



# Winning at New Products

# Workshop Agenda

- 8:30 Refreshments/Networking
- 9:00 Introduction, Opening Remarks
- 9:30 New Products The Business Imperative, featuring Heritage Memorials (Steve)
- 10:15 Winning and Failing The Critical Success Factors, featuring Acadia (Donna)
- 10:45 Networking Break
- 11:15 Principles of the Stage-Gate<sup>®</sup> Model, featuring Springboard Atlantic (Chris) & Nova Agri (Nancy)
- 12:15 Lunch
- 1:00 Generating Ideas in the Discovery Stage
- 1:30 Walk-thru of Stage-Gate, the Early Stages, featuring Université Sainte-Anne (Gustavo)
- 2:15 Rapid Development Stage, featuring Singolar (Suman) & Acadia (Danny) & Kenney & Ross (Richard)
- 2:45 Networking Break
- 3:15 Commercialization, featuring NSCC (Matt & Beth), Université Sainte-Anne (Val), Acadia (Matt) & GubGub (Sarah)
- 4:00 Wrap-up, Q&A and Next Steps- Available Resources
- 4:30 End of Event, Thank You!



# Thank You to our Workshop Hosts and Sponsors









www.stage-gate.com

© 2017 Stage-Gate International









# innovacorp

EARLY STAGE VENTURE CAPITAL



**NRC·CNRC** 





launchbox



\*

Public Services and Procurement Canada Services publics et Approvisionnement Canada

© 2017 Stage-Gate International

Canada

## **Workshop Leader – Michelle Jones**

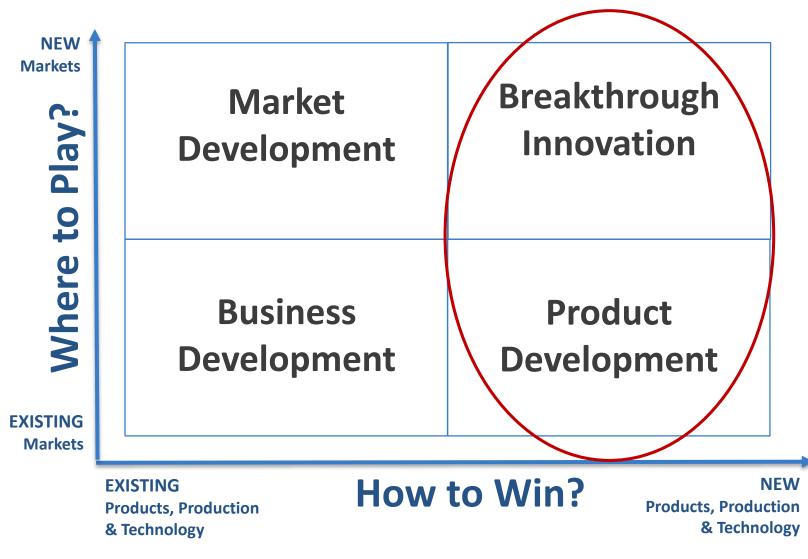


Michelle Jones Innovation Expert

- Michelle Jones is Executive Vice President and Chief R&D Officer of Stage-Gate International (SGI) and is a speaker, author and consultant on the topic of product innovation. She leads the commercialization of some of the world's best practice research on innovation into products, services and learning programs for companies striving to achieve innovation excellence.
- Michelle has worked with an impressive portfolio of companies and has 25 years of innovation experience across several industries including Aerospace, Automotive, Chemical, Consumer Packaged Goods, Defense, Electronics, Energy, Financial, Manufacturing, Medical, Pharmaceutical and her specialty, Agriculture and Food. She coaches and consults business executives and their teams to new product success by designing and implementing innovative strategies; optimized portfolios; governance models; global-scale innovation management structures; ideation models; open innovation programs and purpose-built Stage-Gate<sup>®</sup> Models to accelerate ideas to profit.
- Michelle holds a Masters of International Business Administration degree from the University of Western Ontario, Food and Nutrition from Guelph University, a Specialist Certificate in Project Management from McGill University and is a certified New Product Development Professional (NPDP). Prior to joining SGI, Michelle was a senior manager in KPMG's (now Bearing Point) Business Transformation Consulting Services where she specialized in leading the design and implementation of complex, organization-wide post-merger process integration and change projects.



## **The Quest for Top Line Growth – A Strategic Decision**





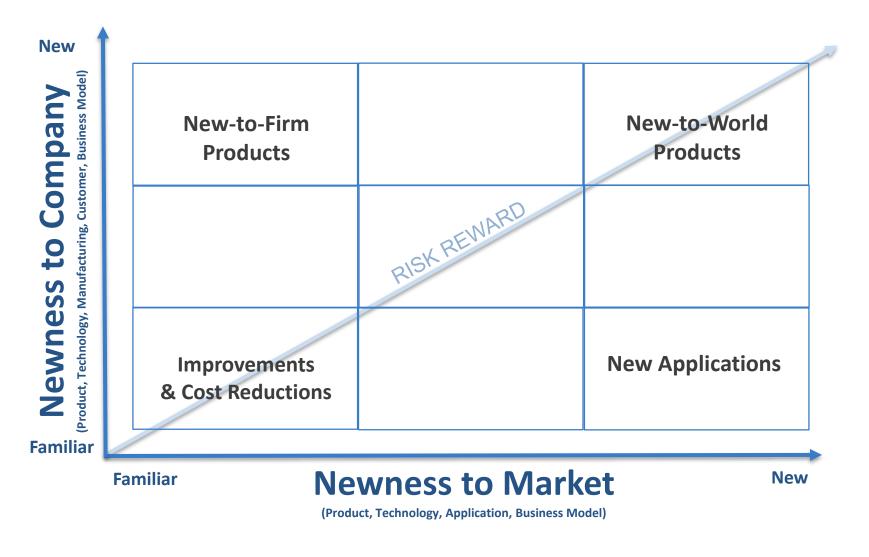


# A Strong Interest in Breakthrough Innovation and New Products

- Many definitions. Why? The term has currency in the business community
- Creativity = new ideas.
  - ability to think and act in ways that are new and novel
- Inventions = new technical developments.
  - technical accomplishment not yet introduced or achieved
- Innovation = value creation.
  - translating an idea or invention into a product or service that creates value or for which customers will pay.



# What is a <u>New Product? Many degrees of New!</u> <u>New presents opportunity for reward but also risk</u>





# **The Bottom Line - Quest For Profitability**

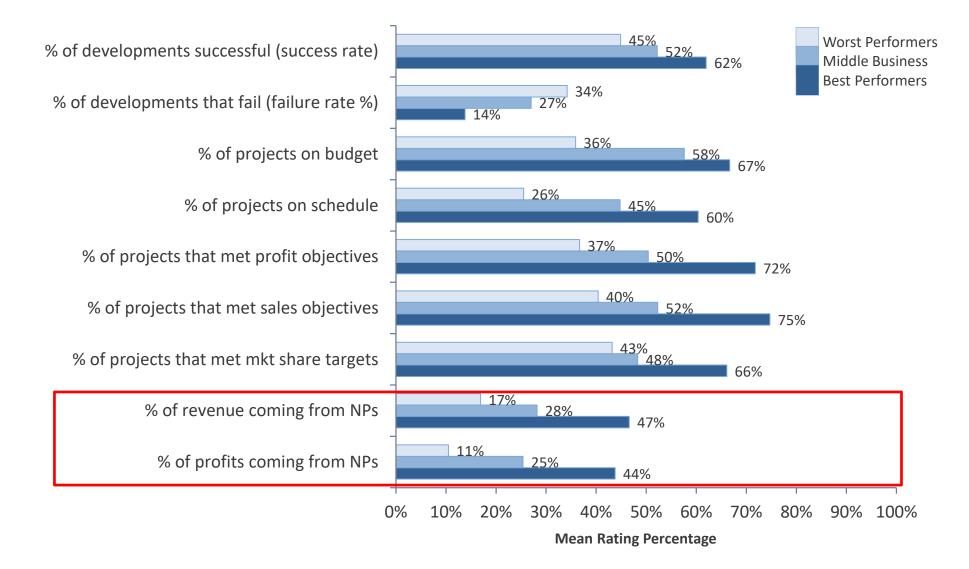
- Organizations are leaning out to improve profitability....
  - Cost-cutting improves profitability, but it does not achieve top line growth
  - You can only cut so much



Organizations want PROFITABLE GROWTH

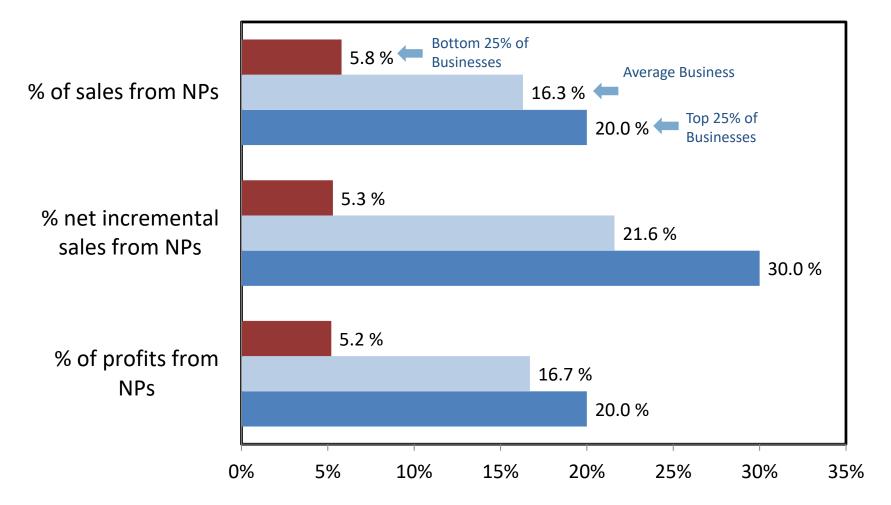


## **New Product Performance Benchmarks and Comparison**





# **US Food Industry Benchmarks**



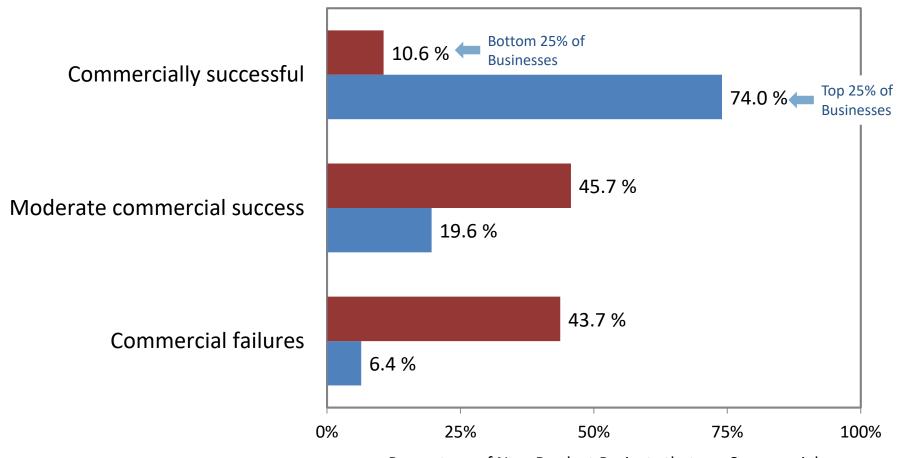
Percent of Business's Sales, Incremental Sales & Profits Coming from New Products Launched in Last 3 Years

www.stage-gate.com

11

© 2017 Stage-Gate International

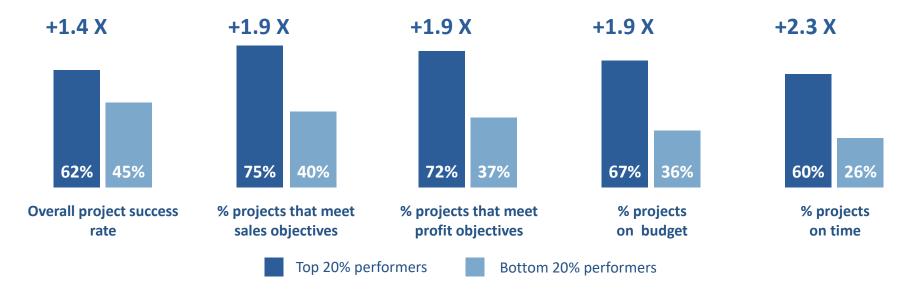
# **US Food Industry Benchmarks**



Percentage of New Product Projects that are Commercial Successes, Moderate Successes or Failures within the past 3 years

### **New Product Development Performance**

#### Best performers enjoy significantly higher NPD performance and project success rates...



... best performers use the Stage-Gate<sup>®</sup> model to win at new products





# Right Projects Right

*"There are two ways to win at new products. Pick the right projects and do projects the right way."* 

 Dr. Robert G. Cooper and Dr. Scott Edgett, globally recognized experts in innovation management and co-founders of Stage-Gate<sup>®</sup> International



# Right Projects Right



# **Pick the Right Projects**

**Benchmark Comparison: Typical Mix of NPD Projects** 

		Worst Performers	Average Business	Best Performers
	Promotional Developments, Price Changes & and Packaging Changes	17.1%	13.0%	10.8%
	Incremental Product Improvements and Changes	40.0%	34.5%	29.5%
	Major Product Revisions	21.4%	23.1%	20.5%
	New-to-Firm Products	14.0%	20.3%	26.7%
	New-to-World Products	4.1%	6.4%	11.5%
	% of Allocation to High Risk-Reward Classes	~40%	~50%	~60%
		Note: does not add up to 100% down the column due to a		



Source: SGI-APQC Research Study 2014 www.stage-gate.com

% Allocation of NPD Investment by Class

© 2017 Stage-Gate International

small percentage of "other" projects.



