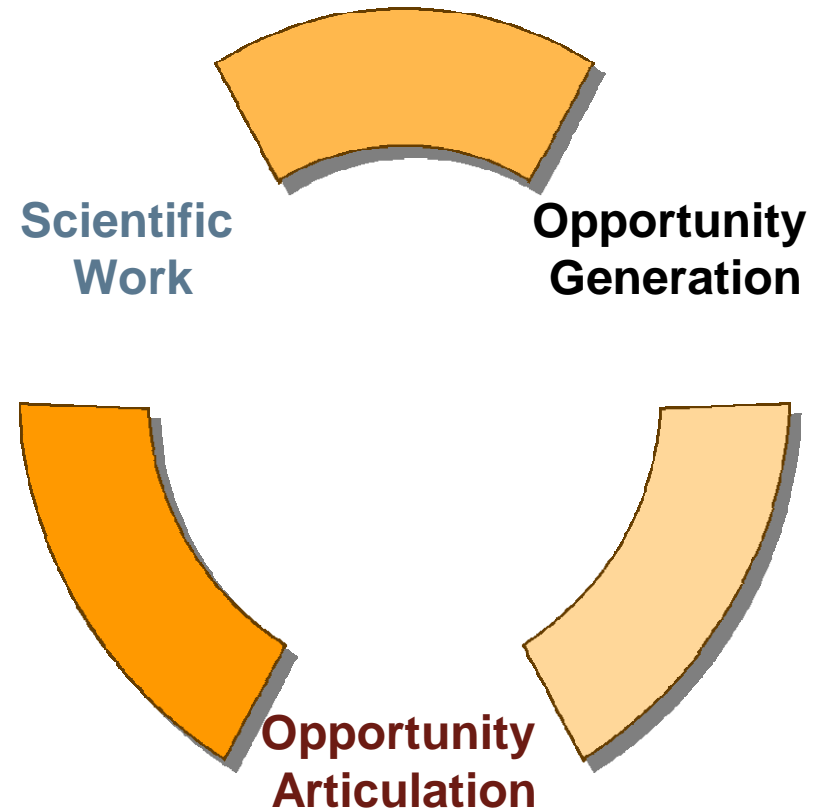
DIA isn't Linear

Three RI Competencies



Describing Discovery

- The creation and identification of opportunities that may have major impact in the marketplace, either through the delivery of new performance benefits or greatly improved performance.
- Discovery \neq Invention
- Discovery \neq R&D



