

# Innovation: Making Choices – Bringing the Innovation Strategy to life



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# Our Core Values Are More Than Just Goals

They reflect the way we work and how we operate every day – with our customers, with our partners from around the world, and in the communities in which we operate.



## DUPONT CORE VALUES

**SAFETY & HEALTH**

**ENVIRONMENTAL  
STEWARDSHIP**

**RESPECT  
FOR PEOPLE**

**HIGHEST  
ETHICAL BEHAVIOR**

**Committed To Zero**

# Common challenges around Innovation

- ❖ Understanding how innovation is part of an overall business strategy
- ❖ Culture of innovation
- ❖ Focusing on the molecule or the resin rather than the customer
- ❖ Commercialization framework
- ❖ Governance process
- ❖ Open innovation

# Agenda

- ❖ Linking Business and Innovation Strategies
- ❖ Driving Innovation at DuPont
- ❖ Innovation Processes and Governance
- ❖ Product Commercialization Framework
- ❖ Bringing Innovation Strategy to Life
- ❖ Q&A

# Linking Business and Innovation Strategies

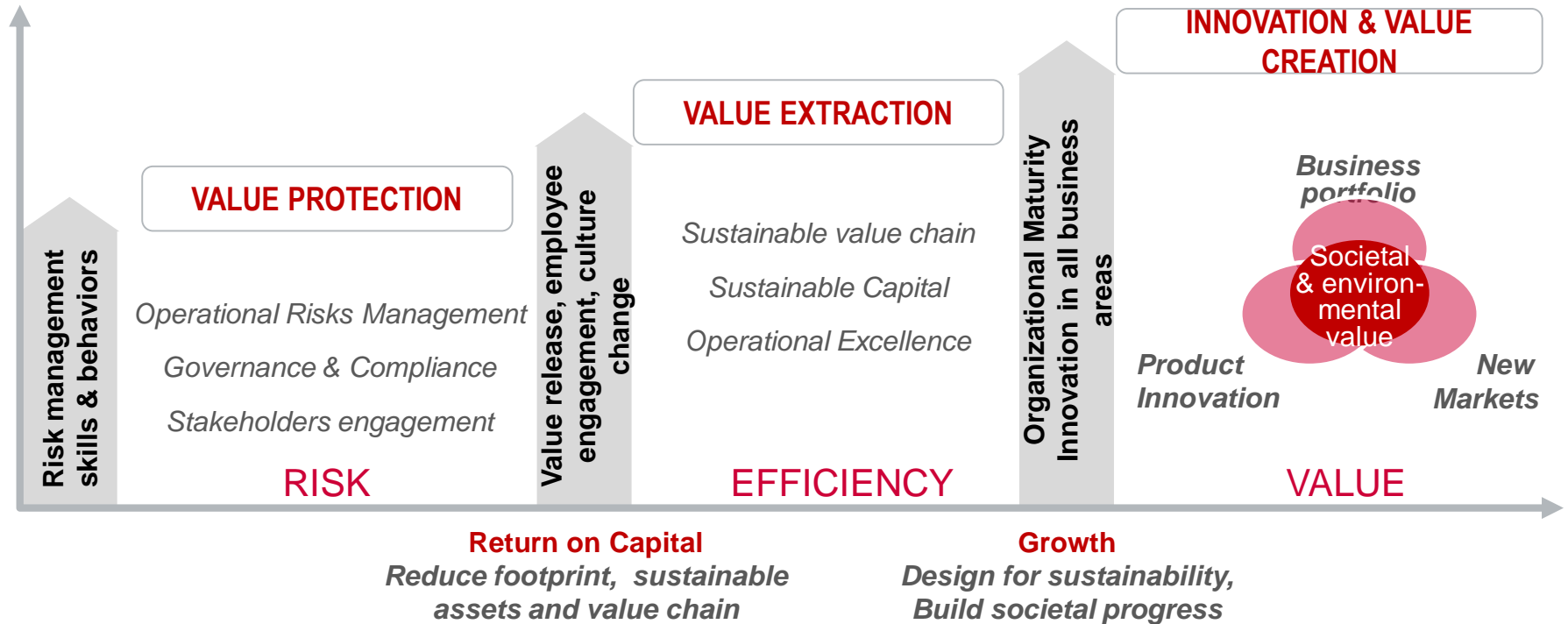

 The background of the slide is a photograph of a pair of hands holding a globe of the Earth. The hands are positioned at the bottom and sides, supporting the globe. The globe shows the Americas, with North and South America visible. The oceans are a deep blue, and the landmasses are green and brown.
 

# Our Purpose

## **DuPont Is A Science Company**

We work collaboratively to find sustainable, innovative, market-driven solutions to solve some of the world's biggest challenges, making lives better, safer, and healthier for people everywhere.

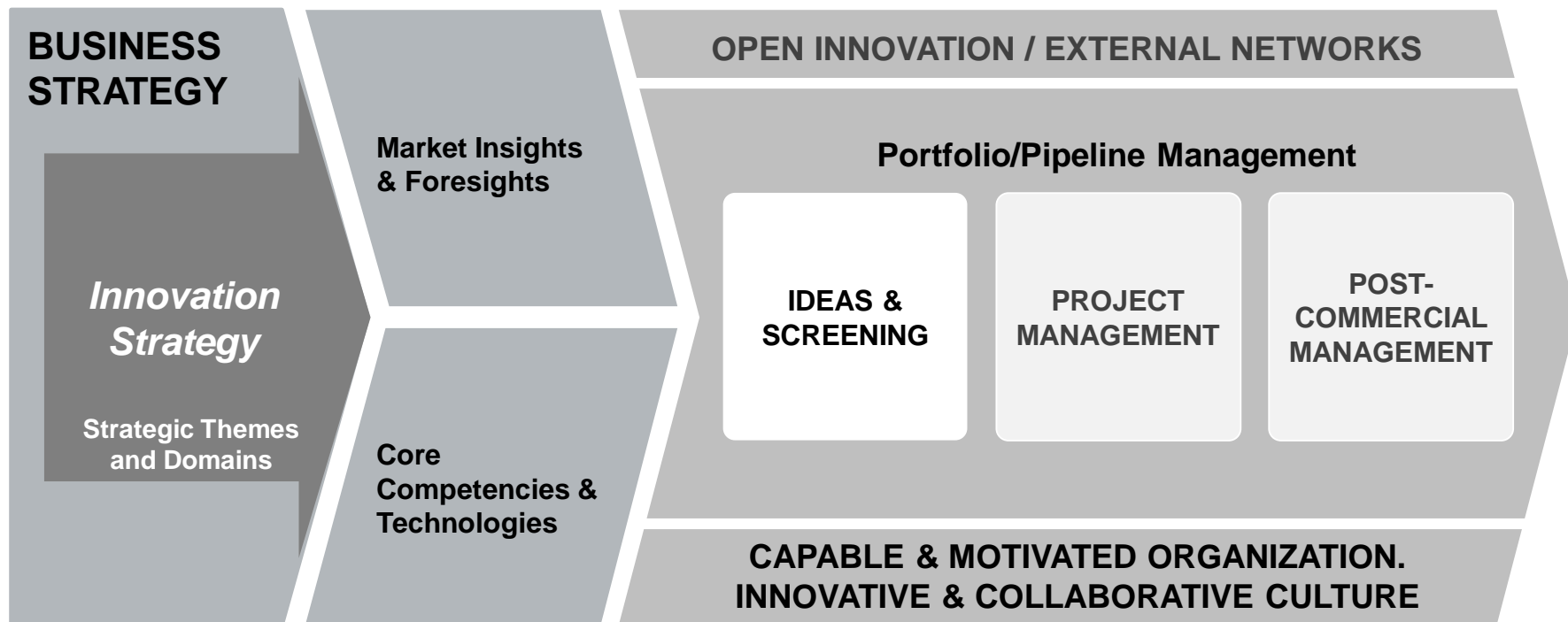
# Achieving a Sustainable and Profitable Business



# DuPont Innovation Management Process

*Our approach addresses three fundamental questions:*

- Is the current managing processes and sufficient to support innovation ambitions?
- What value can be driven by innovation, which are the priority improvement areas?
- What needs to be done to enable sustainable and replicable innovation process?





# Innovation is an Integral Part of Business Strategy



# Our Strategic Framework Is All About Choices



**Strategic Aspirations**

To successfully **summit the tallest mountains** in the world



**Where To Play**

Top three **tallest mountains** in the world



**How To Compete**

Proper training, teammates & equipment



**Capabilities To Win**



**Management Systems**

# DuPont Science Has Changed The World Over The Course Of Two Centuries...



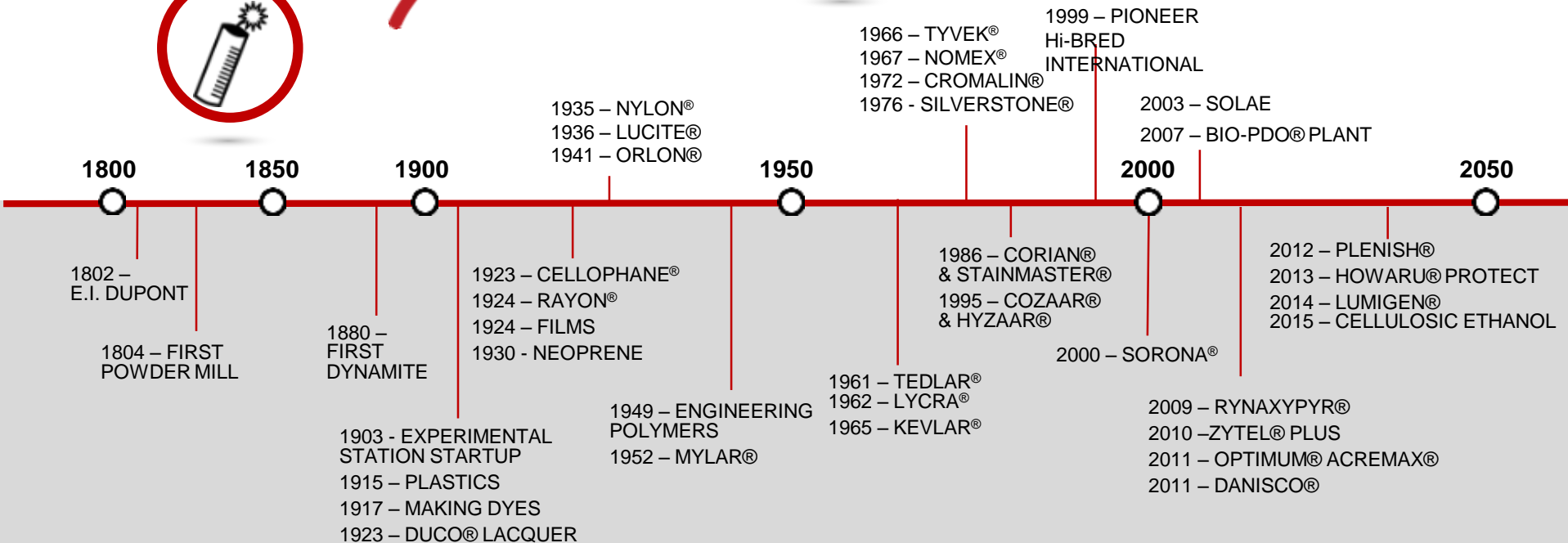
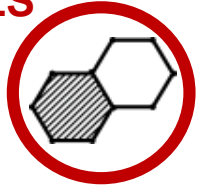
## EXPLOSIVES