### **STEVE NELSON, HERITAGE MEMORIALS**



17

www.stage-gate.com

#### Mastering 'Truly New' Product Development is Tough to Do Top Reasons for New Product Failures

1	Insufficient market input, a failure to build in the voice-of-the- customer and a lack of understanding of the marketplace	
2	Poor front-end homework, a lack of due diligence	
3	Ill-conceived, inadequately resourced launches	
4	Lack of a true cross-functional team organization, silos	
5	Failure to stabilize a product definition early in the project – the product specs keep changing	
6	Failure to kill projects when they should be killed – 'pet project' or they get 'a life of their own'	
7	Inadequate resources on a project, poor project prioritization and resource allocation methods	
8	A lack of management commitment and leadership (guidance)	

18

Source: Winning at New Products, Cooper 2017 www.stage-gate.com

© 2017 Stage-Gate International

# The Critical Success Drivers Top Reasons Truly New Products Succeed



Based on numerous industry agnostic benchmarking studies conducted over a 25 year period throughout North America and Europe, with 3,000+ participating firms and 5,000+ new product launches (successes and failures)

Studies conducted by Dr. Scott J. Edgett and Dr. Robert G. Cooper of Stage-Gate International

These factors separate the winners from the losers Use them as guardrails to guide NPD





#### **Critical Success Driver #1**

A unique, superior product – a <u>differentiated</u> product that delivers <u>unique</u> <u>benefits</u> and a <u>compelling value proposition</u> to the customer



- Too many 'little' ideas dominate new product portfolios
- 'me-too' copy cats
- 'tweaks' barely noticeable by customers

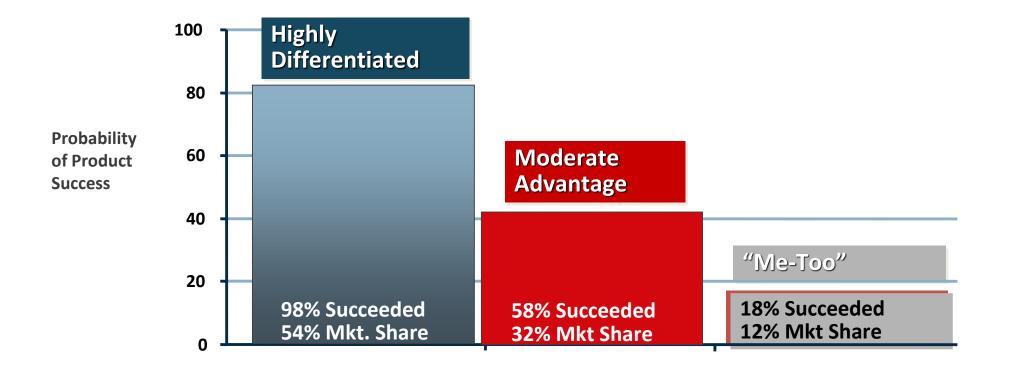
Technically driven ideas with no market inputs

The goal must be for real product advantage – find a big customer problem and develop a solution that is unequalled



Source: SGI Benchmarking Research

# Impact of differentiated products with unrivaled customer value on market success





21

Source: Winning at New Products, Cooper & Edgett



#### **Critical Success Driver #2**

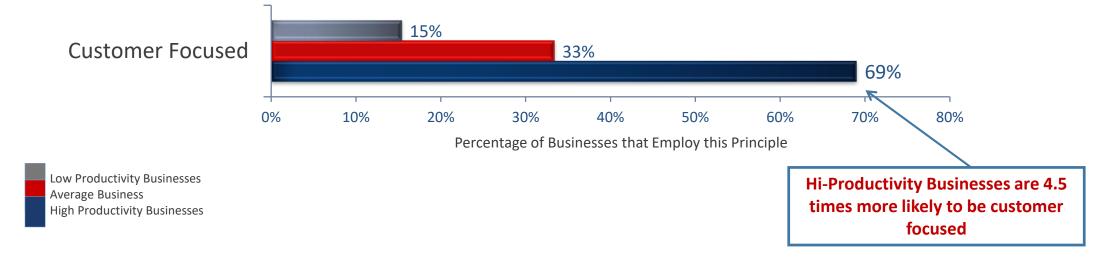
Emphasis on the **voice of the customer** – a market-driven and customer-oriented process – is critical to developing differentiated products

Know the Market	Make your head smart by understanding the market
Empathize with the Customer	Make your heart smart by understanding your customer(s), their goals and unarticulated needs
Emphasize Voice of the Customer	Make your process smart with VOC from idea to launch



Source: SGI Benchmarking Research

## Many businesses are not customer focused when developing products





Stage-Gate International

24

Source: SGI Benchmarking Research Source: Stanford Extreme Design Assignment, Embrace paraffin based warmer www.stage-gate.com

© 2017 Stage-Gate International



#### **Critical Success Driver #3**

Holistic **Up-front Assessment** before Development begins – due diligence pays!

Market	Who is the ideal target market? What is the need?
Technical	What are the product, development & production options? Freedom to operate?
Business	Can we make money? Order of magnitude?



# Does Up-front Assessment Mean Longer Times to Market?

More time and money spent up-front greatly improves the odds of success – there is clear evidence here

More homework & learning results in better and sharper product and project definition – speeds up Development (less recycling & wasted time)

Front-end homework anticipates product problems and design changes – these product design changes are made early when it is less costly (fail fast and early)

Allow for discovery & learning <u>before</u> development



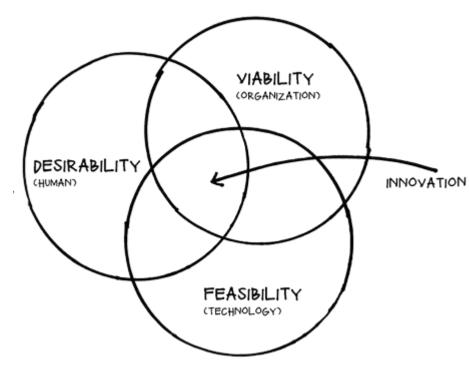
26

2



#### **Critical Success Driver #4**

Sharp, early **definition** (before Development) separates winners from losers



- ✓ Clarifying the customer problem or job to be done
- Revealing the true market opportunity (how many other customers have the same problem?)
- $\checkmark$  Narrowing in on the most desirable solution
- Discovering the real benefits and value of the solution
- Establishing positioning (price for perceived value)
- $\checkmark$  Zeroing in on the optimal mix:
  - Most desirable solution to create customer value
  - Most viable solution to create business value
  - Best technical solution to execute value creation

Having enough holistic clarity to focus your cross-functional development effort



27

Source: Adaptation of Design Thinking Method



#### **Critical Success Driver #5**

Rapid Feedback Iterations – Design, Feedback & Revise

- How you handle fluid information in your approach to development
- 'Heads Up' versus 'Heads Down'
- Several 'small' engagements between the market and the developer
  Design iterative mock ups to get something in front of a sampling of 'the market'
  Feedback rich reaction to your product definition via the mock up
  Revise adjust your product definition to accommodate fluid feedback
- How many iterations? Example: IDEO iterates on average 15x

General Rule of Thumb – Iterate until 'fluid' information becomes 'stable'





## Top Reasons Truly New Products Succeed Product Level

- Develop a unique, superior product
- ✓ Seek and use 'voice of the customer'
- ✓ Up-front assessment
- ✓ Sharp definition early
- ✓ Rapid feedback iterations
- The world product (global or glocal)
- ✓ Well-conceived launch
- ✓ First to market speed





# Top Reasons Truly New Products Succeed Company Level

- ✓ A Product Innovation Strategy: Why Innovate?
- ✓ Focus: Fewer, Better, and the Right Mix of Project Types
- ✓ Leverage Core Competencies
- ✓ Target Attractive Markets
- ✓ Right Resources
- ✓ High Performance Teams
- ✓ Culture Conducive to Innovation
- ✓ Leadership Engagement in Innovation
- ✓ + Stage-Gate<sup>®</sup>



## **DONNA SEARS, ACADIA SCHOOL OF BUSINESS**







Winning at New Products www.stage-gate.com

## **NETWORKING BREAK**



# Right Projects Right



# Six Principles of the Stage-Gate<sup>®</sup> Methodology

# Converting ideas from inception to value as quickly and profitably as possible



#### **The World's Most Popular Innovation Management Process**



# It's the Process, NOT the Money<sup>1</sup>

- Superior result is a function of the quality of an organization's new product innovation process
  - The bets it makes
  - How it pursues them
- Rather than the magnitude of its R&D spending<sup>1</sup>
- Example:
  - Apple's R&D-to-Sales spend ratio of 5% trails its competitors and the computer industry on average (approx. 15%)

Install an effective idea-to-launch Innovation Process Stage-Gate<sup>®</sup> to ensure productive R&D spending





1 Source: Global Innovation Study, Booz-Allen & Hamilton, New York

# How Stage-Gate® Was Born

- Canadian business professors, Dr. Robert G. Cooper (McGill University) and Dr. Scott Edgett (McMaster University) performed 'breakthrough voice of customer' studies on samplings of NA companies
- Longitudinal study of NPD winners and losers
  - How they drove their new products to market, play-by-play
- Patterns emerged
  - Designed the patterns into a 'playbook' for winning at new products called it Stage-Gate<sup>®</sup>
- The 'playbook' evolved since its debut in 1984
  - New success drivers uncovered (via expanded research & lead user application\*)
  - Now 14 in total (project level and company level), all built-in by design
- Although the base principles of the Stage-Gate<sup>®</sup> model have not changed, 5<sup>th</sup> Generation Stage-Gate applications are quite different from 1<sup>st</sup> Generation (new technologies/techniques)

\*Lead Stage-Gate Users are among the world's best innovators and afford us the opportunity to study real-time evolutions of new innovation practices.



#### **Stage-Gate**<sup>®</sup> – **Driving Performance for 30+ Years**





#### - Start with the END in mind to see the big picture

- View the complete journey from idea inception to post launch, not just development
- Bring visibility to this often chaotic journey as a process
- Any process can be designed to be more effective (i.e. roadmap) and can be learned



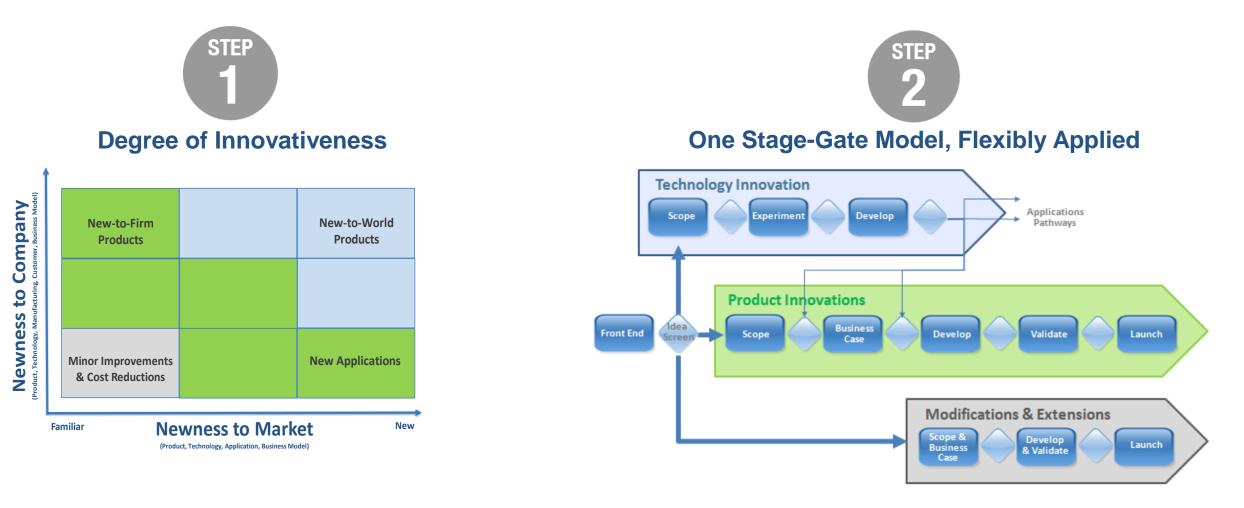
#### Principle 2: Embrace Risk by Managing It



- New product innovation is inherently risky, therefore risk must be identified and managed from idea inception through to post launch
  - Organize the entire process into smaller, more manageable stages
  - Each stage represents an increasing commitment (dollars and/or resources)
  - Each stage is purpose-built and goal-driven (not time driven)
  - Process rigor is 'right-sized' to the risk and context of each project
    - Stages to proceed through, work to perform in the stage & performed by what level



Right Size Process Rigor to Project Risk and Context One Stage-Gate Model Flexibly Applied



#### While innovation projects share similarities, we cannot lose sight of their uniqueness



#### Principle 3: Accelerate the Creative Process (Stages)





2 Source: Winning at New Products Benchmarking Research, SGI

#### Principle 3: Accelerate the Creative Process (Stages)



- Aim to move from partial to full definition through learning iterations
- Common language to facilitate cross-functional, high performance team
- Strategically place **proven** practices in the right stages to guide the **winning** solution
- The 1<sup>st</sup> two stages determine your success/failure<sup>2</sup> (do not omit or skip over)



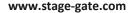
2 Source: Winning at New Products Benchmarking Research, SGI

#### New product ideas/concepts present partially defined, initially

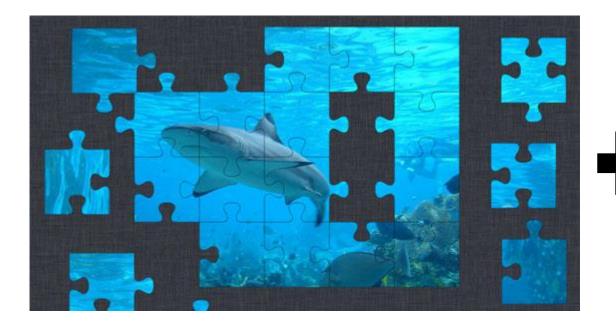


Each stage of effort and learning adds more definition until you have moved from a partial to a full definition (i.e. buying more pixels until you have clarity)