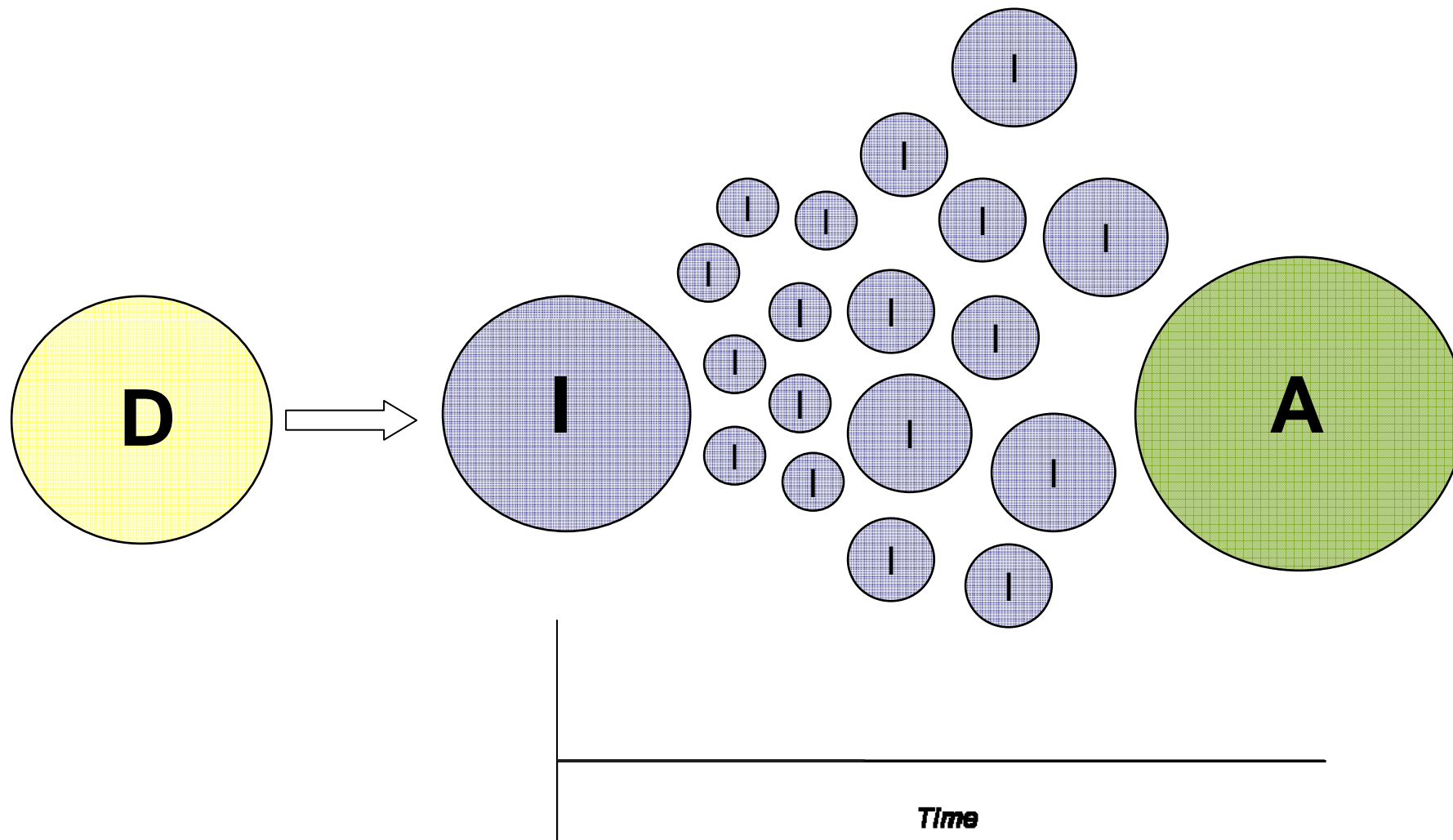


Incubation: The Long & Winding Road

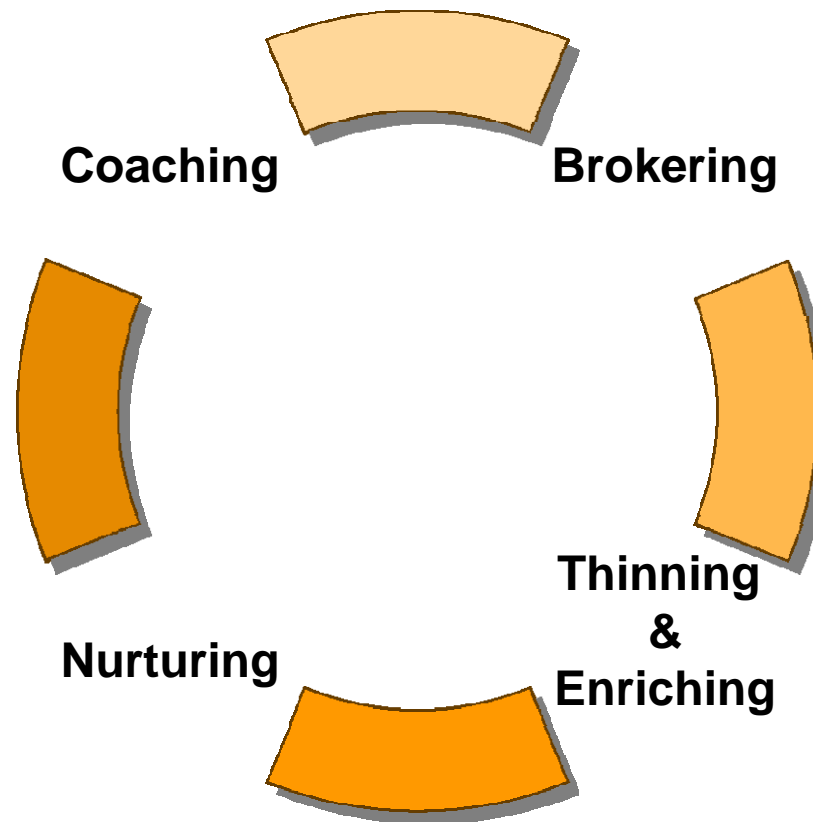
- A competency of experimentation. The ability to experiment with technology and business concepts/models simultaneously to arrive at a demonstrated model of a new business that brings breakthrough value to the market and consequently to the firm.
 - Allowances for failures, but expectations of continued pursuit of new frontiers.
 - Creation and pursuit of options.
 - Movement in multiple directions simultaneously.
 - Focus on learning and redirecting.
 - Focus on enriching and extending internal and external networks to enlarge scope of the company's knowledge base and commercial opportunity space....in big ways.