## CHEMICALS & MATERIALS



## AG & NUTRITION BIOBASED INDUSTRIALS ADVANCED MATERIALS



# Our Areas of Focus

As the global population climbs up to 9 billion people in 2050, DuPont uses its science-powered innovation to help solve the challenges facing the world, with a focus on:



**FOOD**



**ENERGY**



**PROTECTION**

# Our Strategy Is To Build And Leverage World Leading Positions In Three Highly Attractive Strategic Focus Areas



## Agriculture & Nutrition

Extend our leadership across the high-value, science-driven segments of the agriculture and food value chain



## Bio-Based Industrials

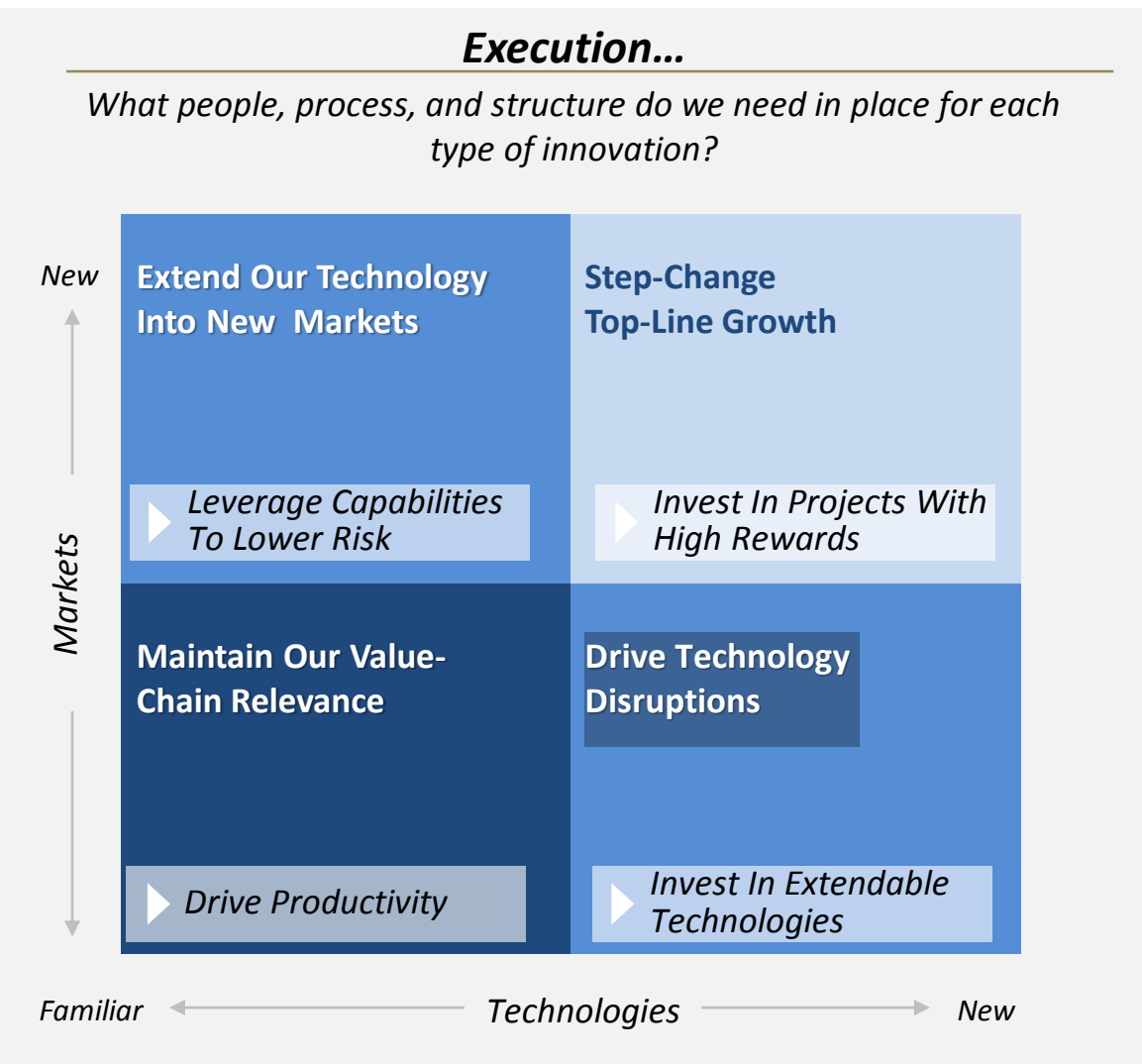
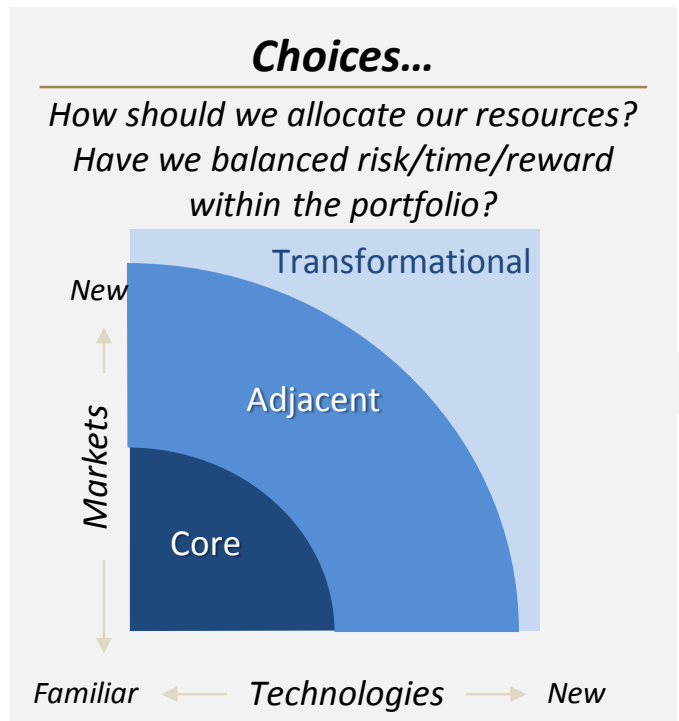
Develop world-leading industrial biotechnology capabilities to create transformational new bio-based businesses



## Advanced Materials

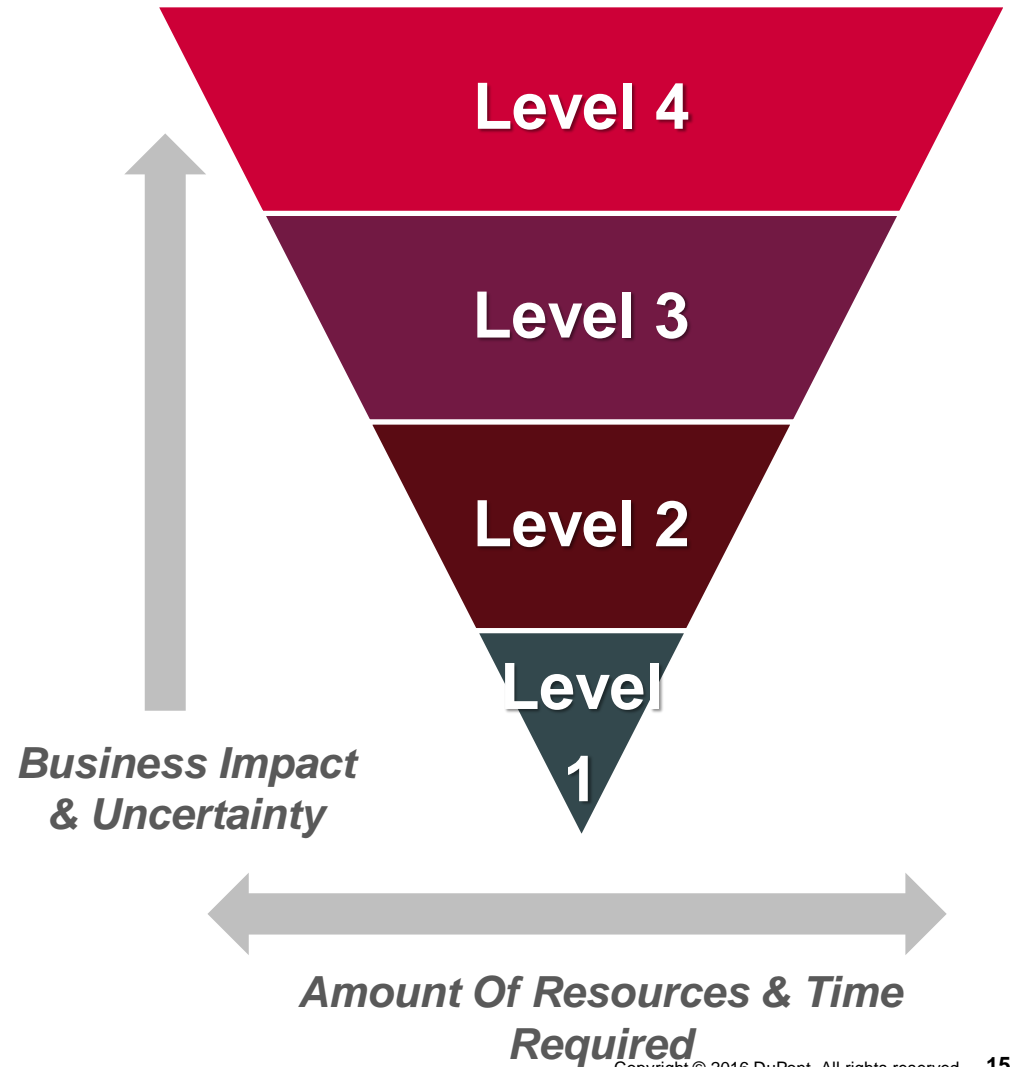
Strengthen and grow our leading position in differentiated high-value materials and leverage new sciences