#### **An Additional Significant Challenge**



#### We are trying to 'reveal' the true opportunity



#### We are trying to 'develop' the winning solution



#### Principle 4: Options Based Decisions



- Conditions (internal & external) can deteriorate during a project's life, therefore, some ideas/projects will not remain worthy of your investment
  - Allowing for one GO decision at the beginning of a project is fundamentally flawed
  - We want the **right** to continue but **not the obligation** (options-based decision process)
- Gates (business investment decisions) precede each stage
  - Evaluate the **business merit**, especially the potential to make money
  - Kill weak projects, re-direct scarce assets/resources to more meritorious projects
  - Afford the organization agility and responsiveness



#### **Options Based Investment Decisions**

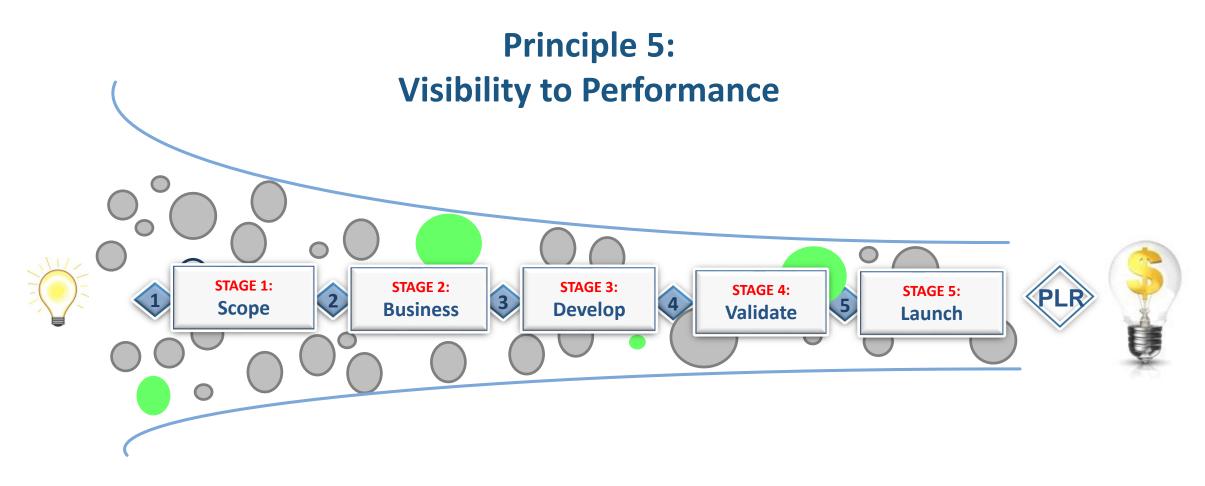
#### **Horse Race**



VS.

- All participants will finish the race, regardless of how far they fall behind
- The full bet amount is placed <u>before</u> the race begins – you cannot change the bet once the race starts





- Bring visibility to your progress 'a picture is worth a thousand words'
- Bring visibility to your portfolio, funnel (NOT tunnel), as Gates surface meritorious projects
- Bring visibility to priorities and to the longer term view (beyond annual list of projects)
- Choose few but meaningful metrics to monitor, especially the **Post Launch Review**



#### Principle 6: Culture of Accountability and Discipline



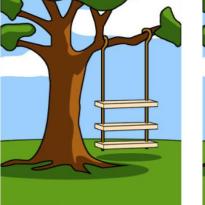
- Stage-Gate serves as an organization's memory of what works/what doesn't a great roadmap that should evolve with the organization's learning curve & capability
  - Those that are accountable acknowledge their performance (wins and losses via the PLR)
  - The organization has the discipline to learn and adjust (customize and evolve)
- Common language and framework to effectively coordinate, collaborate and manage expectations of the many stakeholders involved, within the company and with trade partners and suppliers
- Empower people to use Stage-Gate to **win at new products in the marketplace** 
  - Cross-functional high performance teams work in the stages and interface, at critical points, with...
  - Cross-functional business leaders governing the gates (a.k.a. the investment GO/KILL decisions)







What the Client wanted



How the Client explained it



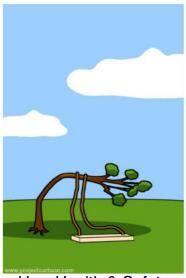
How the project manager understood it



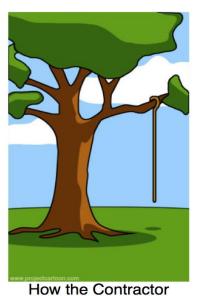
How the Architect visualised it



How the Engineer designed it

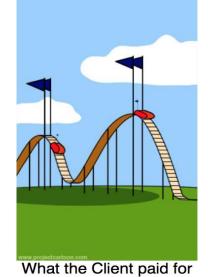


How Health & Safety wanted it



built it

www.projectcartoon.com When it was delivered



What the Client

recieved



What the client really needed



### Benefits of the Stage-Gate<sup>®</sup> Model

- A roadmap for all leaders and teams to guide expectations and performance
- A visible process known and understood by all
- Makes for a complete process no critical errors of omission; no missing steps
- Puts disciplined learning into a somewhat ad-hoc, chaotic process
- Forces more attention to quality of execution
- Cross-functional inputs from all key roles and functions & facilitates team performance
- A faster process new product rugby
- A flexible process
  - Right-sized process rigor to match risk and context
- Results
  - Better in-market performance (sales and profits)
  - Better return on investment
  - Continuous improvement facilitates innovation capability maturity



## Avoid 5 common pitfalls when you use Stage-Gate®

#### 1. Bureaucratize the process

- Building in non-value-added procedures vs focusing on the activities for 'winning in the market'
- Deliverables overkill 'read what we have' vs synthesizing key information needed for a decision
- Failure to build in the necessary flexibility for a diverse portfolio (e.g. for smaller, low risk projects)

#### 2. Gatekeepers fail to fulfill their role

- Advancing pet projects and circumventing the process
- Missing Gate meetings and/or poor contribution while at the meeting

#### 3. Unrealistic expectations with resources

- Too few resources to properly execute projects per Stage-Gate<sup>®</sup> best practices
- Resources not clearly committed to projects (e.g. team members not given release time)
- Resources incapable of stretching to meet new performance expectations

#### 4. Underestimate implementation challenges

- Expecting immediate impact It takes time to change behaviors of numerous people (1-2 years)
- Skipping over preparing the senior leaders because they should probably 'get' this
- Skipping over informing/training externals customers and suppliers because it doesn't impact them



#### **Most Common Pitfall**

- 5. Failure to tailor the Stage-Gate® Model to Your Organization
  - Work from the generic model in the Winning at New Products book
  - Use the model that was used at your former employer
  - Fail to advance the design as your organization's capability matures and improves

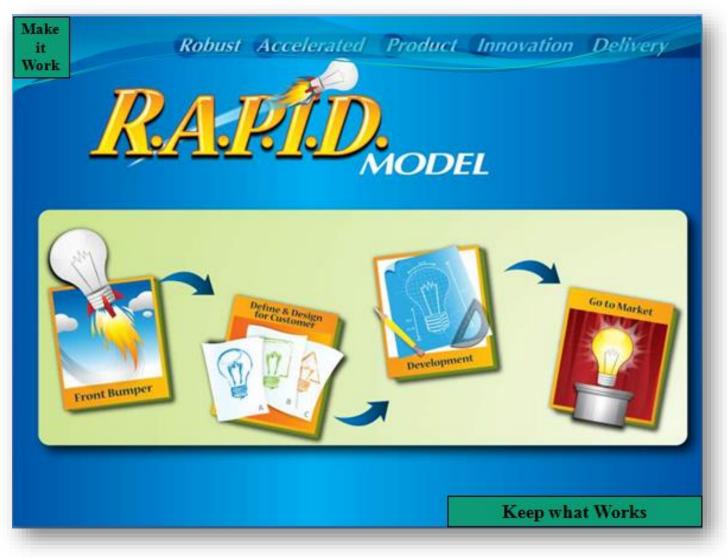


- Purpose (customer-driven/bids, market-driven, co-development, etc.)
- Name of process
- ✓ Visual illustration of process
- ✓ Language (i.e. charter or business case or business brief)
- $\checkmark$  Spirit of stages and gates
- ✓ Best practice activities within stages (i.e. design thinking)
- ✓ Gates: structure, criteria and meetings
- ✓ Deliverables
- Project management methods to execute stages (i.e. scrum)
- ✓ Role of software tools to enable Stage-Gate
- ✓ Metrics



#### **Application of Stage-Gate**<sup>®</sup>

#### for Market-driven Innovation in a Flexible, Entrepreneurial Culture



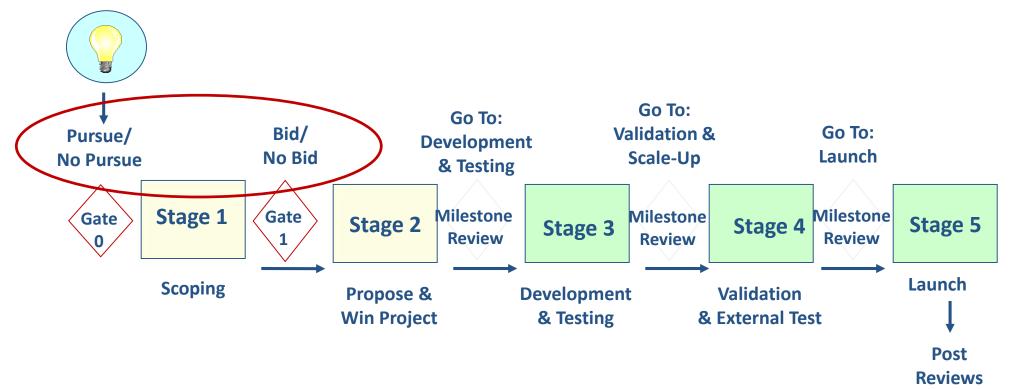


54

Source: McNeil Nutritionals Presentation, Stage-Gate Innovation Summit

#### **Application of Stage-Gate**<sup>®</sup>

for Customer-driven Bid/No Bid NPD Initiatives to Improve Win Ratio



✓ Incoming RFPs and Customer Requests <u>requiring</u> technical design effort

- ✓ Incoming RFPs and Customer Requests that would <u>benefit</u> from technical design
- ✓ Proactive discovery work resulting in concepts to propose to strategic clients



#### **CHRIS MATHIS, SPRINGBOARD ATLANTIC**



#### NANCY TREGUNNO, NOVA AGRI





THE Nova Agri GROUP



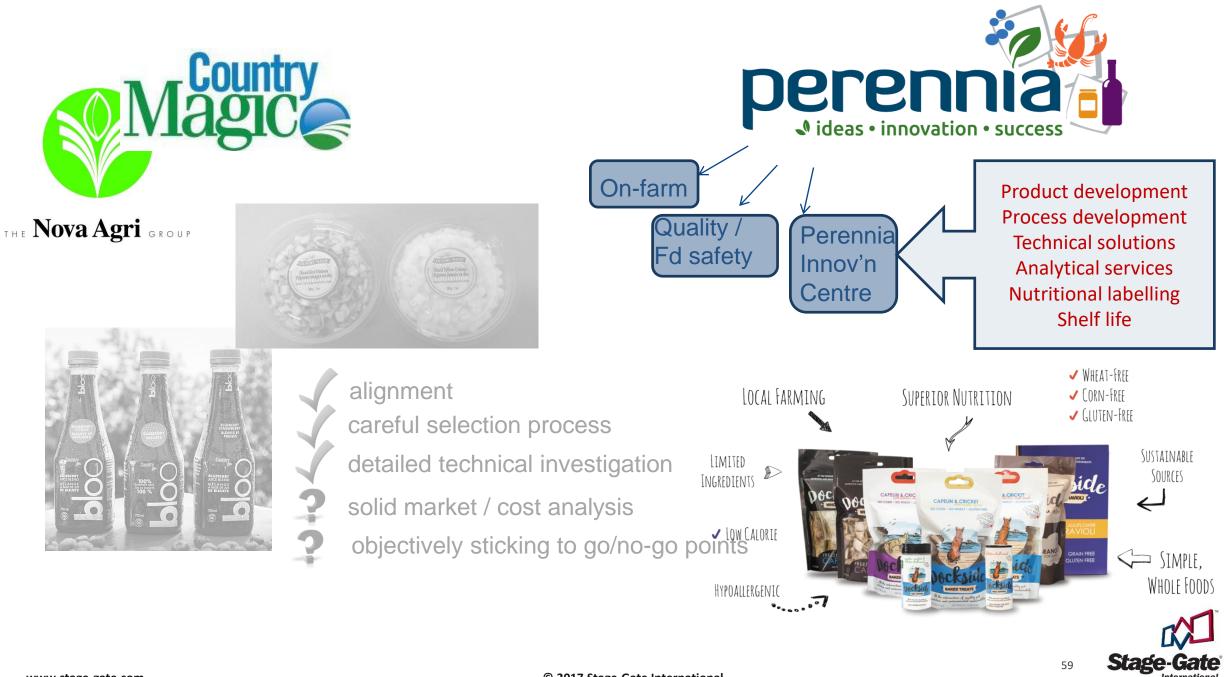


alignment careful selection process detailed technical investigation

solid market / cost analysis

objectively sticking to go/no-go points





#### LUNCH 12:15-1:00



# Generating Ideas The Discovery Stage





#### Ideas

Present Opportunity:

- ✓ Introduce new ways to create value
- ✓ Generate options and choices
- ✓ Help add definition to new strategies

Create Anxiety:

- ✓ Force us to react, to shape the idea
- ✓ Results in a decision, saying NO
- ✓ Results in a change, reallocating other resources
- ✓ Indecision, frustration, misalignment



#### We Believe it's Better to Nurture Idea Generation and Learn to Say NO to the Bad Ideas

#### **QUALITY**

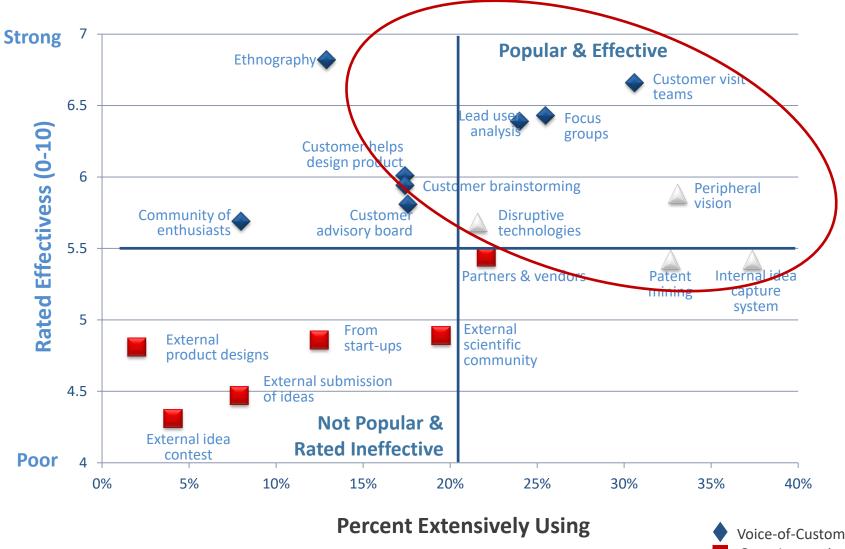
- ✓ Communicate Strategy
  - Investment
  - Performance goal
- ✓ Clarity of ideas you desire:
  - Problems to solve
  - Markets to satisfy
  - Products to create
  - Technologies to leverage
  - Processes to improve

#### QUANTITY

- ✓ Internal Idea Generation
  - Be Proactive
  - Give Permission
- ✓ External Idea Generation:
  - Identify Network
  - Communicate Strategy
  - Proactive Networking
- ✓ Investment scope & goal



#### Use Methods that Generate Quantity and Quality Ideas



Source: Cooper & Edgett, Generating Breakthrough New Product Ideas, and Voice-of-Customer Methods: What is the Best Source of New Product Ideas?

