



Scenario Study of the Future of BioSciences

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The Wharton School
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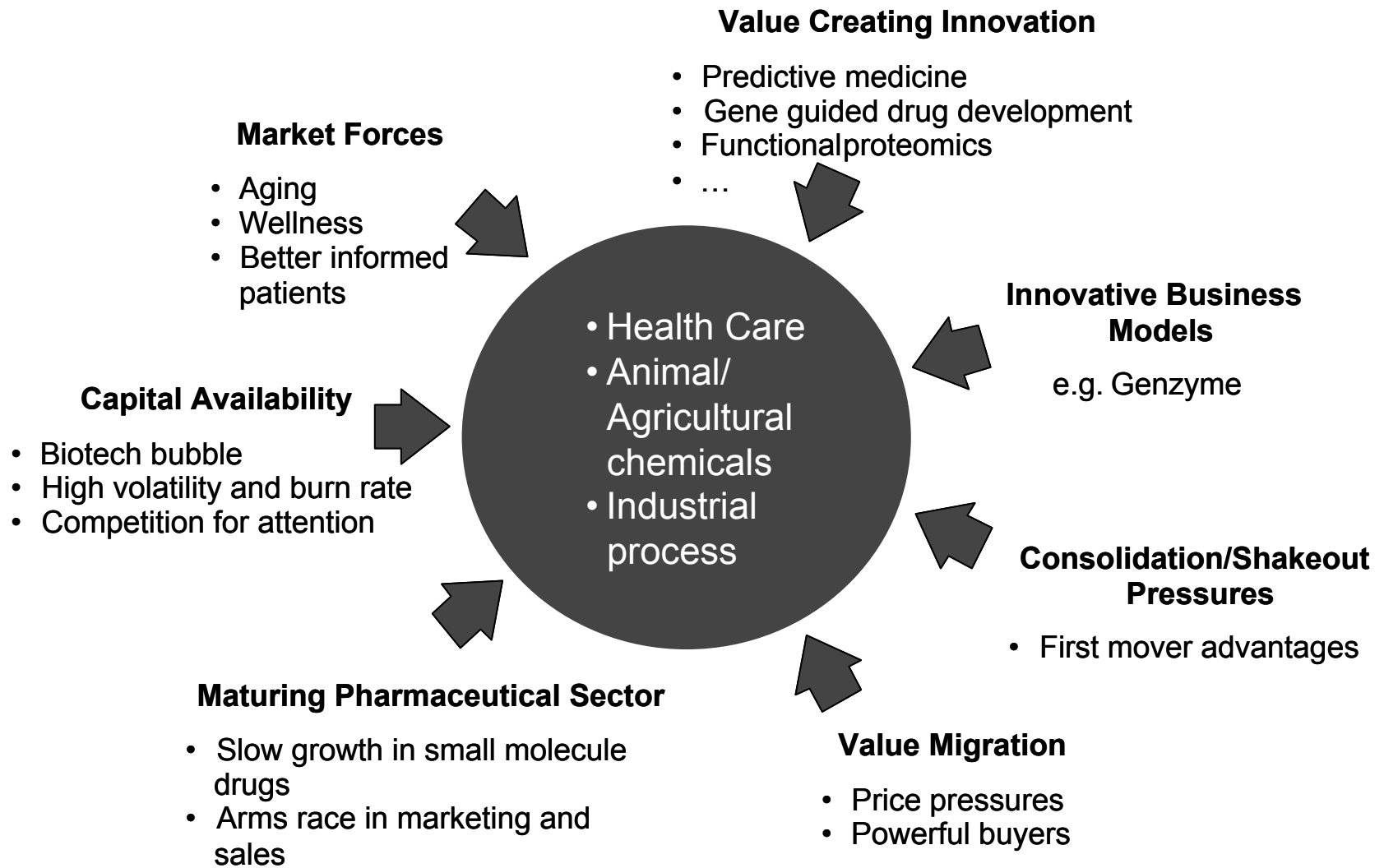
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Project Objectives

- **Provide Research-based guidance to decision-makers facing uncertainties and risks associated with emerging life science technologies**
 - » **Recruit the participation of thought leaders and stakeholders**
 - » **Apply scenario planning to develop future scenarios for the world of BioSciences**
 - » **Adapt patterns and lessons from other emerging technologies to BioSciences**
 - » **Identify strategic opportunities and challenges created by emerging life science technologies**