# Execute Differentially



# We Must Re-Think Our Approach To Game-Changer Innovation

- Transformational, Game-Changer**
- Regionally Inspired Innovation
- Application Development
- Customer Development



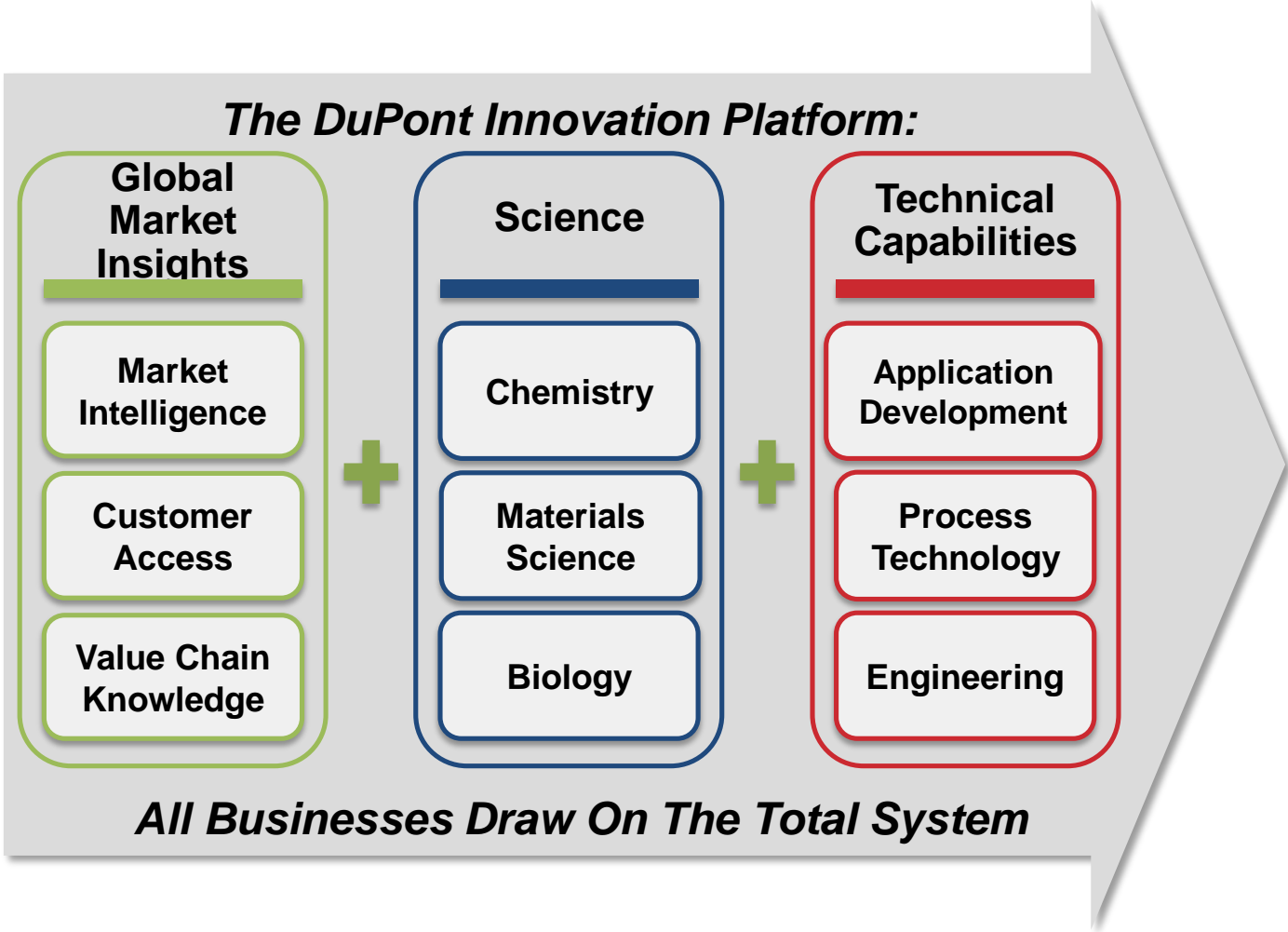


# Driving Innovation At DuPont

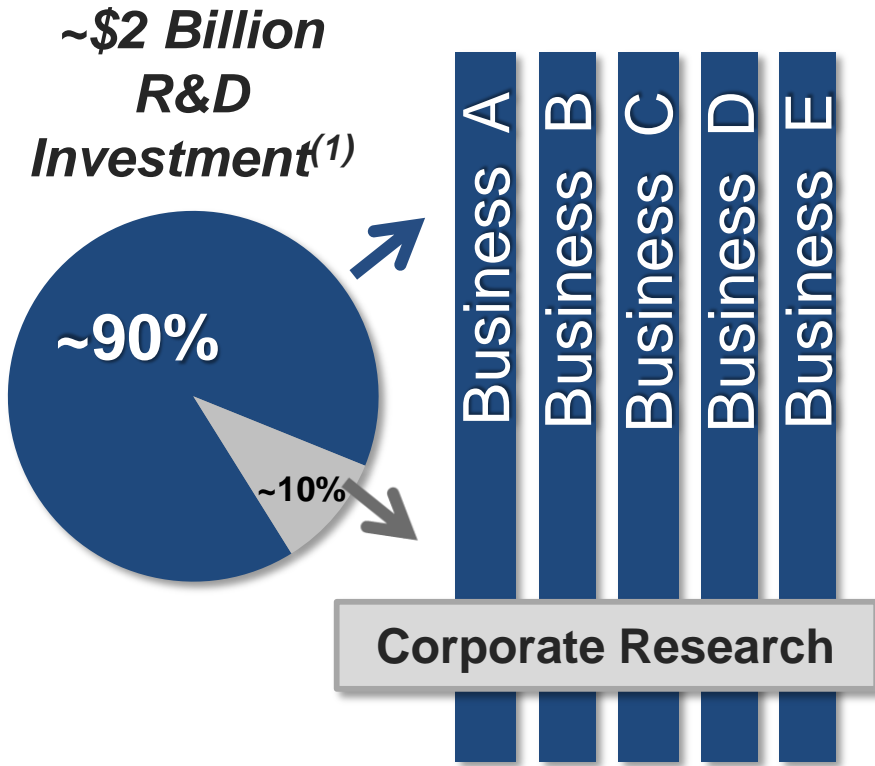




# Science-Based Innovation Drives Growth And Creates Sustainable Competitive Advantage



# Science-Based Innovation Is Business-Centered



## Business Portfolios

- Self-funded
- Driven by strategy
- Optimize time to market
- Customer intimacy

## CR&D Portfolio

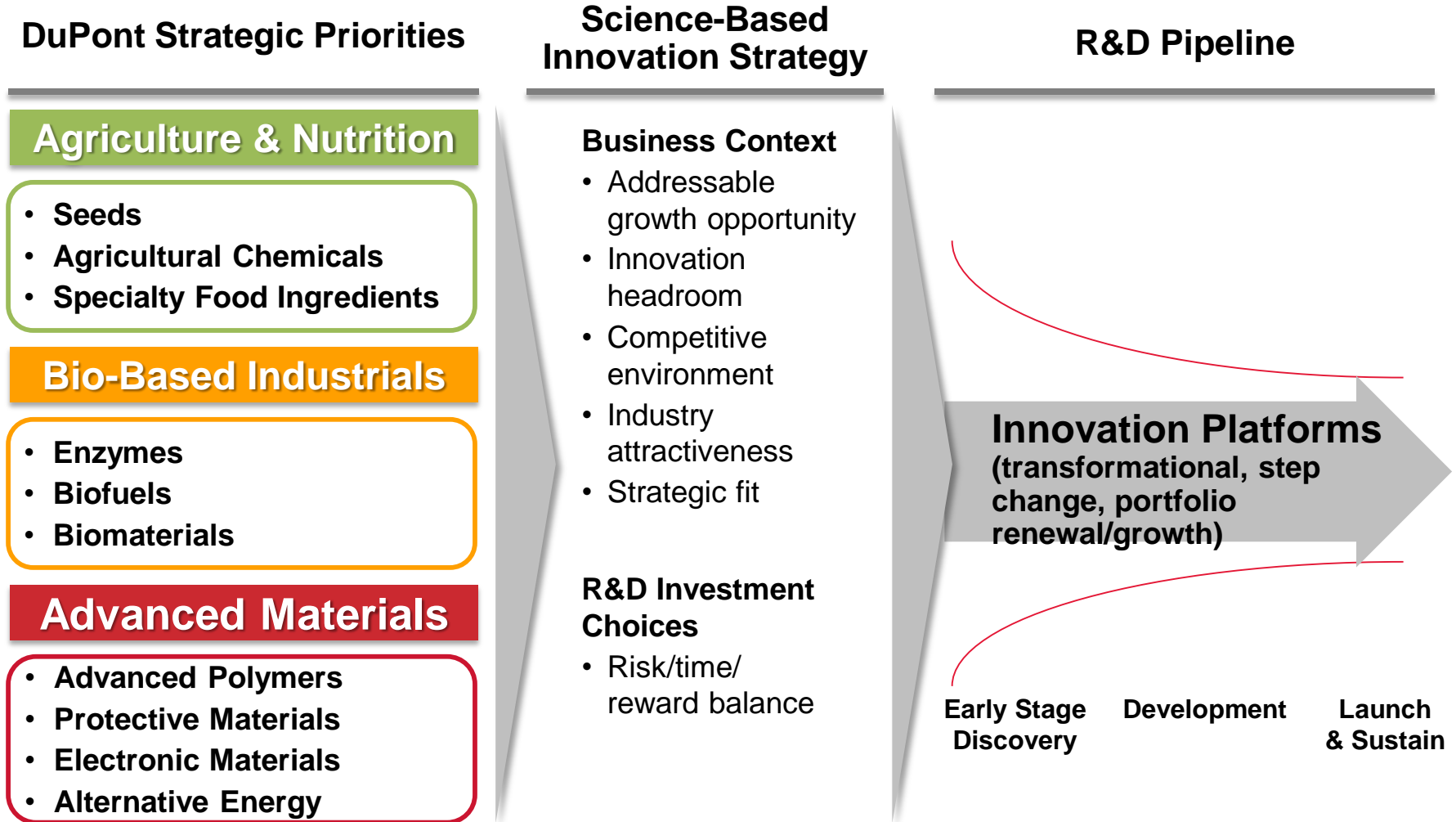
- Corporate strategic investments
- Broadens business strategies
- High challenge/high reward