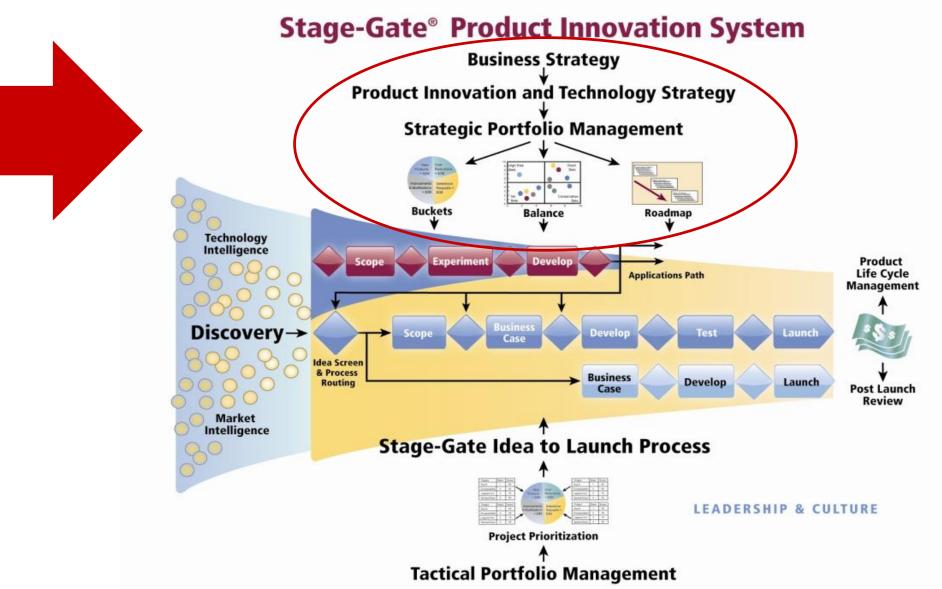
#### www.stage-gate.com

#### © 2017 Stage-Gate International

Voice-of-Customer Open Innovation Other Methods

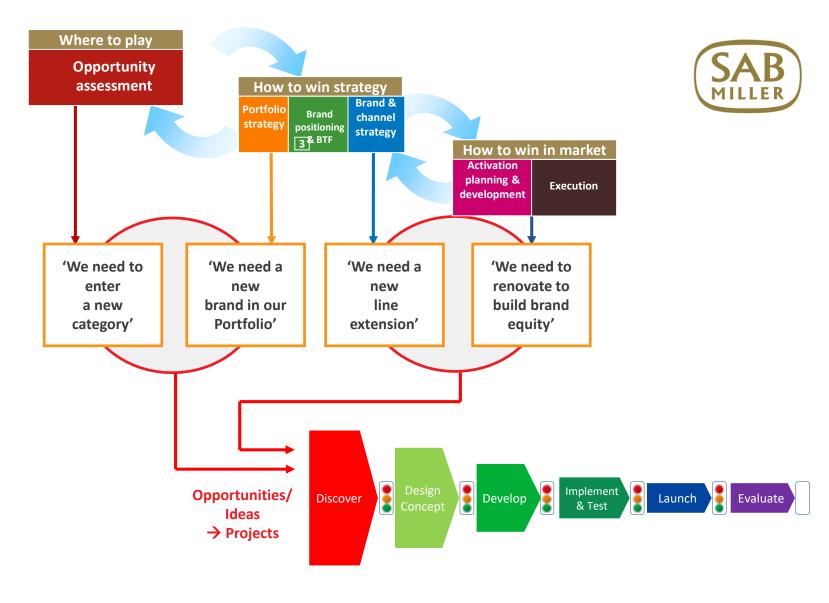


#### **Top Down Strategic Idea Generation**



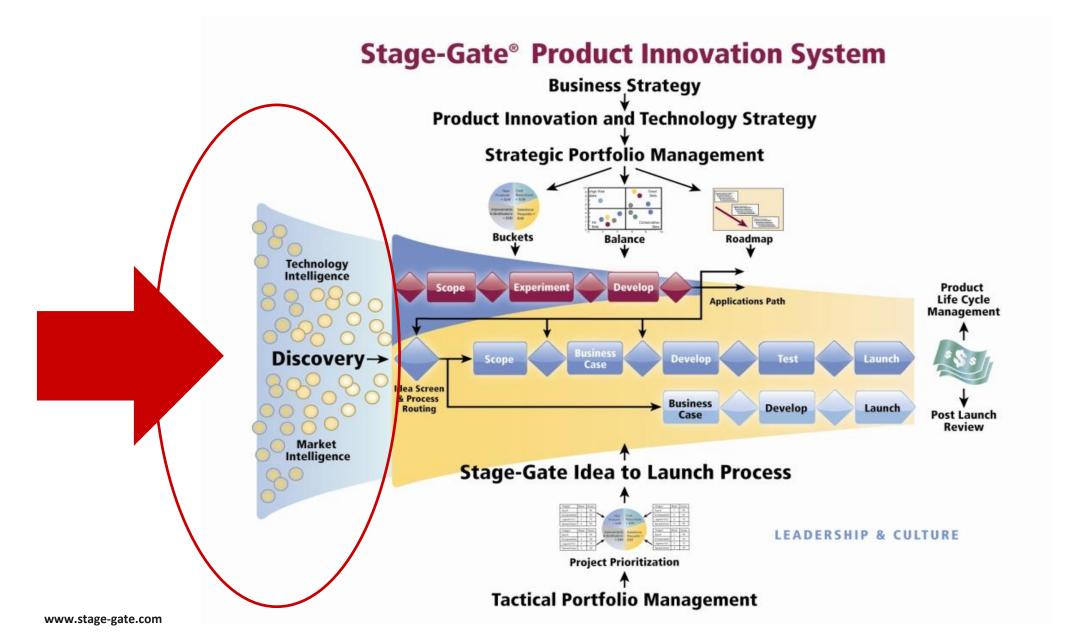


#### Idea Generation Techniques Applied to Strategic Planning



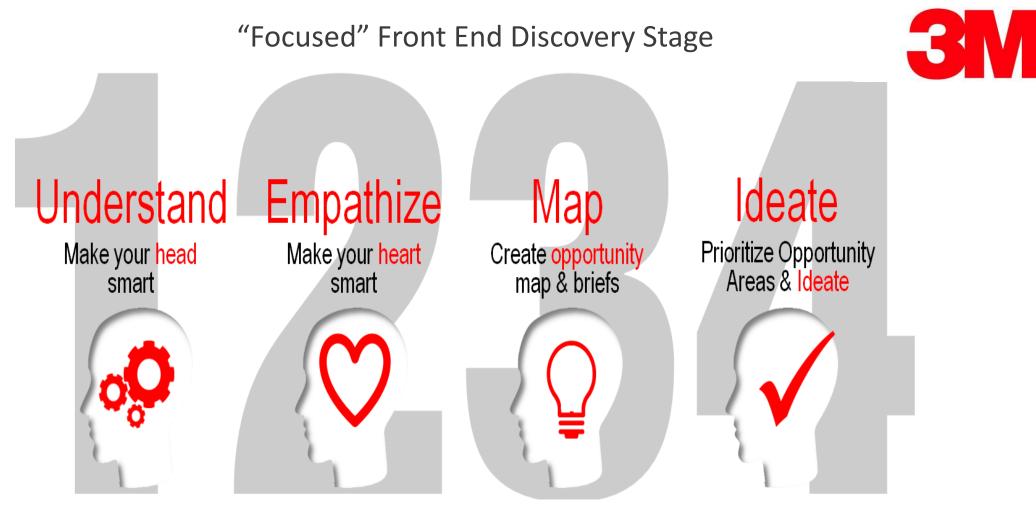


#### **Bottom Up Discovery Stage Idea Generation**





#### Idea Generation Techniques Applied to the Discovery Stage





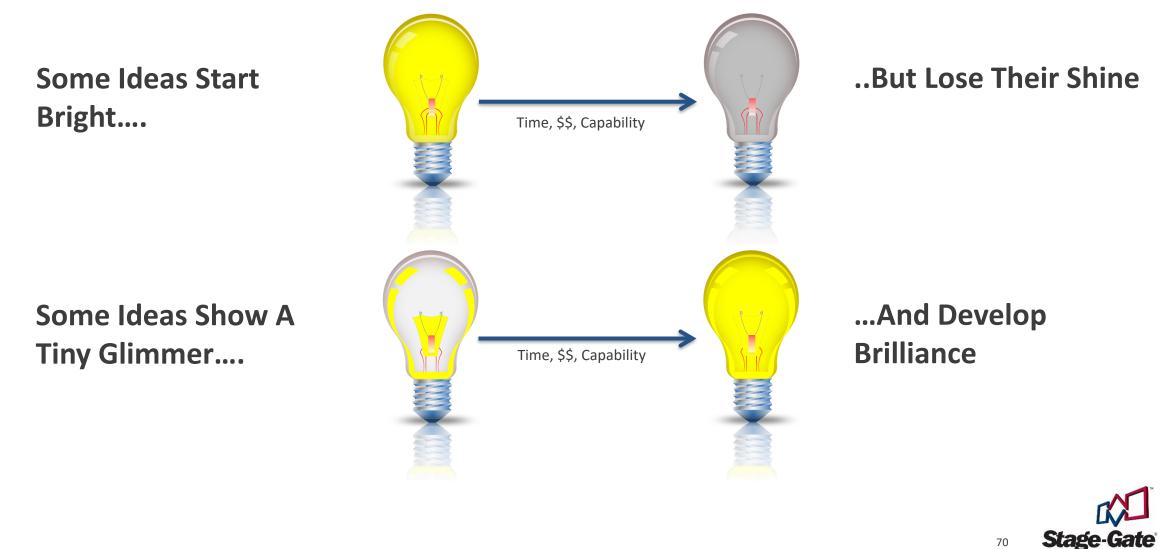
#### Where do you get your best ideas?

How many good ideas are 'on hold' because you lack the resources to pursue them?

# Do you know how to leverage your community network?



#### Are All Ideas Worthy of Your Investment? NO



## The Stage-Gate<sup>®</sup> Model for New Products





#### An Overview of the Stages - Accelerate the Creative Process



Stage-Gate

72

business viability

#### **Stage: Cross-functional execution of best practice activities**

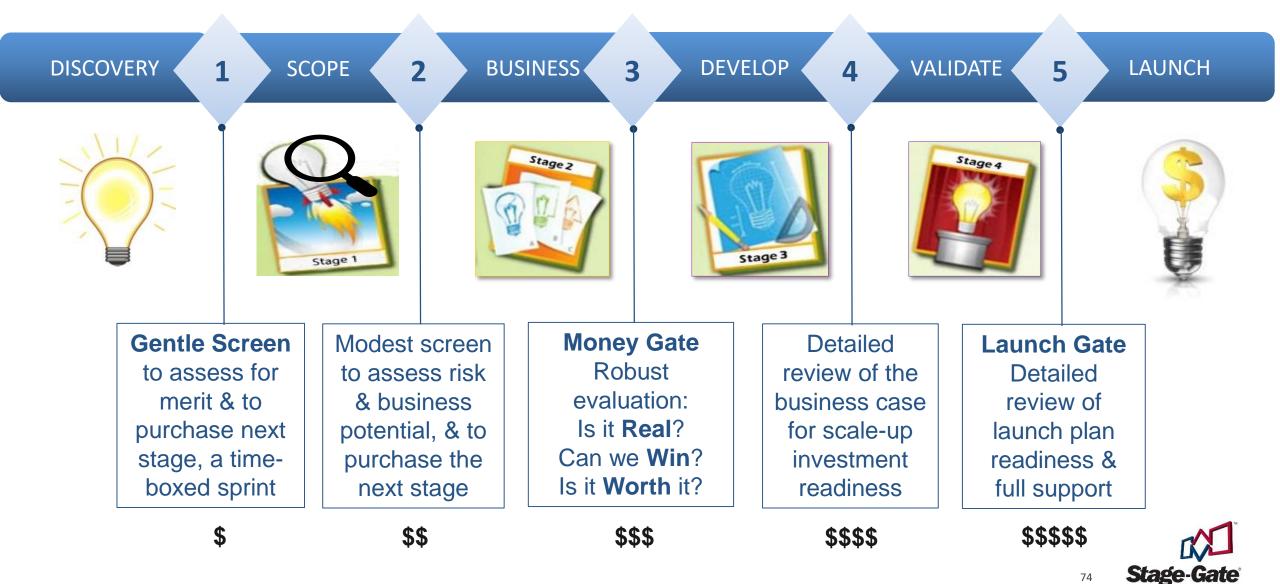


Relevant tasks that will accelerate team learning, focus problem solving and advance winning product development Cross-functional synthesis of key learnings enabling: creating choices & making choices Relevant information synthesized into a succinct business summary enabling an investment decision