Provide a Strategic Framework for Navigating the Various Uncertainties of the BioSciences

Forces for Change in the Biosciences

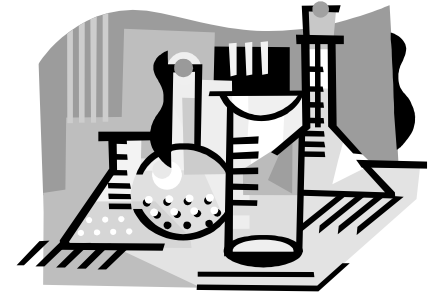


What Can We Expect to Learn?

- **How value will be created?**
 - **Which stakeholders will appreciate most of the gains?**
- **How the markets might evolve?**
 - **Constraints of regulatory process and public acceptance**
 - **Processes of consolidation and shakeout**
- **Who are the likely winners?**
 - **Will the technology sustain or disrupt?**
 - **Which business models will prevail?**
- **What organizational strategies will be most effective?**

Approach to Developing BioSciences Scenarios

- 1. Define the scope, time frame and viewpoint**
- 2. Assess endogenous and exogenous forces**
- 3. Map key stakeholders (endogenous)**
- 4. Identify key trends and uncertainties (exogeneous)**
- 5. Create a conceptual scaffold for scenario building**
- 6. Elaborate the scenarios by weaving in all elements**
- 7. Develop influence diagrams and/or system dynamic models**
- 8. Think through how scenarios will impact key sectors**
- 9. Introduce appropriate academic concepts and models**
- 10. Circulate a scenario report for comments and review**



Summary of Approach

Setting the Stage

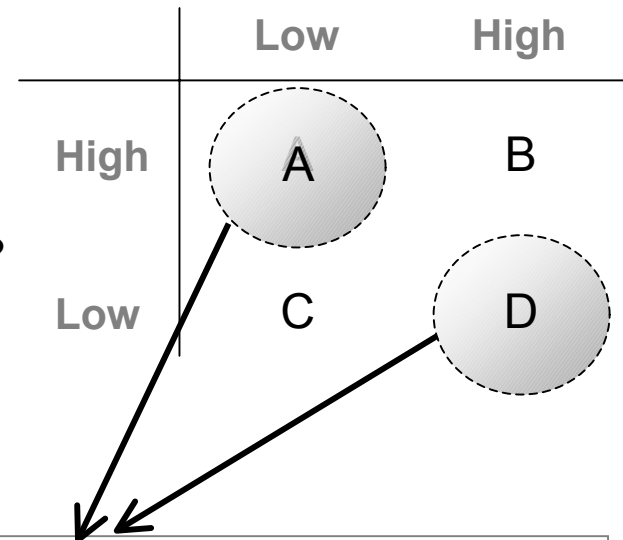
- Definition BioSciences
- Time Frame and Scope
- Mapping Stakeholders

Forces & Key Issues

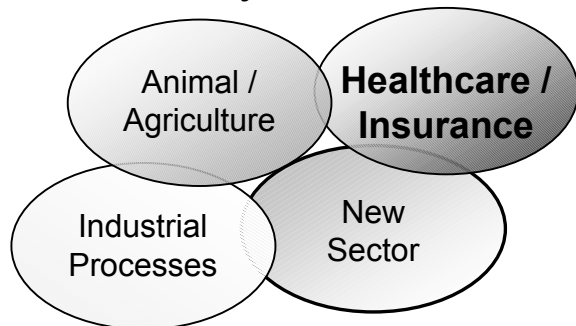
- Long-term trends
- Key Uncertainties
- Influence Diagrams

Societal Adoption?

Technological Success?