**Robust End To End Portfolio Management**

# Innovation Choices Are Strategically Aligned At All Levels



## Strategic Priorities Inform Our Innovation Platforms And Pipeline Choices



# Advance Innovation Culture Through Organizational Health

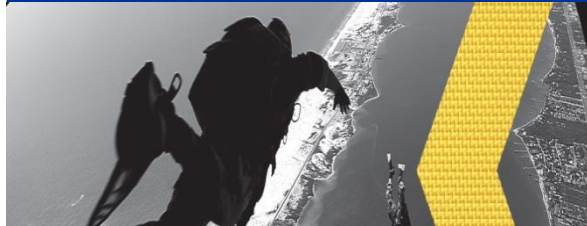


## Be Externally Orientated



- **Import ideas** and best practices from outside our organization
- **Understand and anticipate** our customers' needs
- **Acquire and use** information about our competitors to inform our business decisions

## Take Risks



- **Support innovation, creativity and initiative-taking** by rewarding the behavior that promotes thoughtful risk
- **Encourage** new ways of looking at things

## Accelerate



- Provide **clear direction and strategy** for how we will win and translate it into specific goals and targets
- **Clarity** on roles
- **Clear decision-rights**
- **Share** what we have learned so that we can move quickly

# Access To Leading Edge Science Brings Competitive Advantage



**Partners**



**Universities And National Labs**

**DuPont Science**  
**World Class Scientists**  
**Core Technologies**  
**Enabling Technologies**

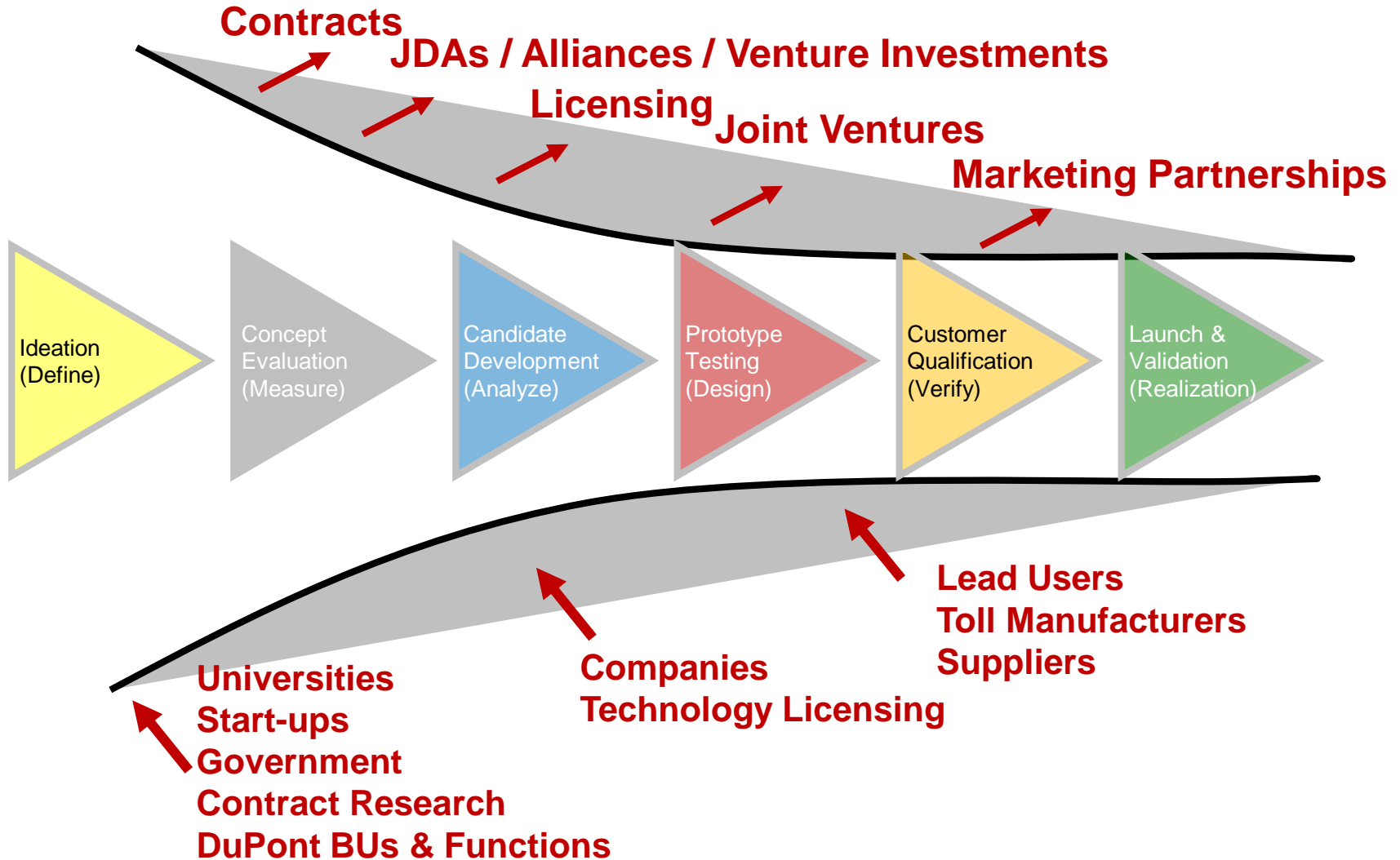
**Customers**



**Start-ups**



# Focus on open innovation

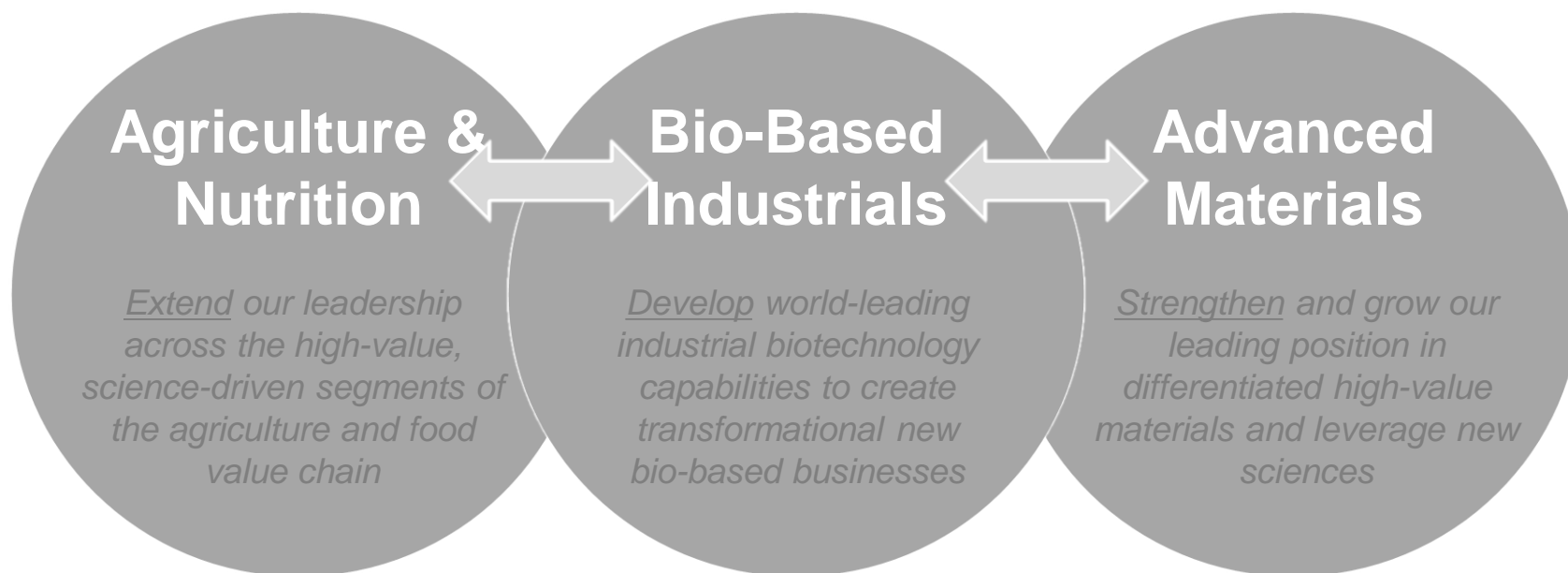


# Innovation Processes and Governance

# DuPont Strategy To Deliver Higher Growth And Higher Value



## Three Strategic Focus Areas...



## ...Delivered Through Strong Execution

**Leverage Innovation Platform To Deliver Above-Market Growth**

**Increase Penetration In Developing Markets And Deliver Local Solutions**

**Drive Operational Efficiency And Effectiveness**

**Actively Manage The Portfolio**



# Our R&D Portfolio Has Multiple Types Of Projects

**Top 100**

*High growth potential,  
Significant investment*

**Growth Programs**

*Growth potential,  
Sustain and renew  
portfolio*

**Incremental  
Investments**

*Incremental product  
renewal, Maintain Right to  
Operate*

All projects are aligned with the corporate and business strategies and require disciplined management to have the greatest impact.