Stages have a common format: prescribed set of activities to accelerate crossfunctional learning to advance the development of a winning product



# An Overview of the Gates - Accelerate Time to Profit



# **Gate: Business investment decision point**

Deliverable

Criteria

Output

Relevant information synthesized into a compelling business summary Proven discriminators of success to guide objective evaluation Prompt decision: **Go, Kill, Hold, Recycle**. Commit the resources and support for the next stage

Gates have a common format: cross functional business leaders evaluate the business opportunity and make a prompt Go/Kill decision to accelerate time to profit



# Gate Deliverable – Brief Document Summarizing Information Relevant to the Decision

## 1. Product Definition

- Customer/market desirability, business viability and technical feasibility (example: Basic Eight Framework)
- Gate appropriate prototype: concept, protocept, prototype (alpha), prototype (beta), production model

### 2. Business Summary

- Strategic Fit
- Product and Competitive Advantage
- Market Attractiveness
- Core Competencies Leveraged (sales, markets, brand, product, technology, manufacturing, distribution)
- Technical Feasibility
- Financial Reward for Risk (key assumptions and order of magnitude only in early stages)

## 3. Plan for Next Stage

- High-level approach to execute the activities in the next stage (partners? resources? key customers?, etc.)
- Estimate timeline, resources and money necessary to execute



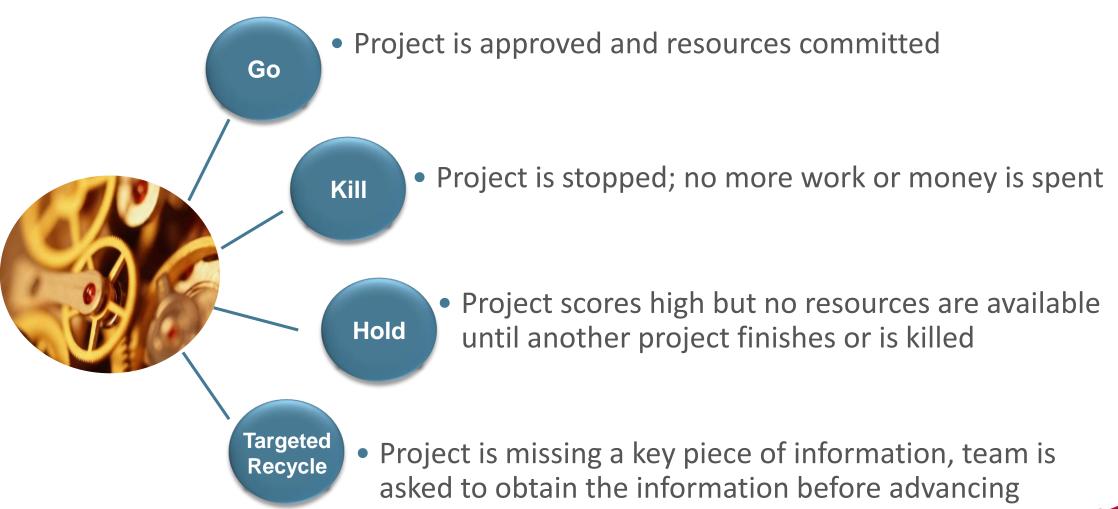
# Gate Scorecard with 6 Criteria

Strategic Fit and • Impact on b	<ul> <li>Fit with business and innovation strategy</li> <li>Impact on business</li> <li>Importance to the business</li> </ul>		4	7	10
	efits to customer/consumer oney from customer perspective advantage	0	4	7	10
Market Attractiveness • Market size • Gross marg • Competitive	gins	0	4	7	10
Synergies or Core Competencies • Customer b • Technologie	and sales force ase al, Production know-how and experience oduction capabilities, expertise & facilities	0	4	7	10
Technical Feasibility • Technical g • Program co	ap to reach the solution omplexity			7	10
Financial Reward vs. Financial Risk	inancial return ancial risk <b>Tota</b>	I Score (0	to 60)	):	

Star

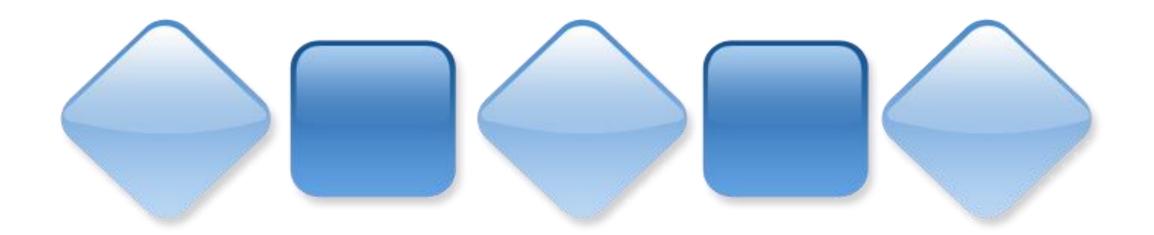
International

# **Gate Decisions: Facilitate Time to Profit**





# Stage-Gate® A Walk-through





www.stage-gate.com



# **DISCOVERY STAGE - Ideation**

**Purpose:** Initiate the process with the capture of an idea.

**Players:** Unstructured - anyone in the company with a new product idea. Structured – people (internal & external) invited to ideate.

### **Activities:**

- Complete Idea Resume (1-pager) without investing resources. - describe the concept
- describe how the concept was created
- describe the potential value (as you see it)

### **Deliverables:**

Idea Resume

### More ....

- out-of-the-box
- networking/connecting
- concept-building

#### Less ....

- detailed design
- developing
- spreadsheets





### **Description of the Idea/Concept:**

Functional pyjamas for high performance athletes: add bio-ceramic properties to sleepwear fabric fibres so athletes can accelerate muscle tissue regeneration while they are sleeping.

### How the Idea Came to You:

The idea occurred to me during a conversation with one of our sponsored athletes. The athlete was wearing one of compression sleeves on his calf during practice – with a homemade medical grade bio-ceramic material sewn into the sleeve. He explained, the deep heat (FIR – Far infrared Radiation) helped to accelerate injury recovery by increasing circulation. I spoke to the hack (sports trainer in kinesiology) and learned that the technology was legit. Turns out bio-ceramics naturally emit FIR (far infrared radiation) which can penetrate deep tissue to improve circulation, reduce inflammation and accelerate healing. It's most effective when applied while resting after practice however athletes rarely want to stay long enough after practice). So, my idea is to design a pyjama that can perform in the same way.

## Value Creation Potential:

Value to our customers: save time (regenerate while sleeping) and improve athletic performance. Value to the company:

- new-to-company product sales (would 20% of our customers buy a pair of these pyjamas)

- new-to-company profits (could we double our margins given the novelty of the innovation)



© 2017 Stage-Gate International

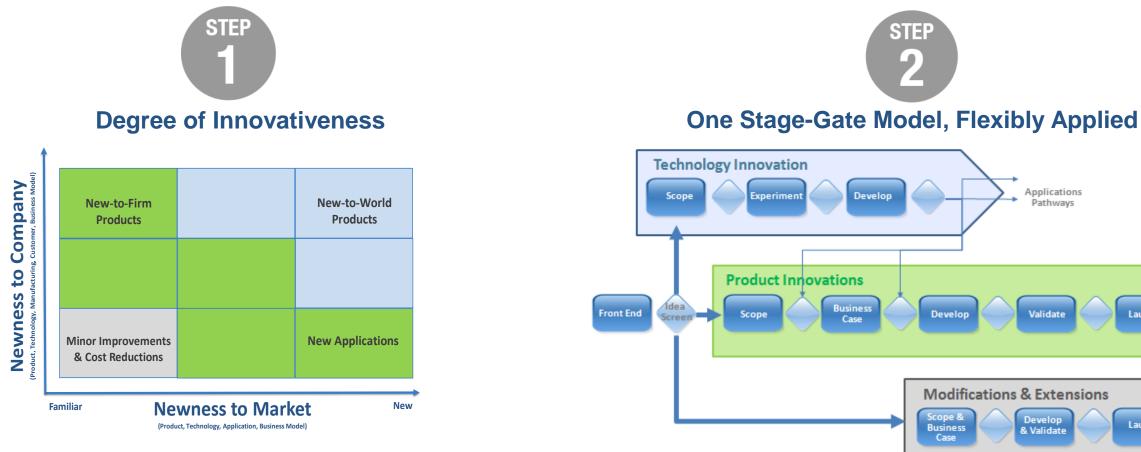


# **GATE 1 – Gentle Screen**

Purpose:	Assess business merit & decide whether to purchase the next stage.	
Players:	Cross-functional Gatekeepers who are the resource (people & \$) owners.	
Gate Challenge:	Assessing the degree of innovativeness (newness) of the new product idea Prematurely killing a high potential idea for lack of information/data	
Enabler:	Scorecard with proven criteria	
Decisions:	Go/Kill/Hold/Recycle Sprint effort (i.e. # of days of effort) and people assignments Guidance regarding degree of innovativeness and where to place emphasis	



# **Assessing the Degree of Innovativeness (Potential)**



# Gatekeepers guide teams to be more (or less) innovative



83

Launch

Launch

© 2017 Stage-Gate International

# Gate 1 - Scorecard with 6 Criteria

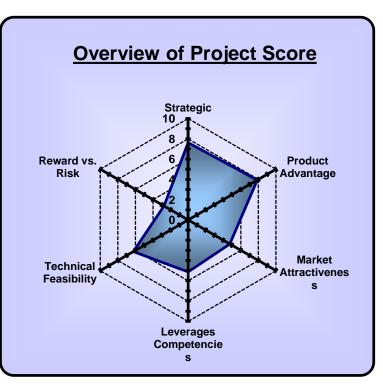
Strategic Fit and Importance	<ul> <li>Fit with business and innovation strategy</li> <li>Impact on business</li> <li>Importance to the business</li> </ul>	0	4	7	10
Product and Competitive Advantage	<ul> <li>Unique benefits to customer/consumer</li> <li>Value for money from customer perspective</li> <li>Competitive advantage</li> </ul>	0	4	7	10
Market Attractiveness	<ul> <li>Market size and growth</li> <li>Gross margins</li> <li>Competitive intensity</li> </ul>	0	4	7	10
Synergies or Core Competencies	<ul> <li>Distribution and sales force</li> <li>Customer base</li> <li>Technological, Production know-how and experience</li> <li>Supplier production capabilities, expertise &amp; facilities</li> </ul>		4	7	10 
Technical Feasibility	<ul><li>Technical gap to reach the solution</li><li>Program complexity</li></ul>	<b>–</b> 0	4	7	10
Financial Reward vs. Financial Risk	<ul> <li>Degree of financial return</li> <li>Level of financial risk</li> </ul> Total Sc	ore (0	to 60	):	

www.stage-gate.com

Sta

#### **Project:**

Project Attra	activeness Sc	<b>34.4 57%</b> ctiveness Score (out of 60) =			Decision			
Evaluator	Strategic	Product Advantage	Market Attractiveness	Leverages Competencies	Technical Feasibility	Reward vs. Risk	Score out of 60	
			Attractiveness	competencies				
Tom	0	10	4	7	7	10	38.0	
Janice	10	7	4	4	7	4	36.0	
Ed	10	10	7	4	4	4	39.0	
Mark	10	7	7	4	7	0	35.0	
Mary	7	7	4	4	7	0	29.0	
Frank	7	5	4	4	4	0	24.0	
Susan	10	10	4	7	7	4	42.0	
Sherry	7	7	4	7	7	0	32.0	
Total:	61	63	38	41	50	22	275.0	
Mean:	7.6	7.9	4.8	5.1	6.3	2.8	34.4	
Team:	10.0	7.0	4.0	4.0	7.0	4.0	36.0	
Std Dev:	3.42	1.89	1.39	1.55	1.39	3.54		



Gates produce a summary of cross-functional, independent scores doubling as feedback to the team (project strengths & weaknesses)



# New Ideas are Fuzzy...



GO Decision = buy the next stage of work, Stage 1

Think of it as 'buying' as few pixels as you need to help you see the opportunity with more clarity







# **STAGE 1 - Scope**

**Purpose:** Quick & inexpensive assessment to size-up the opportunity.

Activities: Conducted within a time-boxed sprint (a few days) Preliminary market assessment & lead-user check-in Preliminary technical assessment & freedom to operate Preliminary business model assessment Financial opportunity (order of magnitude) Product definition (Basic 8 Framework<sup>™</sup>)

Deliverables: Product Definition with Protocept(s) Business Summary Recommendation (Go/Kill) Outline of Next Stage (effort to complete it & \$)

### More of....

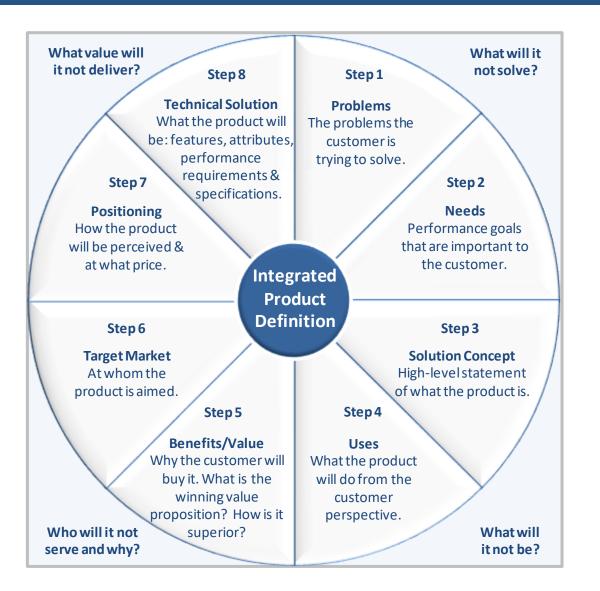
- exploring
- fact-finding
- concept-building