We shall overlay each meta-scenario on a given industry sector to see what the key implications are:

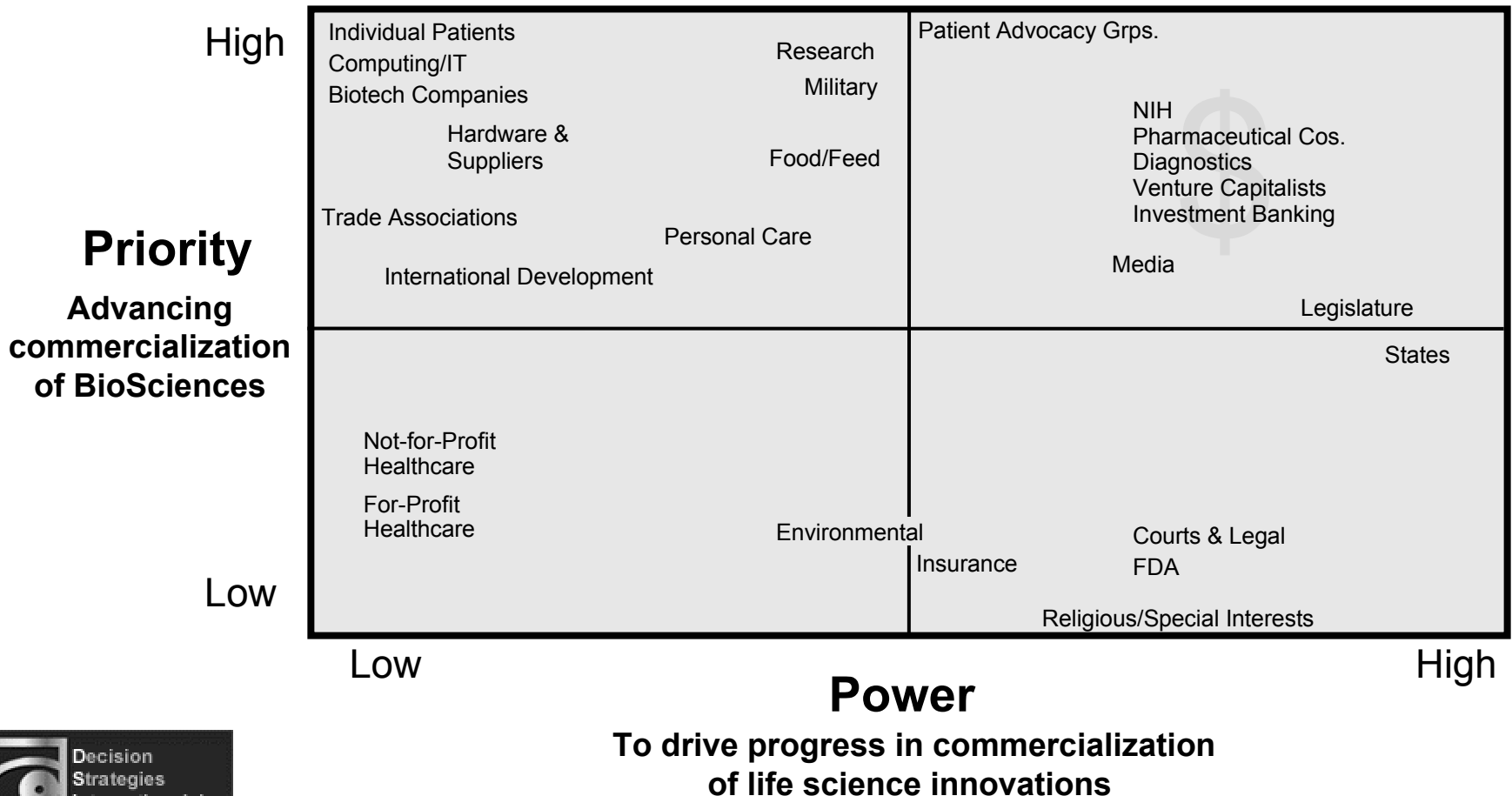


Domain specific themes:

- Alliances
- Vertical Integration
- Regulation
- Funding

Who Are the Stakeholders?

What is the positioning of major stakeholder groups, in terms of “priority” (incentives and motivation to get things done) and “power” (ability to make things happen)? Here is our preliminary map.



Our Preliminary Scenario Matrix

Societal Adoption?
Application of these modes of treatment & diagnosis

Technological Success?