Incubation Portfolios

In Incubation many avenues are explored initially, but few enter Acceleration



Incubation Competency





Acceleration: Gathering Steam

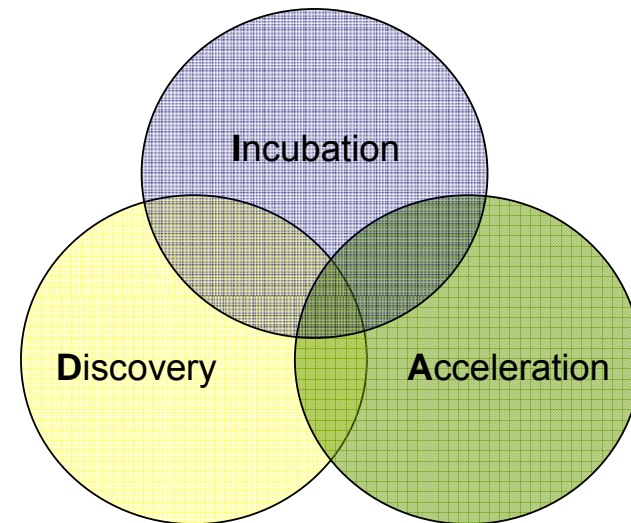
- Activities: Scale nascent businesses so they can compete with mature businesses in their ultimate home (existing BU, new division) for resources, attention.
 - Build critical mass of sales, operational infrastructure.
 - Establish market presence.
 - Develop management team.
 - Prepare to blend into fabric of the rest of the organization.

- Objectives
 - Predictable sales forecasts.
 - Acceptable yields.
 - A path forward to profitability.

- Challenge
 - Neither the BU's job nor R&D's

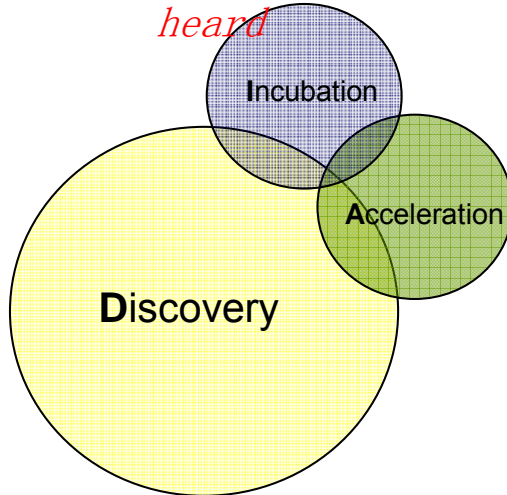
The DIA System Defined

- The set of activities that manage the links and interfaces within DIA, and oversee its health in terms of the RI mandate, it's perceived role in the firm, and its portfolio of businesses.