### Less of....

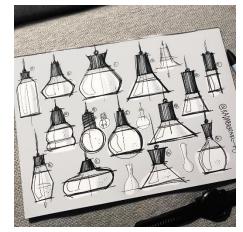
- detailed design
- developing
- spreadsheets



# **Stage 1 Deliverable Example – Product Definition with Protocept**



The Basic 8 Framework™ Helps You Add Definition to NEW Ideas The Benefit – A Sharp, Early Product Definition



Sample Protocept





# **GATE 2 – Modest Screen**

Purpose:	Assess risk & business potential & decide whether to purchase the next stage.
Players:	Cross-functional Gatekeepers who are the resource (people & \$) owners.
Gate Challenge:	Assessing the degree of innovativeness (newness) of the new product idea. Holding business to a high standard in search for the winning definition.
Enabler:	Scorecard with proven criteria.
Decisions:	Go/Kill/Hold/Recycle Approve Plan for Next Stage (i.e. # of days of effort) and people assignments Guidance regarding degree of innovativeness and where to place emphasis



# Gate 2 - Scorecard with 6 Criteria

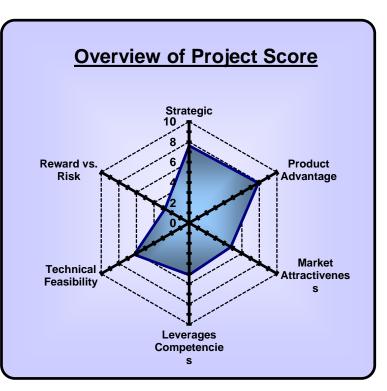
Strategic Fit and Importance	<ul> <li>Fit with business and innovation strategy</li> <li>Impact on business</li> <li>Importance to the business</li> </ul>		0	4	7	10
Product and Competitive Advantage	<ul> <li>Unique benefits to customer/consumer</li> <li>Value for money from customer perspective</li> <li>Competitive advantage</li> </ul>		0	4	7	10
Market Attractiveness	<ul> <li>Market size and growth</li> <li>Gross margins</li> <li>Competitive intensity</li> </ul>		0	4	7	10
Synergies or Core Competencies	<ul> <li>Distribution and sales force</li> <li>Customer base</li> <li>Technological, Production know-how and experience</li> <li>Supplier production capabilities, expertise &amp; facilities</li> </ul>		0	4	7	10
Technical Feasibility	<ul><li>Technical gap to reach the solution</li><li>Program complexity</li></ul>		0	4	7	10
Financial Reward vs. Financial Risk	<ul> <li>Degree of financial return</li> <li>Level of financial risk</li> </ul>	Total Sco	ore (0	to 60	):	

SIA

International

#### **Project:**

Project Attra	Project Attractiveness Score (out of 60) =			34.4 57% ttractiveness Score (out of 60) =				Decision			
Evaluator	Strategic	Product Advantage	Market Attractiveness	Leverages Competencies	Technical Feasibility	Reward vs. Risk	Score out of 60				
Tom	0	10	4	7	7	10	38.0				
Janice	10	7	4	4	7	4	36.0				
Ed	10	10	7	4	4	4	39.0				
Mark	10	7	7	4	7	0	35.0				
Mary	7	7	4	4	7	0	29.0				
Frank	7	5	4	4	4	0	24.0				
Susan	10	10	4	7	7	4	42.0				
Sherry	7	7	4	7	7	0	32.0				
Total:	61	63	38	41	50	22	275.0				
Mean:	7.6	7.9	4.8	5.1	6.3	2.8	34.4				
Team:	10.0	7.0	4.0	4.0	7.0	4.0	36.0				
Std Dev:	3.42	1.89	1.39	1.55	1.39	3.54					



Gates produce a summary of cross-functional, independent scores which double as feedback to the team (project strengths & weaknesses)





# **STAGE 2 – Business Viability**

Purpose: Feasibility of options & recommended product definition: customer desirability & business viability.

Activities: Execute the Stage 2 Plan approved at the previous Gate Detailed market assessment & VOC Detailed technical assessment & IP plan Detailed business model assessment Financial opportunity (return on investment) Product definition (Basic 8 Framework<sup>™</sup>)

Deliverables: Product Definition with Winning Protocept Business Summary Recommendation (Go/Kill) Outline of Next Stage (effort to complete it & \$)

Gate	More
	<ul><li>business acumen</li><li>creative design</li><li>options</li></ul>
	Less
	<ul><li>developing</li><li>planning</li><li>selling</li></ul>

# Stage 2 Deliverable Example – The Business Case (text OK, but visual is preferred)

### **Business Summary**

- Strategic Fit
  - How exactly will this advance the company's vision, mission and strategy?

### Product and Competitive Advantage

- What is the differentiator? Is it easily copied? Can we charge a premium? How to price? How to sell?
- Confirmation of customer and market acceptance?

### Market Attractiveness

How big is the target market? Growing or shrinking? How competitive? How will competitors react?

### Core Competencies Leverage

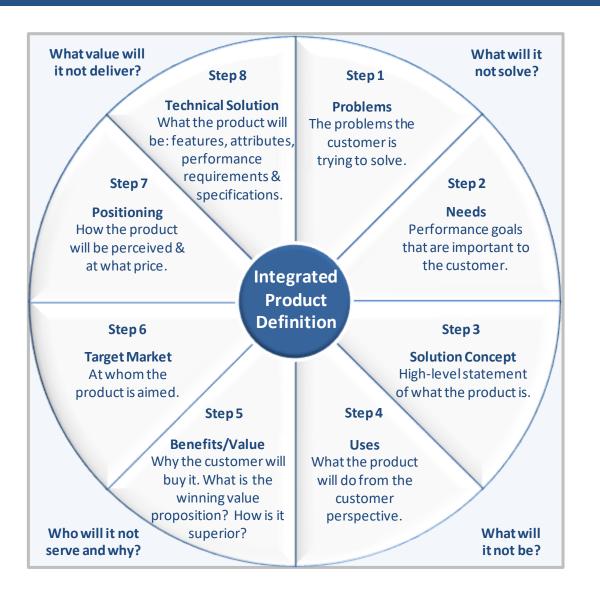
- Can we leverage what we do better than anyone else?
- Selling (transactional or consultative), marketing (can we reach this target?), brand, product, technology, manufacturing, supply, distribution?

### Technical Feasibility

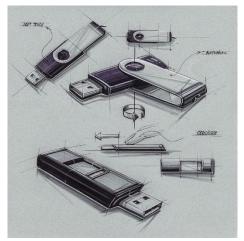
- How difficult is the technical solution to solve? How can we solve it? How long will it take?
- Financial Reward for Risk
  - What are the key assumptions for sales volumes? costs? timeline? lifecycle?



# **Stage 2 Deliverable Example – Product Definition with Winning Protocept**



The Basic 8 Framework™ Helps You Add Definition to NEW Ideas The Benefit – A Sharp, Early Product Definition



Sample Winning Protocept





# GATE 3 – Money Gate

Purpose:	A robust evaluation: Real, Win, Worth.
Players:	Cross-functional Gatekeepers who are the resource (people & \$) owners.
Gate Challenge:	How much information do you need before you can make the investment? Holding business to a high standard for a realistic return on investment.
Enabler:	Scorecard with proven criteria.
Decisions:	Go/Kill/Hold/Recycle Approve Plan for Next Stage (i.e. # of days of effort) and people assignments Guidance regarding product definition validation – when is enough, enough?



# How Much Analysis is Enough? Use Stable and Reliable Information Only for Key Decisions

	<b>Information</b> Fixed	<b>Stability</b> Fluid
Fact-Based	Stable, relevant and reliable information: Base key decisions on information. (e.g., Develop, Go/Kill)	Information is of good quality but is unstable or subject to change. Do not use for key decisions. Monitor situation or move to single customer launch.
Opinion-Based	Can base early decisions (Go/Kill; Preliminary Product Definition) on this information. Undertake studies to get facts.	Poor and unstable information: Risky to base key decisions on this. Largely anecdotal info.



Source: Adapted from Robert G. Cooper and Scott J. Edgett Lean, Rapid and Profitable New Product Development www.stage-gate.com

Information Reliability

# Gate 3 - Scorecard with 6 Criteria

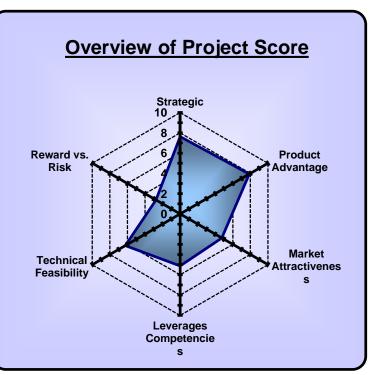
Strategic Fit and Importance	<ul> <li>Fit with business and innovation strategy</li> <li>Impact on business</li> <li>Importance to the business</li> </ul>		0	4	7	10
Product and Competitive Advantage	<ul> <li>Unique benefits to customer/consumer</li> <li>Value for money from customer perspective</li> <li>Competitive advantage</li> </ul>		0	4	7	10
Market Attractiveness	<ul> <li>Market size and growth</li> <li>Gross margins</li> <li>Competitive intensity</li> </ul>		0	4	7	10
Synergies or Core Competencies	<ul> <li>Distribution and sales force</li> <li>Customer base</li> <li>Technological, Production know-how and experience</li> <li>Supplier production capabilities, expertise &amp; facilities</li> </ul>		0	4	7	10 
Technical Feasibility	<ul> <li>Technical gap to reach the solution</li> <li>Program complexity</li> </ul>		0	4	7	10
Financial Reward vs. Financial Risk	<ul> <li>Degree of financial return</li> <li>Level of financial risk</li> </ul>	Total Sc	ore (0	to 60	):	

SE

International

**Project:** 

roject Attra	activeness Sc	ore (out of 60) =	34.4	57%	Decision			
Evaluator	Strategic	Product Advantage	Market Attractiveness	Leverages Competencies	Technical Feasibility	Reward vs. Risk	Score out of 60	
Tom	0	10	4	7	7	10	38.0	
Janice	10	7	4	4	7	4	36.0	
Ed	10	10	7	4	4	4	39.0	
Mark	10	7	7	4	7	0	35.0	
Mary	7	7	4	4	7	0	29.0	
Frank	7	5	4	4	4	0	24.0	
Susan	10	10	4	7	7	4	42.0	
Sherry	7	7	4	7	7	0	32.0	
Total:	61	63	38	41	50	22	275.0	
Mean:	7.6	7.9	4.8	5.1	6.3	2.8	34.4	
Team:	10.0	7.0	4.0	4.0	7.0	4.0	36.0	
Std Dev:	3.42	1.89	1.39	1.55	1.39	3.54		



Gates produce a summary of cross-functional, independent scores which double as feedback to the team (project strengths & weaknesses)



# **GUSTAVO LEITE, UNIVERSITÉ SAINT-ANNE**



Sainte Anne

Laboratoire d'innovation en science et en industrie

• Dr. Gustavo Leite, Assistant Professor

# Fundamental and Applied Research

- Microbial physiology Fermentation Molecular biology Bioremediation
- Expertise Related to Early and Development Stages/Gates
  - Wild yeast isolation for beverage production process
  - Characterization of yeasts
  - Analysis of co-fermentation process for product improvement
  - Metabolic engineering yeast for bioproduction of commercial relevant molecules









100

# Examples of projects with companies and organizations

- Characterization of wild yeast strains for improvement of <u>ice cider</u> and <u>beer</u> production
  - Isolation and molecular identification of beneficial strains
  - Optimization of fermentation process to exploit the beneficial strains
  - Identification of contaminant strains associated with spoilage
- Metabolic engineering yeast strains for biosynthesis of high demand molecules
  - Development of a biological platform for nylon
     6,6 production
  - Physiological characterization
  - Fermentation optimization