Capacity of Science to deliver solutions

Mostly Failures \longleftrightarrow Success/Breakthrough

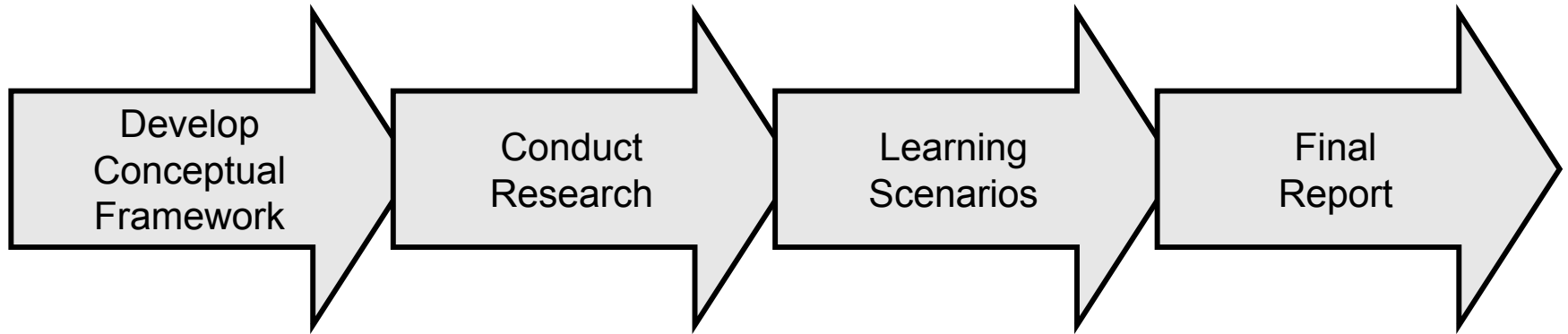
High
Utilization



Negative
Response/
Rejection

Where's the Beef?	New Age of Medicine
March of the Luddites	Genes vs. Memes

The Path Ahead



- Continuing the Scenario Building with DSI Process
- Ongoing Task Groups
- Management Research by Mack Center Faculty
- Research by Faculty, Ph.D. Students, MBA Teams
- Collaboration with other Research Centers, Medical Schools
- Industry Sponsorships & Collaboration
- Expert Interviews
- Monitoring Evolving Industry Trends

Sponsorship Levels

- **Access to Experts or Research Assistance**
 - Listed in report as a contributor
 - Invited to special Wharton BioSciences Conferences
- **Financial Support**
 - **Basic Sponsor - \$5K**
 - Listed in report as sponsor
 - **Premium Sponsor - \$10K**
 - Logo on the back cover of the report
 - **Sponsor with Partner Access - \$15-20K**
 - In-house presentation by members of the research team
 - Speaker invitation at special Wharton BioSciences Event
 - **BioSciences or Emerging Technology Partner - \$25K**

Biosciences Crossroads Initiative

Mack Center for Technological Innovation

MISSION: Help organizations and decision makers manage the risks and uncertainties of emerging biosciences technologies

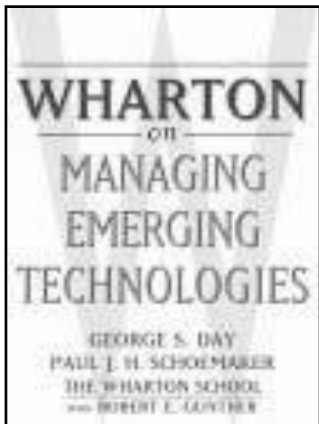
STRATEGY: 1. Recruit industry partners and thought leaders to set research priorities and guide the research program

2. Look for patterns of success and failure across emerging technologies

3. Adapt ET lessons to biosciences

- Enhance ability of firms to cope with disruptive change
- Find opportunities to profit from uncertainty

4. Address common issues during insight-building events



About Decision Strategies International

- **Recognized thought leader in Scenario Planning and Strategic Decision Making under Uncertainty & Complexity**
- **Proprietary Methodologies based on advanced research at leading universities and organizations**
 - » 8 published books
 - Includes recently released *Profiting from Uncertainty* by Paul J.H. Schoemaker
 - » 70+ articles in major journals
 - Includes widely circulated *Sloan Management Review* article “Scenario Planning: A Tool for Strategic Thinking” by Paul J.H. Schoemaker
- **Extensive experience with large clients across major industries (100+ engagements globally)**
 - » Healthcare, Media/publishing, Auto, Software/IT, Telecom, Financial Services