# Leadership Engagement



*Leaders Are Aligned And Drive Bold Growth Goals And End-To-End Innovation Execution*





# Governance & Execution Of Innovation Portfolio

**Strategy**

**Office Of The Chief Executive**

Sets overall Company direction

**Science & Technology Center Of Excellence**

Enable advancement and differential deployment of science-based innovation across DuPont

S&T Strategy

Portfolio & Project Management

CoE Operations

Open Innovation & Globalization

**Technology Directors Network**

Optimize Corporate strategy, portfolio, and common processes

**Execution**

**Business, Regional And Functional Teams**

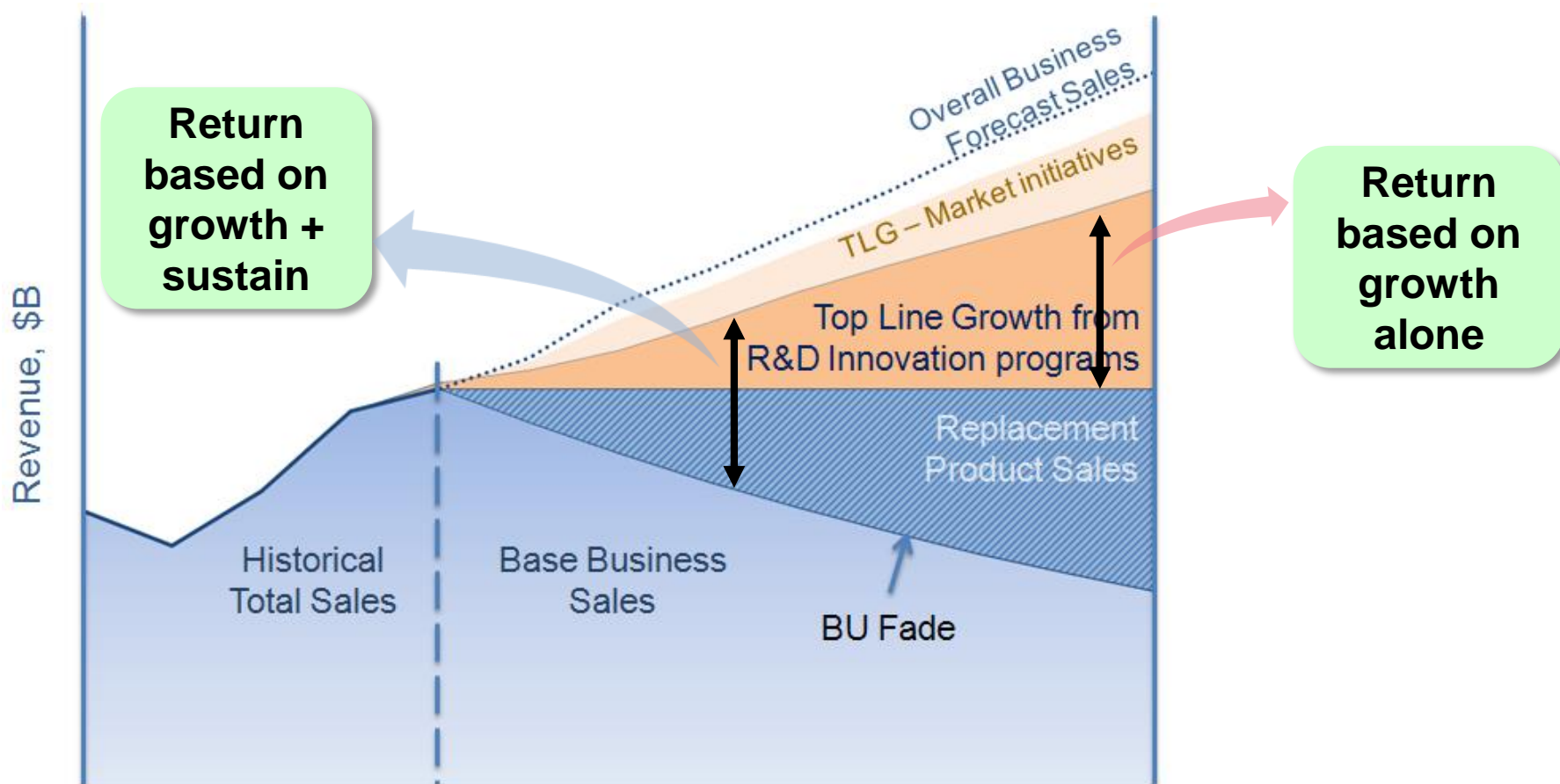
Optimize competencies & portfolios; Execute on strategies

# Key External Science & Technology Metrics



<b>R&amp;D Spend</b>	<b>\$2.0 B</b>
<b>R&amp;D Sales %</b>	<b>6.9%</b>
<b>U.S Patent Applications</b>	<b>&gt;1,550</b>
<b>U.S. Patents Granted</b>	<b>&gt;960</b>
<b>New Products Commercialized</b>	<b>&gt;1,550</b>
<b>New Products Revenue*</b>	<b>\$9 B</b>
<b>New Products Sales %</b>	<b>32%</b>

# Return On Innovation Investment





# Product Commercialization Framework

# Stage-Gated R&D Project Management Ensures Alignment With Business Processes

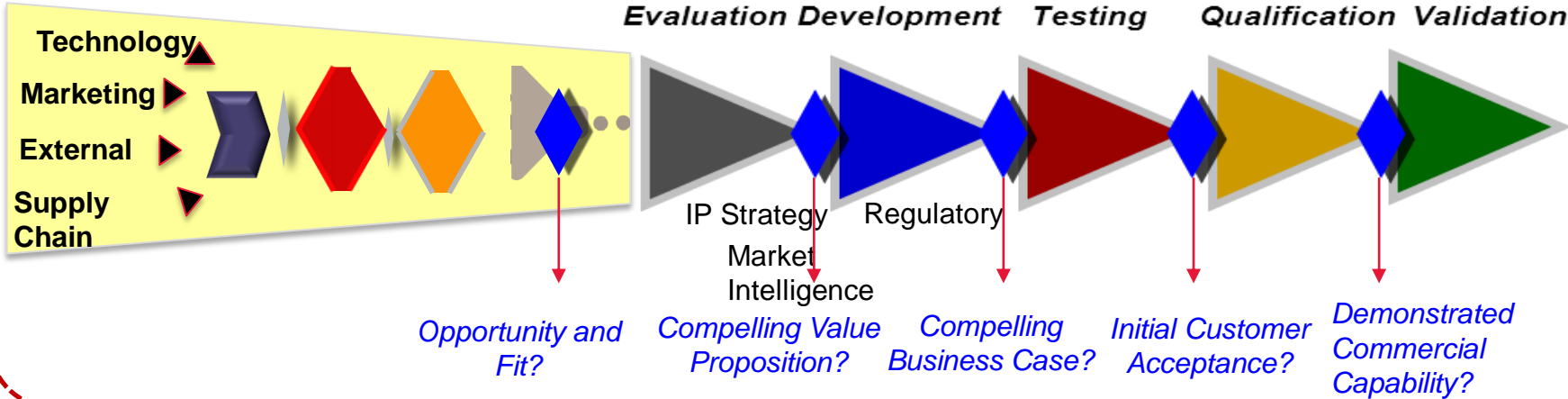
## Innovation Portfolio Management

- Project Mix**
- Impact
  - Risk
  - Stage
  - Time

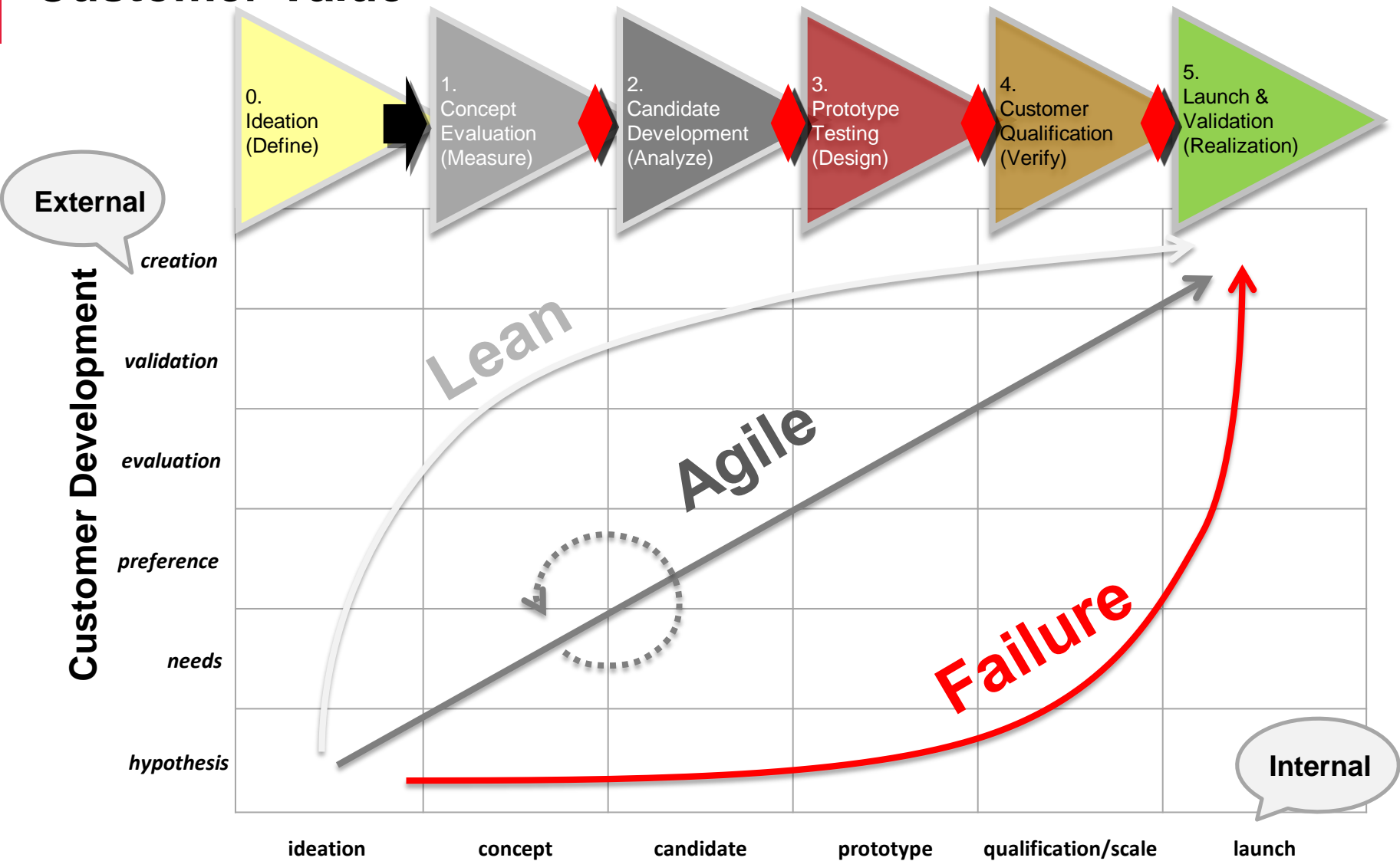
- Quantitative metrics inform...**
- Where resources are allocated
  - What and when investments deliver