Sainte Anne





# Rapid Development Stage

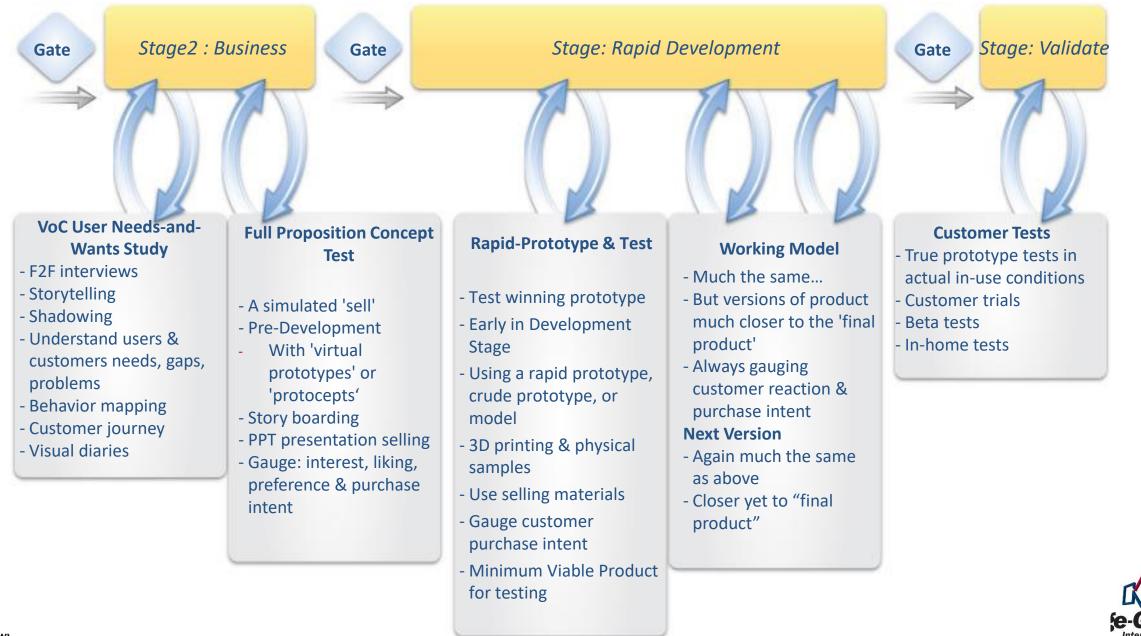




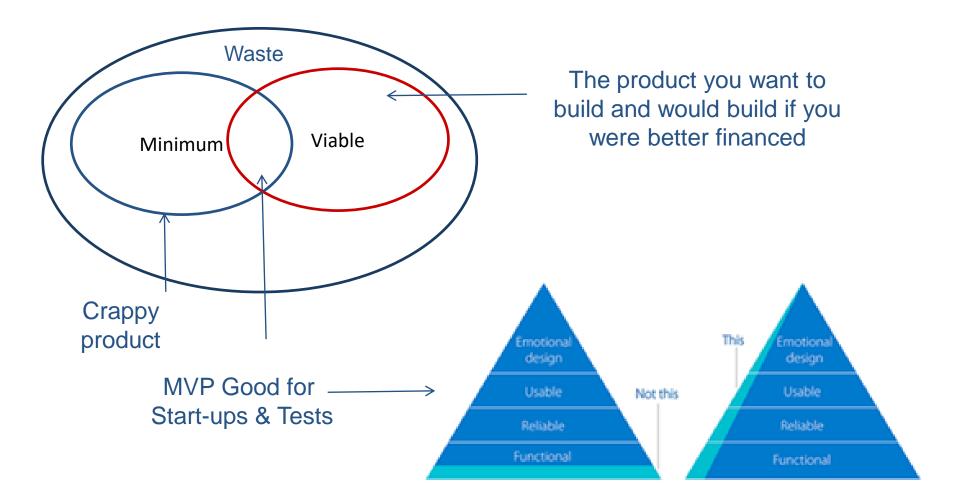
102

www.stage-gate.com

# **Rapid Iterations – Design, Test, Feedback**

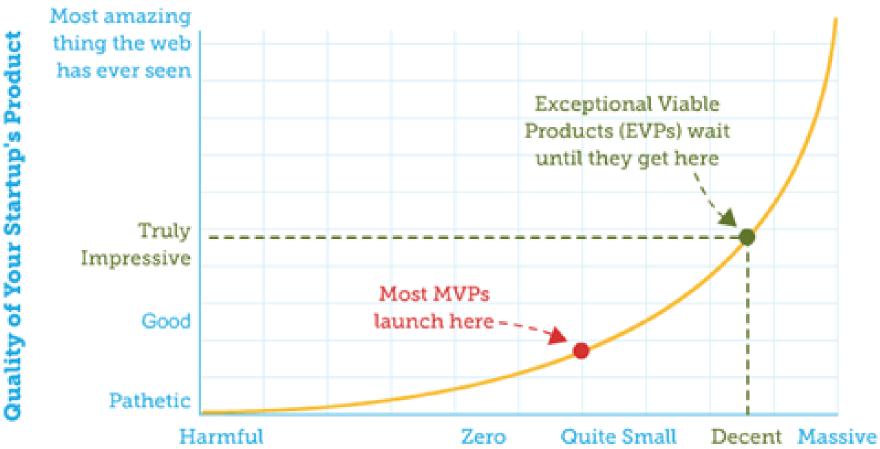


# Minimum and Viable Product (MVP)



Stage-Gate International

# **Beware of the MVP: Pros & Cons**



### Attention, Customers, & Evangelism You Can Expect to Receive



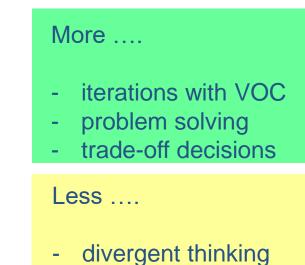


# **STAGE 3 – Develop**

Purpose: Rapid iterations of design prototypes to confirm customer desirability & business viability.

Activities: Execute the Stage 3 Plan approved at the previous Gate Translate the VOC & protocept feedback into a prototype Rapid iterations: design, test, feedback with sample market Source materials & test design for manufacturability Preliminary process design or sourcing plan Design business model & value chain (with VOC feedback) Update product definition (Basic 8 Framework<sup>™</sup>) Update cost inputs to business case & validate market

Deliverables:Product Definition with Alpha Prototype(s)Business Summary<br/>Recommendation (Go/Kill)<br/>Outline of Next Stage (effort to complete it & \$)



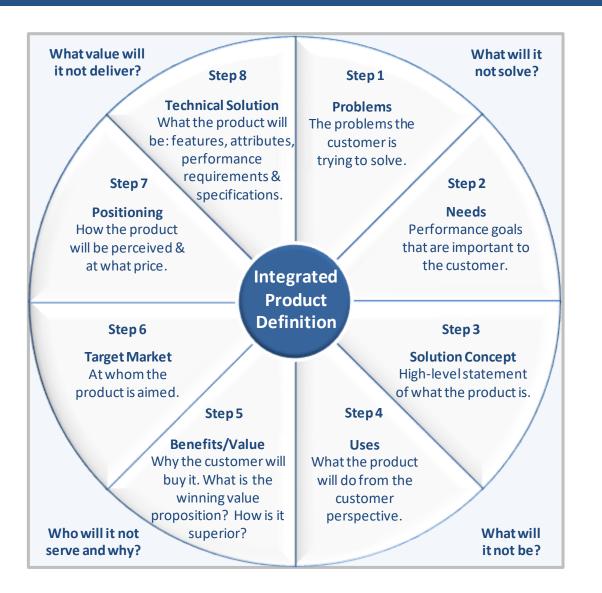
- options generation

106

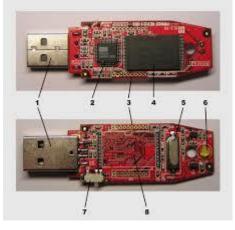
- new starts



# Stage 3 Deliverable Example – Product Definition with Winning Prototype (Alpha)



The Basic 8 Framework™ Helps You Add Definition to NEW Ideas The Benefit – A Sharp, Early Product Definition



Sample Winning Prototype



107

www.stage-gate.com



# **GATE 4 – Scale Up Gate**

Purpose:	A detailed review of the business case for scale-up investment readiness.
Players:	Cross-functional Gatekeepers who are the resource (people & \$) owners.
Gate Challenge:	Transitioning from critical evaluation to full launch support. Gauging new product readiness for scale-up investment.
Enabler:	Scorecard with proven criteria.
Decisions:	Go/Kill/Hold/Recycle Approve Plan for Next Stage (i.e. # of days of effort) and people assignments Guidance gauging product sales validation – field tests or early adopter purchase?



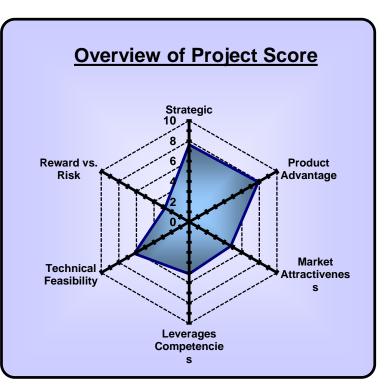
# Gate 4 - Scorecard with 6 Criteria

	Total 5			109	Staro G
Financial Reward vs. Financial Risk	<ul> <li>Degree of financial return</li> <li>Level of financial risk</li> </ul> Total Sector 10 (2010)	core (0	to 60	). <b>[</b>	
Technical Feasibility	<ul> <li>Technical gap to reach the solution</li> <li>Program complexity</li> </ul>	0	4	7	10
Synergies or Core Competencies	<ul> <li>Distribution and sales force</li> <li>Customer base</li> <li>Technological, Production know-how and experience</li> <li>Supplier production capabilities, expertise &amp; facilities</li> </ul>	0	4	7	10 
Market Attractiveness	<ul> <li>Market size and growth</li> <li>Gross margins</li> <li>Competitive intensity</li> </ul>	0	4	7	10
Product and Competitive Advantage	<ul> <li>Unique benefits to customer/consumer</li> <li>Value for money from customer perspective</li> <li>Competitive advantage</li> </ul>	0	4	7	10
Strategic Fit and Importance	<ul> <li>Fit with business and innovation strategy</li> <li>Impact on business</li> <li>Importance to the business</li> </ul>	0	4	7	10

International

#### **Project:**

Project Attractiveness Score (out of 60) =			34.4	57%	Decision		
Evaluator	Strategic	Product Advantage	Market Attractiveness	Leverages Competencies	Technical Feasibility	Reward vs. Risk	Score out of 60
Tom	0	10	4	7	7	10	38.0
Janice	10	7	4	4	7	4	36.0
Ed	10	10	7	4	4	4	39.0
Mark	10	7	7	4	7	0	35.0
Mary	7	7	4	4	7	0	29.0
Frank	7	5	4	4	4	0	24.0
Susan	10	10	4	7	7	4	42.0
Sherry	7	7	4	7	7	0	32.0
Total:	61	63	38	41	50	22	275.0
Mean:	7.6	7.9	4.8	5.1	6.3	2.8	34.4
Team:	10.0	7.0	4.0	4.0	7.0	4.0	36.0
Std Dev:	3.42	1.89	1.39	1.55	1.39	3.54	



Gates produce a summary of cross-functional, independent scores which double as feedback to the team (project strengths & weaknesses)



#### SUMAN KALYAN, SINGOLAR WITH DANNY SILVER, ACADIA SCHOOL OF COMPUTER SCIENCE





**SINGOLAR** Conversational UI for Business Analytics

#### "Any customer insight is just 1 conversation away"

### 2014/15

- Product Development (MVP) in collaboration with AIDA
- Launch Accelerator

2016

- Paid Pilots with 3 universities Marketing dept
- Business accelerator
- Enhance IP



- Converted 2 universities to customers
- Customer growth in Higher Ed marketing
- Add a new vertical















#### **SINGULAR** Conversational UI for Business Analytics



#### "Working with Singolar has been rewarding and productive"



- Work with MSc student Shameer Igbal
- Developed an Automated Machine Learning Engine
- Data preparation, feature selection, model development and testing + **Prediction Engine**
- Shameer hired as full-time employee
- Work with BSCH student Luke Webster
- Developed a recurrent deep learning prototype
- Predict a customer's next decision/action based on prior interactions with company (80+% accuracy)
- Predict best next action for company to retain/ convert customer

innovacorp

(A)

EARLY STAGE VENTURE CAPITAL

P&I Voucher. Tier 1

innovacorp

EARLY STAGE VENTURE CAPITAL P&I Voucher, Tier 2



7017

2016

- Provided general technical advice and counsel
- Deployment of recurrent deep learning approach

UNIVERSITY OF LEICESTER

#### **RICHARD DESCHENE, KENNEY & ROSS**





# Hydrolyzed Fish Collagen







## Networking break



# **Commercialization Stages**





## What is Commercialization?

The launch is not the end of development, it's the beginning of selling!

> We used to describe it as 'launch and leave'. Now, we launch an 'aggressive, integrated, team attack on the market to accelerate sales - all hands on deck!

#### **The Launch Challenge**

- Learning loops with each new market segment reached
- Wide range of results & information arriving in a somewhat chaotic fashion:
  - Poor sales: bad product? price? messaging? sales? training?
  - Mixed performance results: wrong channels? wrong partners?
  - Not enough product: bad supply? manufacturing? distribution?
  - Mixed product availability: wrong forecasting inputs?
  - Product quality: bad design? manufacturing? supply? positioning?
  - Product application: wrong positioning? training? support?

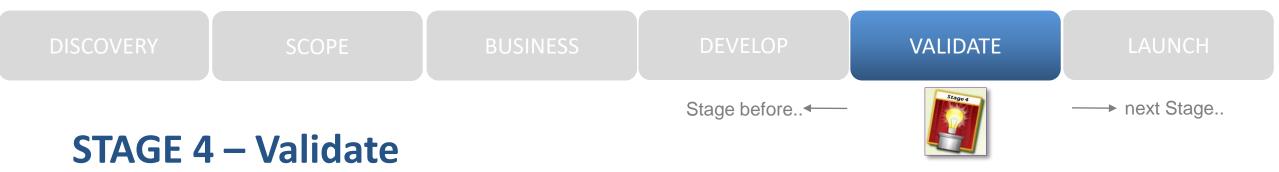
A Rapid Response Team to evaluate incoming feedback and to determine to PERSEVERE or PIVOT



#### Preparing to Launch Powerful Push to Gain Momentum with Sales

- Make timing and sequence adjustments to original strategies, plans and/or roadmap with new information at hand (field tests, early adopter sales, soft launches, full launch)
  - Product adjustments and lifecycle plans
  - Market entry into segments and/or regions
  - Messaging content, collateral
  - Supply materials and partners
  - Manufacturing process adjustments and/or expansions
  - Distribution and logistics
  - Channel partners
  - Sales strategy
  - Business model
- Formal post launch review results (typically 9-12 months)

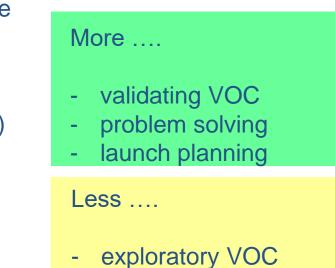




**Purpose:** Pilot scale-up of the winning prototype for field trials and early customer adoption to confirm value.

Activities:Execute the Stage 4 Plan approved at the previous Gate<br/>Translate the winning (alpha) prototype into a beta prototype<br/>Rapid iterations: design, test, feedback with sample market<br/>Test materials & process design for manufacturability<br/>Finalize sourcing plan<br/>Finalize business model & value chain (with VOC feedback)<br/>Develop market launch strategy and plan<br/>Secure early adopt customers for field tests (or sales)<br/>Update cost inputs to business case & validate market

**Deliverables:** Product Definition with Beta Prototype(s) Business Summary Recommendation (Go/Kill) Outline of Next Stage (effort to complete it & \$)



- options generation

121

- new starts





#### **GATE 5 – Launch Gate**

Purpose:	A detailed review of the launch plan for readiness and to authorize full support.
Players:	Cross-functional Gatekeepers who are the resource (people & \$) owners.
Gate Challenge:	Prematurely launching a product. Gauging holistic launch readiness for in-market sales support & feedback.
Enabler:	Scorecard with proven criteria.
Decisions:	Go/Kill/Hold/Recycle Approve Plan for Next Stage (i.e. # of days of effort) and people assignments Post launch check-ins to evaluate market reaction – persevere or pivot?