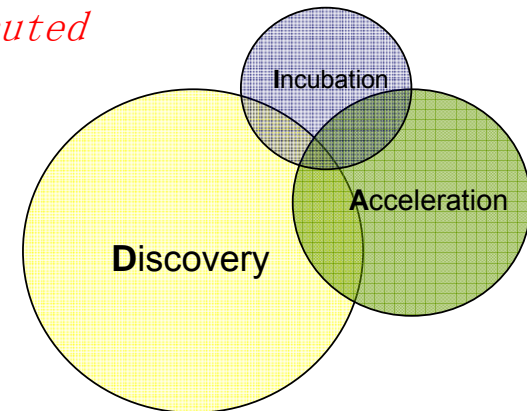


System Imbalances

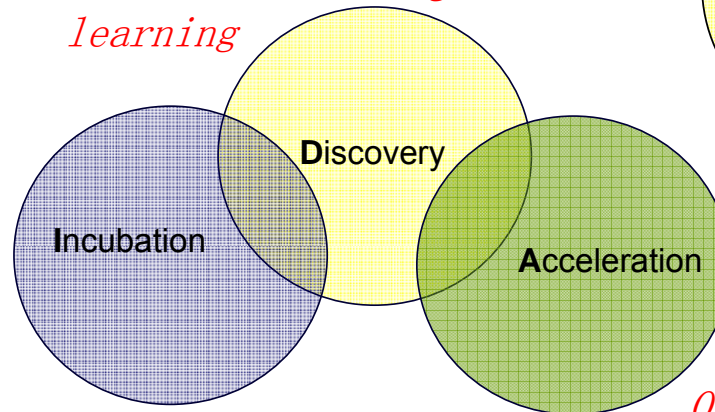
Can't get heard



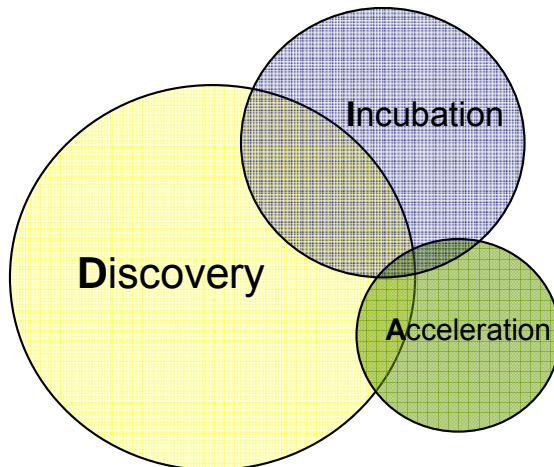
Big Ideas, Incrementally Executed



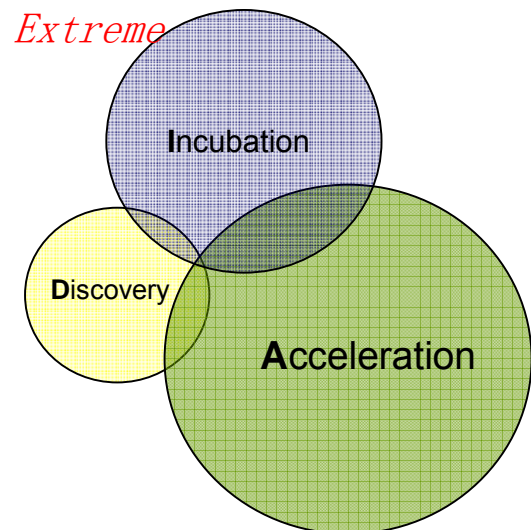
Failure to leverage learning



No Courage to continue



Open Innovation at the Extreme





DIA System Activities

- Monitor and manage system imbalance in conjunction with org'l capacity.
- Attend to portfolio health and diversity
- Assembling and re-assembling Project Teams
- Providing & enabling project infrastructure
- Barrier removal
- Broker external and internal liaisons
- Strategic alignment activities
- Providing help for project resource acquisition
- Education about role of Radical Innovation in the company viz a viz rest of innovation system and ongoing operations.
- Pacing of projects
- Oversee transitions from D→I→A→ landing zone



RI Portfolio Considerations

- Diversification
 - Degree desired?
 - Dimensions?
- Churn rate (viz a viz objectives)
 - Within D? I? A?
- Portfolio size objectives?
 - How many projects/platforms?
- Portfolio pacing objectives across DIA?
 - Easy to get caught up with I and A and forget to replenish the pipeline.
- Cross-portfolio management:
 - Synergies, spillover, redundancies



RI System Metrics

- Health/Activity of the Portfolio
- Interface Management
- Market Impact
- Impact on company

Innovation: an Emerging Management Discipline

- Amazing progress among most of our companies in the 4 year observation period.
- New roles emerging. Career paths for NBC a concern.
- Not a program, but a constant.
- But....very new yet. Most feel as if they're on the track, but wish they had better direction.