### Concept Definition

### Governance & Execution

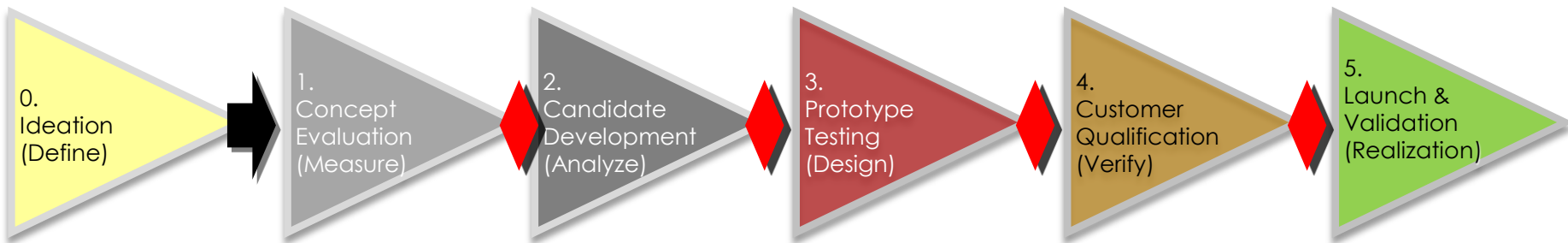


# ... To Drive Effective Execution Of Marketing & Technology Plans And Create & Deliver Superior Customer Value





# ... Covering All Key Functional & Practice Areas To Support Data-Driven Decision



<i>Opportunity and Fit?</i>	<i>Compelling Value Proposition?</i>	<i>Compelling Business Case?</i>	<i>Initial Customer Acceptance?</i>	<i>Demonstrated Detailed Design?</i>	<i>Demonstrated Commercial Capability?</i>
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Idea generation	Identify target segments	Develop product & process candidates	Customer evaluation and results	Final market launch plan	<b>Execute market launch</b>
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<b>Define project &amp; scope</b>	Quantify addressable market	<b>IP Strategy</b>	Optimized product & process for scale-up	<b>Operations</b>	Trade-off to <b>Sales</b>
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High opportunity	Competitive assessment	Patent strategy	<b>Product stewardship review</b>	<b>Make product in commercial facilities</b>	Financial performance evaluation
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Competency fit assessment	<b>Identify target customer</b>	Price & positioning strategy	Plan for commercial manufacturing	Customer qualification of commercial product	Revenue acceleration plan
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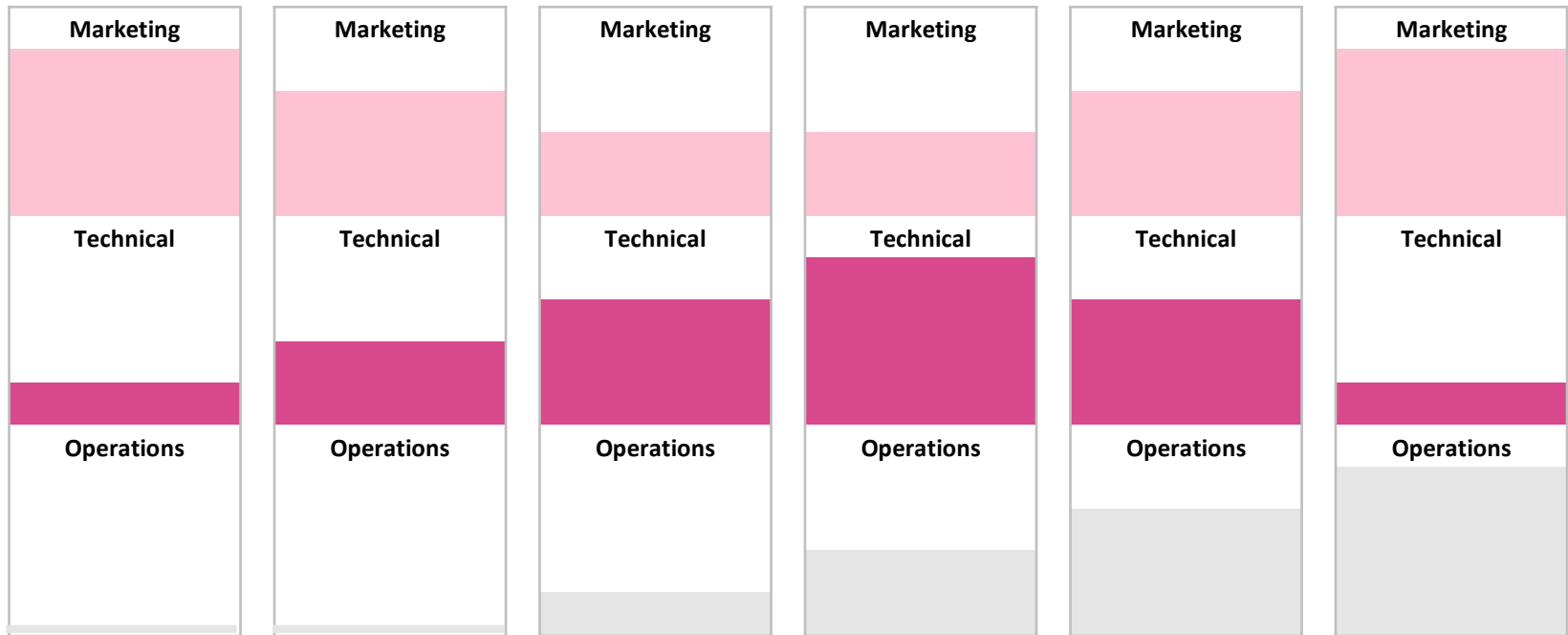
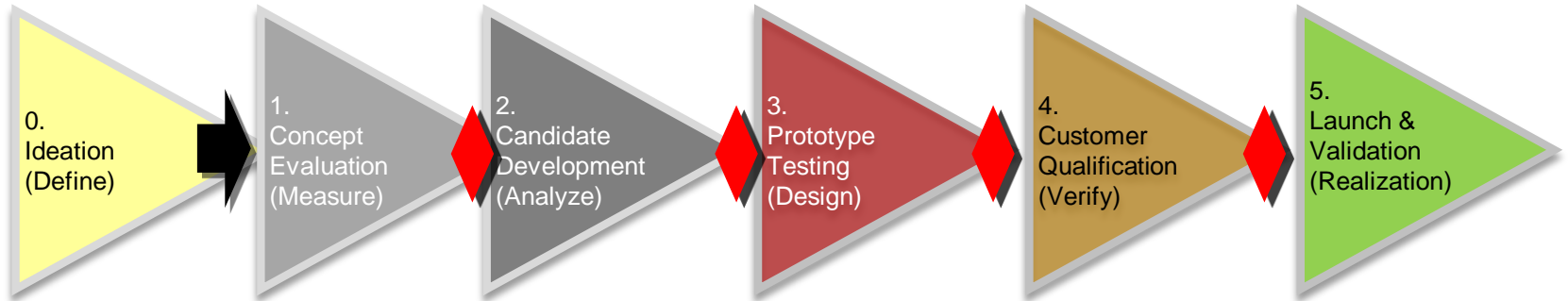
Outline business case	no development objectives)	Product stewardship & regulatory plan	Market entry & launch plan	<b>Confirm robust supply chain</b>	Project closure & key learnings
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Define customer needs	Technical feasibility assessment	Customer sampling plan (for external evaluations)	Price optimization	<b>Supply Chain</b>	
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Market assessment (opportunity, size and growth rate)	Value proposition		<b>Initiate integration into business processes (DIBM)</b>		
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Project proposal	Preliminary financials, risks, and project plan				
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# ... And Resourced In A Way That Is Consistent With The Nature Of The Stage



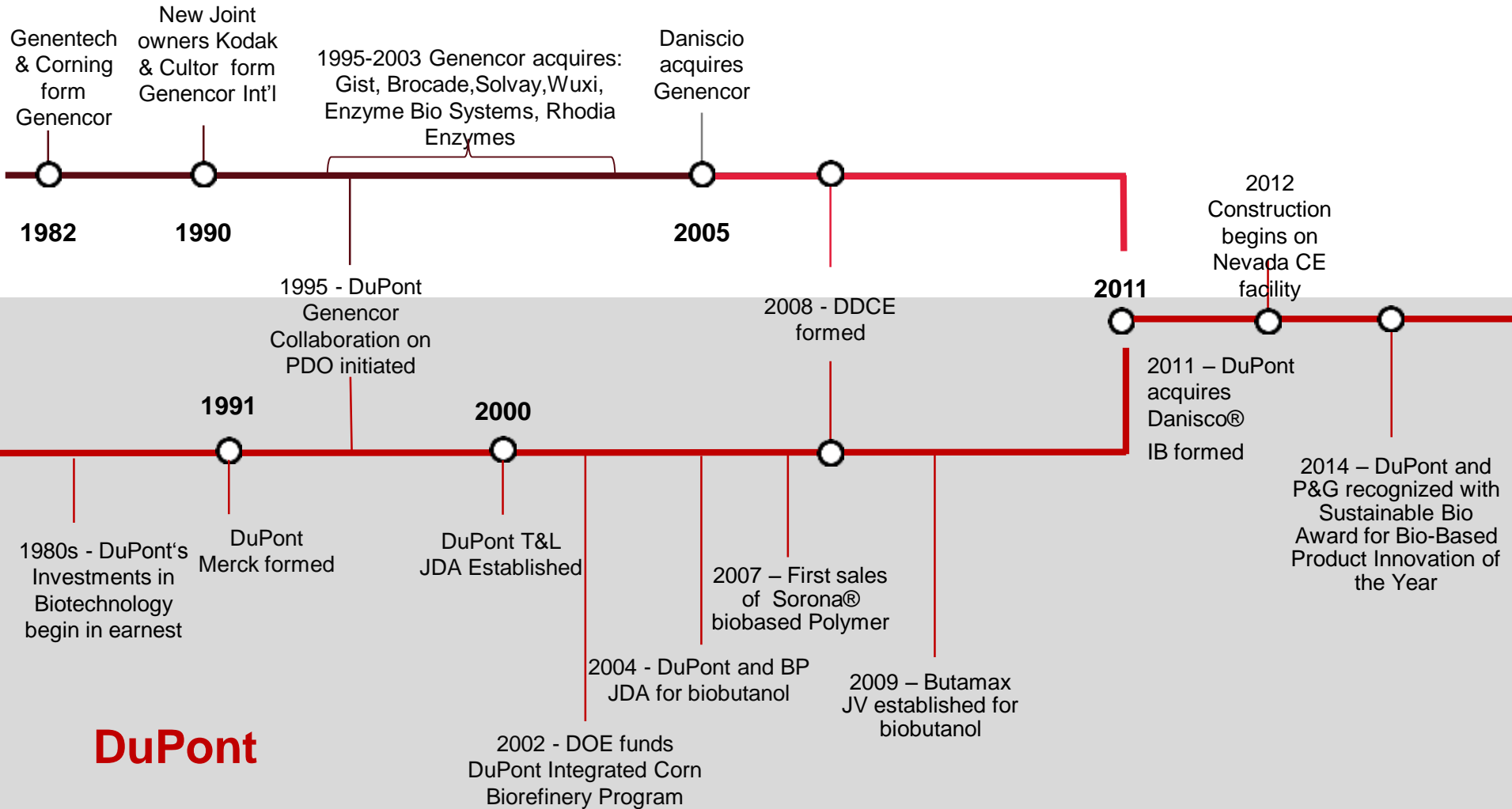


**Bringing Innovation Strategy to Life**

# Two Early Pioneers In Modern Industrial Biotechnology

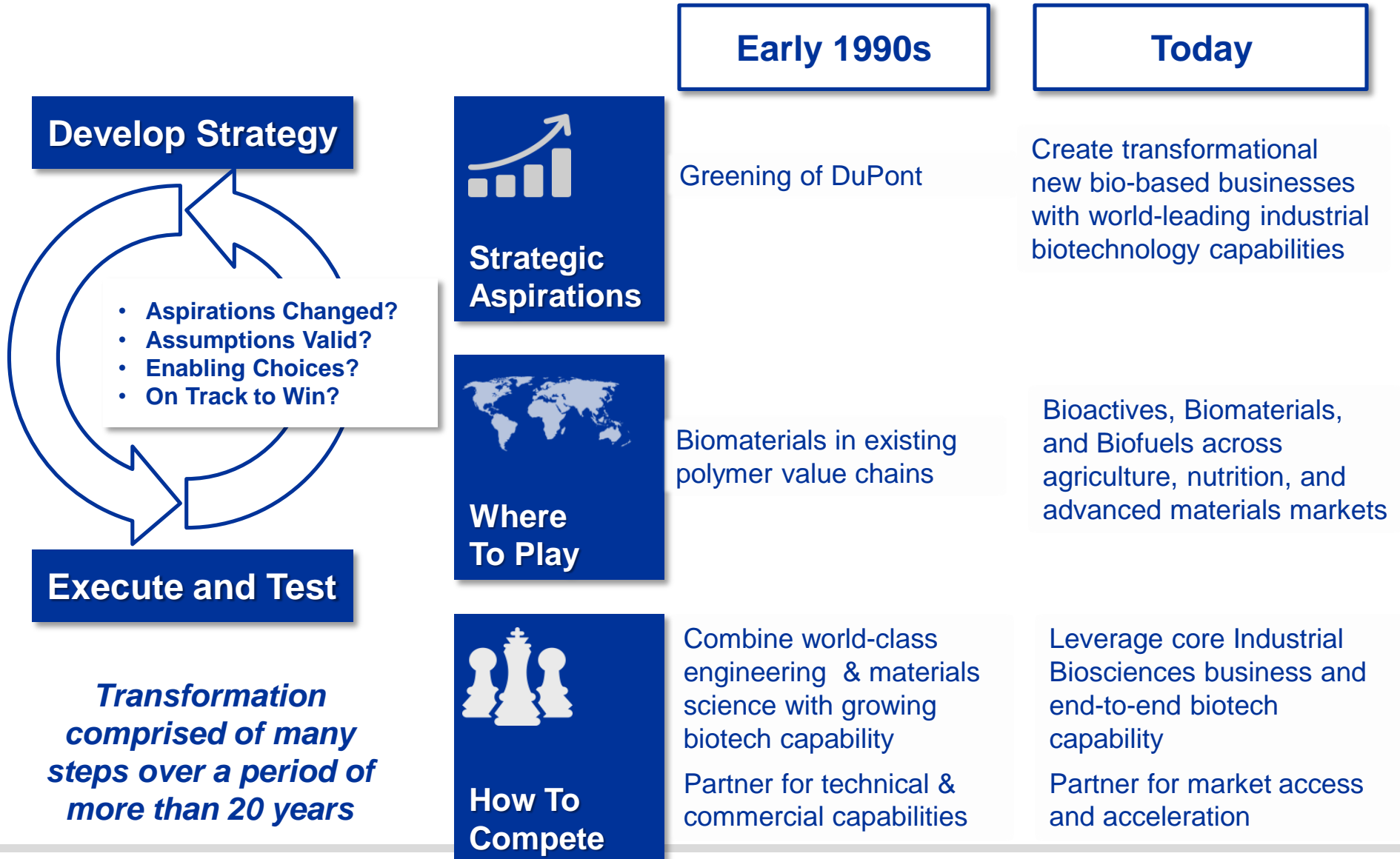


## Genencor



**DuPont**

# Transformational Strategy – An Evergreen Process



**Develop Strategy**

- Aspirations Changed?
- Assumptions Valid?
- Enabling Choices?
- On Track to Win?

**Execute and Test**

*Transformation comprised of many steps over a period of more than 20 years*



**Strategic Aspirations**



**Where To Play**



**How To Compete**

# Industrial Biotechnology Transformation – Success Factors



- ❖ Company culture of renewal and alignment with science company strategy
- ❖ Top management vision and long-term commitment
- ❖ Partnerships for key capabilities and resources
- ❖ Rapidly advancing field of biotechnology
- ❖ Increasing demand for sustainability

# We Are On A Journey To Adopt Winning Behaviors



## How We Operate

Technology mindset for transformational innovation

Limited capabilities to advance, especially deep market context

Invent

DuPont speed

Doing what we know how to do

Collegially working together

Process and perfectionism

## How We Win

**Business mindset with full access to internal and external capabilities**

**Building market insights and capabilities to be relevant, differentiated, credible & capture value**

**Build, Align, Collaborate**

**Market speed**

**Doing what we need to do to win**

**Collaborating intensely and effortlessly within the venture, DuPont and externally**

**Calculated willingness to act**



## **DuPont Sustainable Solutions**

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# Stage “Zero” – Process And Major Deliverables



## Define Challenges

- Identify key challenges in target markets
- Define problem and market opportunity size
- Prep meeting to share market and technical information

## Create Opportunities

- Organized efforts to start trend analysis and generate ideas
- Diverse group of knowledge experts (includes external where needed)
- Enriched & Aggregated Ideas Describe in one page concept
- Expert sieve results in recommendations to Decision Board for go/no go to proceed to PCF and move to in-depth opportunity assessment

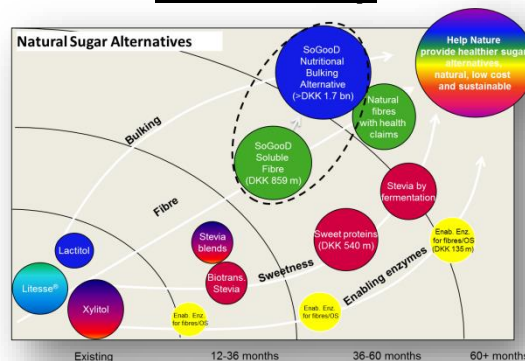
## Assess Opportunities

- In depth market analysis and initial technical feasibility assessment
- Sustainability & Safety assessment
- Define value proposition and initial product CTQs
- Financial model with sensitivity analysis complete
- Final proposal presented to Decision Board



Major Deliverables

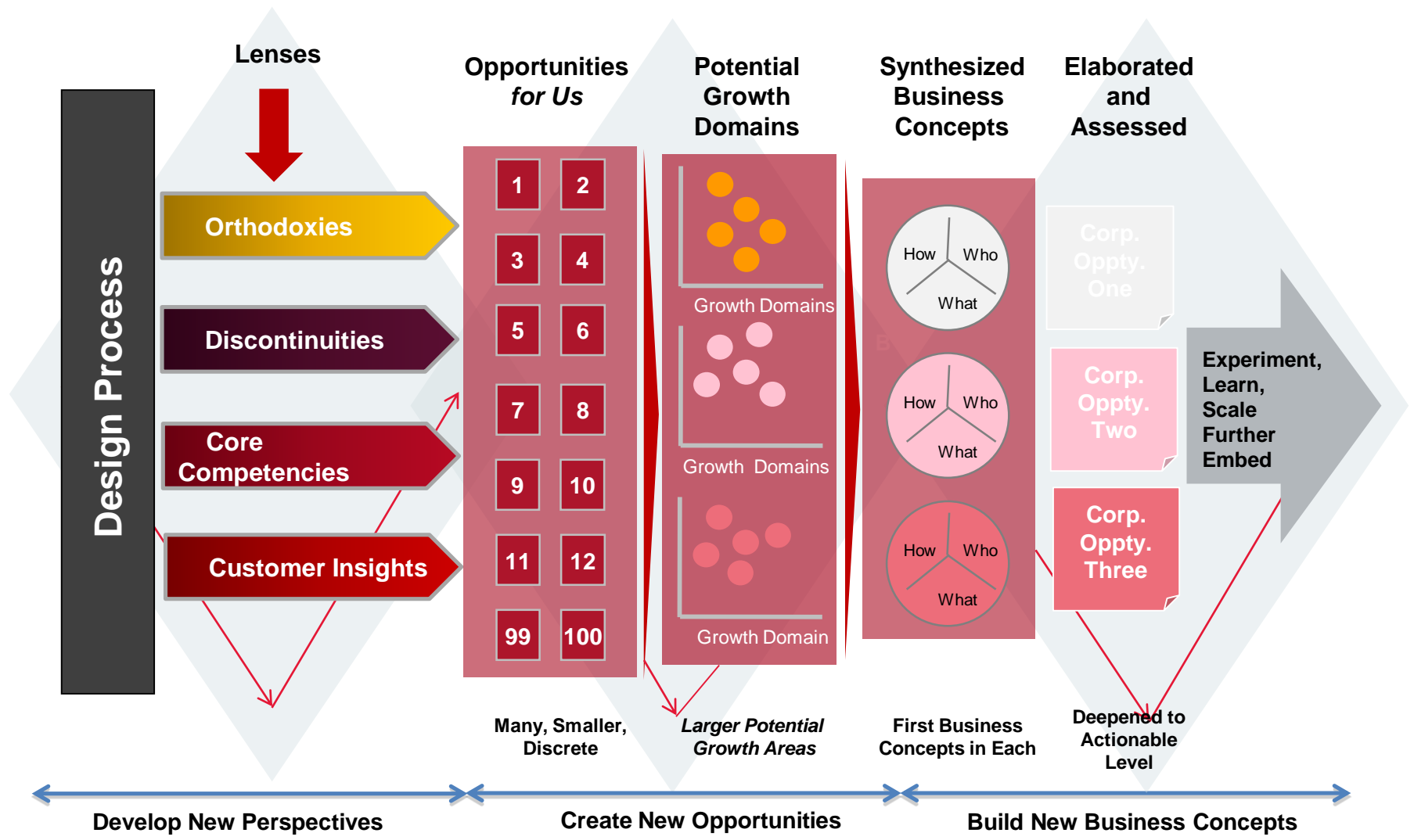
### Domain Map



### Business Concept & Case

<p><b>1. Objective</b></p> <ul style="list-style-type: none"> <li>- Idea and benefits</li> <li>- Goals &amp; targets</li> </ul>	<p><b>6. Competitive Advantage</b></p> <ul style="list-style-type: none"> <li>- Sources of Advantages</li> <li>- IP Position &amp; Strategy</li> </ul>
<p><b>2. Problem</b></p> <ul style="list-style-type: none"> <li>- Market &amp; Applications</li> <li>- Customer Unmet Needs</li> </ul>	<p><b>7. Tech &amp; Manufacturing</b></p> <ul style="list-style-type: none"> <li>- Mkt/Product Req't's</li> <li>- Capability Req't's</li> </ul>
<p><b>3. Why Now</b></p> <ul style="list-style-type: none"> <li>- Market Trends/Changes</li> <li>- PESTE/SC's /SWOT</li> </ul>	<p><b>8. Business model</b></p> <ul style="list-style-type: none"> <li>- Revenue &amp; Margin Model</li> <li>- RTM Model</li> </ul>
<p><b>4. Market Size</b></p> <ul style="list-style-type: none"> <li>- Attractiveness</li> <li>- Strategic Fit</li> </ul>	<p><b>9. Financials</b></p> <ul style="list-style-type: none"> <li>- Fin Model /w sensitivity</li> <li>- Demand, Drivers &amp; Assumptions</li> </ul>
<p><b>5. Solution</b></p> <ul style="list-style-type: none"> <li>- Value Proposition</li> <li>- Design Concepts</li> </ul>	<p><b>10. Risk Management</b></p> <ul style="list-style-type: none"> <li>- Mkt Risk</li> <li>- Tech Risk</li> </ul>

# Create Opportunities – Define Growth Domains



# Assess Opportunities – Build A Compelling Business Case



- Is the market opportunity real?
- Is the product need real?
- Can we crystalize market concept – i.e., target segment and how the product can do a better job of meeting the customer needs?

- Can we deliver the product in the required vol.at required cost?
- Can we create a sustainable competitive advantage?

- Will the product be profitable at an acceptable risk?
- Does launching the product make strategic sense?

- Market & Appln Map
- Customer unmet needs
- Minimum essential CTQs
- Competitive alternatives

- Initial Value Proposition
- Potential product concepts
- Capability requirements
- IP analysis & strategy

- Market potential & assumptions
- Initial financial model w/ sensitivity
- Risk assessment – Tech & Mkt
- ...

**Value Proposition Worksheet**

Name: \_\_\_\_\_  
Project: \_\_\_\_\_  
Dev'l Stage: \_\_\_\_\_

1. **Concept Statement:** (Describing the concept from the customer's perspective)

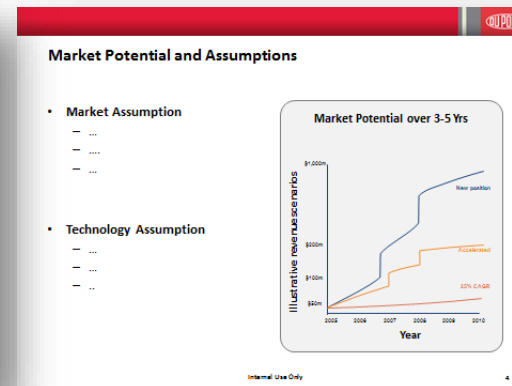
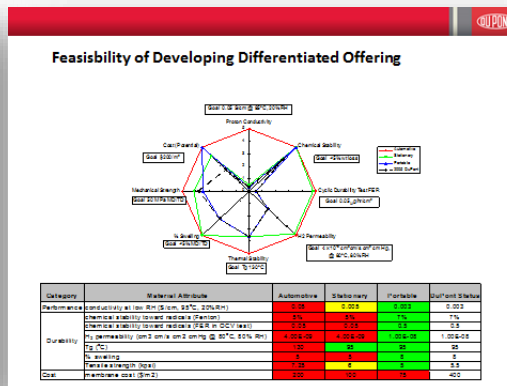
2. **Target Market (DuPont's Perspective)**  
Target Opportunity (What is it and how valuable is it?)

3. **What is your offering? (include product and service)**  
Your Target Audience for the offering above:  
Describe features and benefits:  
Features: \_\_\_\_\_  
Benefits: \_\_\_\_\_

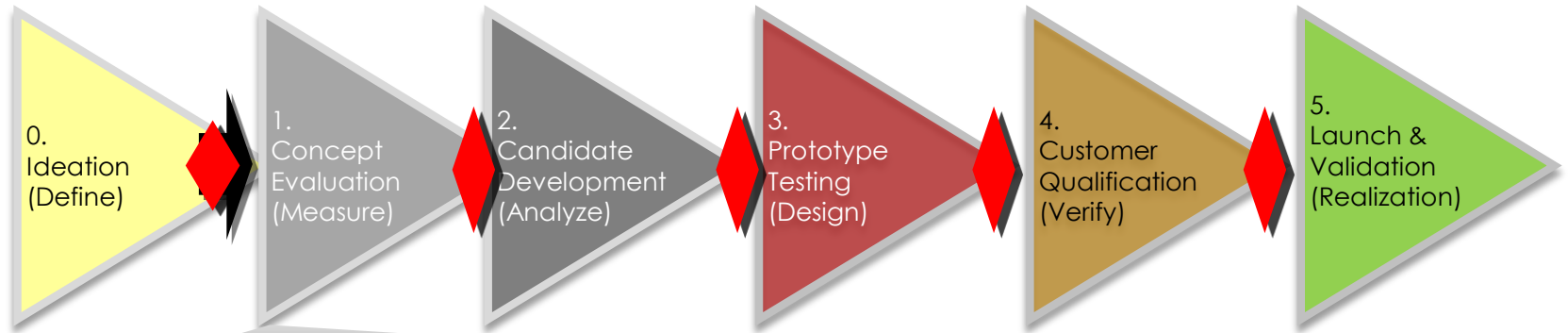
Target Points in Value Chain (Will you serve multiple levels?)

Target "Customer Segments", Customers & Geographies (Identify)

Internal Use Only



# Key Objectives And Deliverables



## Stage 1 Key Objectives

- ❑ Evaluate the market opportunity, competition and technical feasibility in enough detail to define the specific project objectives and measures of success toward a documented value proposition, in the presence of recognized uncertainties.
- ❑ Assess the potential financial impact of the project, including determining which variables in the financial model have the highest impact on program success.
- ❑ Develop an overall project plan, including identification of critical path elements.
- ❑ Identify the critical uncertainties in the project, with action plan to address.

## Stage 1 Key Deliverables & Decisions

- |                            |                         |
|----------------------------|-------------------------|
| – Mkt Attractiveness & Fit | – Technical Feasibility |
| – Customer VOC             | – Risk & Uncertainty    |
| – Value Prop Concept       | – Financial Model       |
| – CTQ Scorecard            | – Project Plan          |
- 
- ❑ Market Attractiveness & Target Value Prop Concept
  - ❑ Technical Feasibility & Technology Approach
  - ❑ Project Timing & Resourcing
  - ❑ Financial Projections
  - ❑ Critical Uncertainties And Clear Action Plan To Address