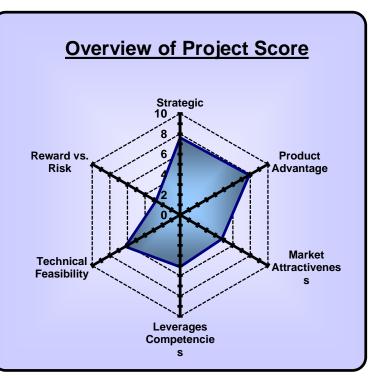
#### Gate 5 - Scorecard with 6 Criteria

Technical Feasibility	<ul> <li>Technical gap to reach the solution</li> <li>Program complexity</li> </ul>	0	4	7	10
Synergies or Core Competencies	<ul> <li>Distribution and sales force</li> <li>Customer base</li> <li>Technological, Production know-how and experience</li> <li>Supplier production capabilities, expertise &amp; facilities</li> </ul>	0	4	7	10 
Market Attractiveness	<ul> <li>Market size and growth</li> <li>Gross margins</li> <li>Competitive intensity</li> </ul>	0	4	7	10
Product and Competitive Advantage	<ul> <li>Unique benefits to customer/consumer</li> <li>Value for money from customer perspective</li> <li>Competitive advantage</li> </ul>	0	4	7	10
Strategic Fit and Importance	<ul> <li>Fit with business and innovation strategy</li> <li>Impact on business</li> <li>Importance to the business</li> </ul>	0	4	7	10

International

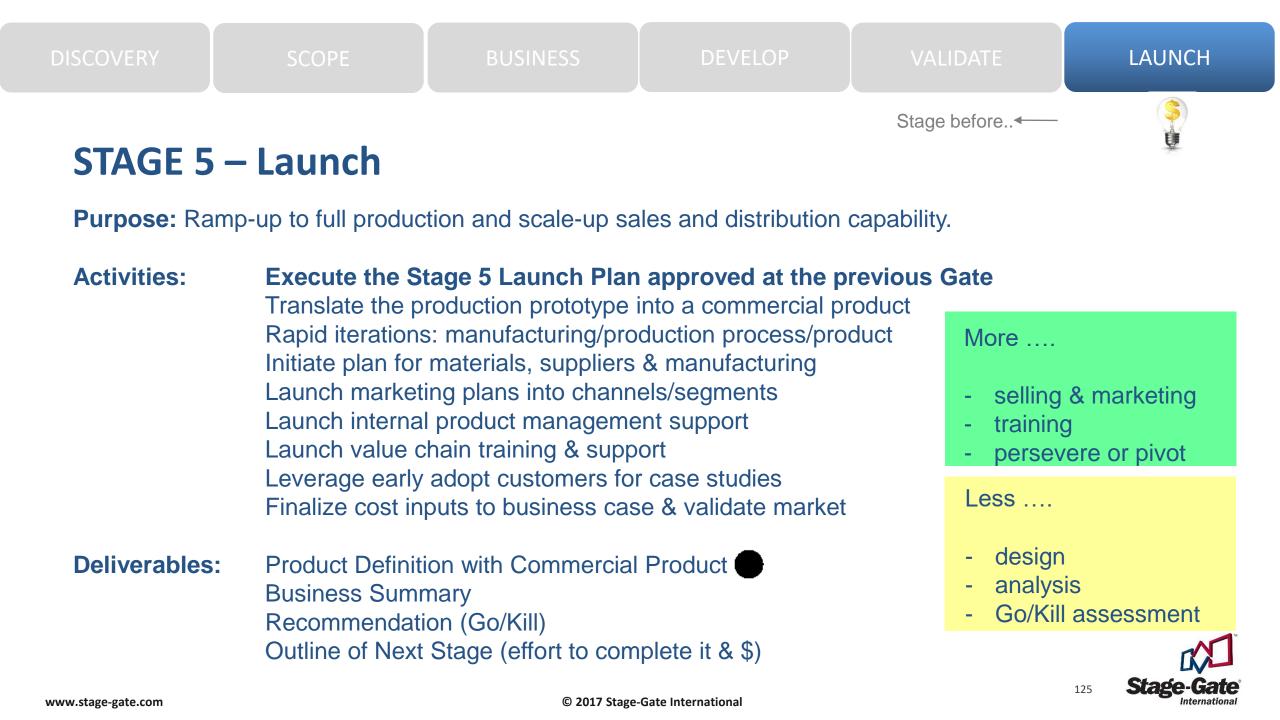
**Project:** 

Project Attra	activeness Sc	ore (out of 60) =	34.4	57%	Decision			
Evaluator	Strategic	Product Advantage	Market Attractiveness	Leverages Competencies	Technical Feasibility	Reward vs. Risk	Score out of 60	
Tom	0	10	4	7	7	10	38.0	
Janice	10	7	4	4	7	4	36.0	
Ed	10	10	7	4	4	4	39.0	
Mark	10	7	7	4	7	0	35.0	
Mary	7	7	4	4	7	0	29.0	
Frank	7	5	4	4	4	0	24.0	
Susan	10	10	4	7	7	4	42.0	
Sherry	7	7	4	7	7	0	32.0	
Total:	61	63	38	41	50	22	275.0	
Mean:	7.6	7.9	4.8	5.1	6.3	2.8	34.4	
Team:	10.0	7.0	4.0	4.0	7.0	4.0	36.0	
Std Dev:	3.42	1.89	1.39	1.55	1.39	3.54		

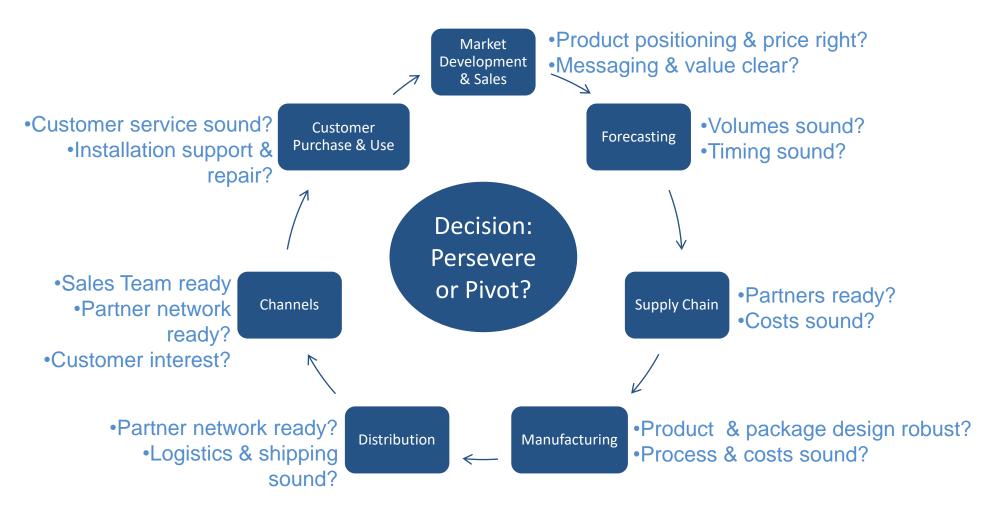


Gates produce a summary of cross-functional, independent scores which double as feedback to the team (project strengths & weaknesses)





#### Launch The Ultimate Test of All Assumptions





#### **MATHEW VANKOUGHNETT, NSCC**

#### WITH BETH MCCORMACK, NSCC



#### NSCC APPLIED RESEARCH: WHAT WE DO AND WHO WE ARE

- Started in 2000
- Team of 60+ employees
- Our researchers, faculty, and students provide innovative and problem solving solutions for our community and industry partners using the power of technology, creativity, imagination and innovation
- Five Major Research Areas:
  - Energy
  - Ocean Technology
  - Geographic Sciences
  - Environmental Technologies
  - Engineered Technologies





#### **EXAMPLE: SLOUCH CORRECTION DEVICE**

#### Partner: Northwood

**Details:** Design an anti-slouch device that is more effective and easier to use vs. what currently exists.

**Result**: Designed, prototyped, tested and made improvements to device.





#### **EXAMPLE: SLOUCH CORRECTION DEVICE – PART II**

#### **Partner:** MacKenize Healthcare Technologies

**Details:** MacKenzie made improvements to original device (manual to automated) and required assistance with prototype testing and modification.

**Result**: Design improvements made to device – now at product launch stage.

# paraglide





## VALÉRIE LALANDE, UNIVERSITÉ SAINT-ANNE





Laboratoire d'innovation en science et en industrie

#### Valérie Lalande, Director

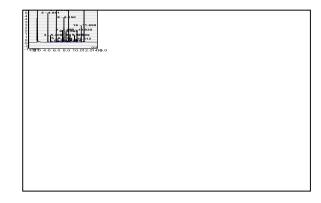
- R&D Laboratory and Greenhouses
  - Microbiology
  - Biochemistry
  - Genomics
- Expertise Related to Early and
   Development Stages/Gates
  - Experimental design
  - Process optimization
  - Efficacy trials
  - Product quality assessment
  - Method validation

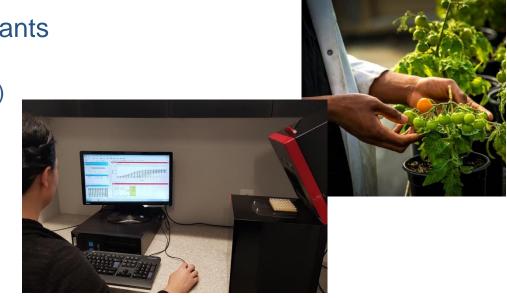




# Examples of projects with companies and organizations

- Optimization of an aquaculture production system
  - Controlling bacterial proliferation
  - Improving Omega-3 content (GC-MS)
- Efficacy trials of plant biostimulants
  - Plants grown in the greenhouse
  - Gene expression analyses (qPCR)
- Microbial genomics QC
  - Food-borne pathogens
  - Animal diseases



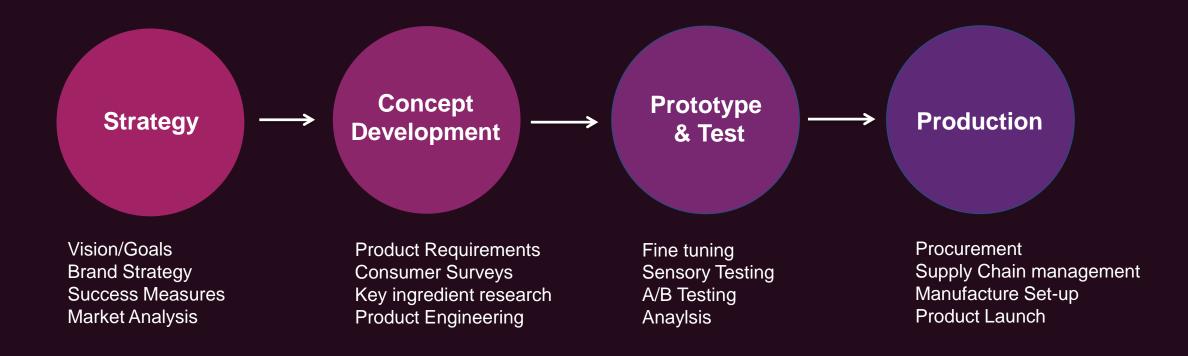




#### SARAH RILEY, GUB GUB FOODS WITH MATT MCSWEENEY, ACADIA SCHOOL NUTRITION & DIETETICS







### **Overview of the Stages - Accelerate the Creative Process**



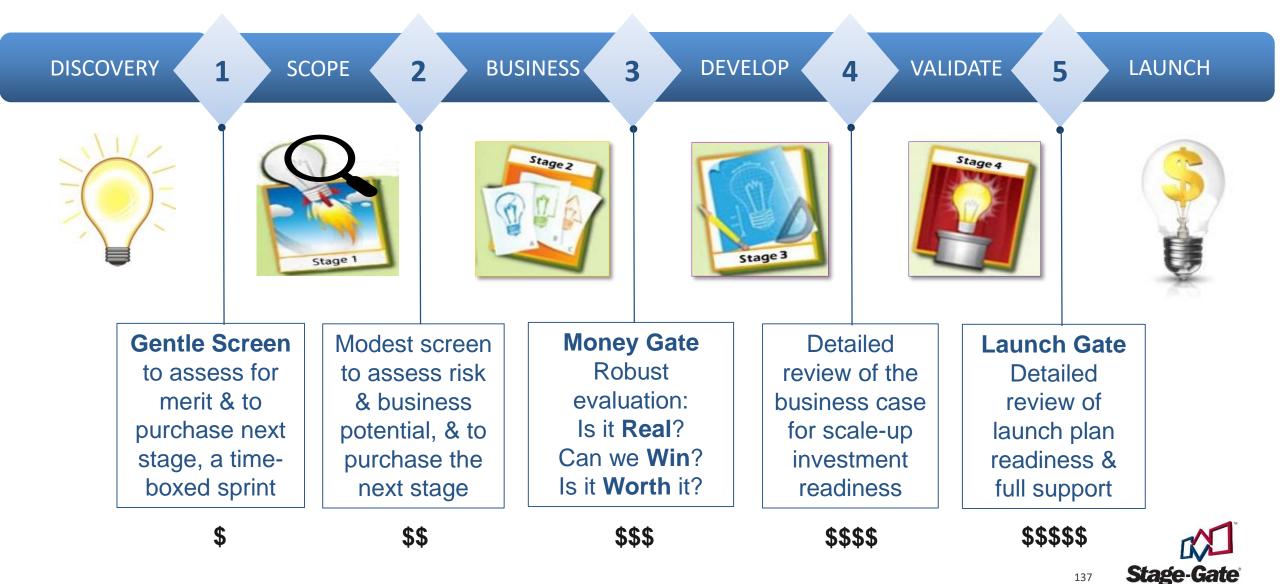


136

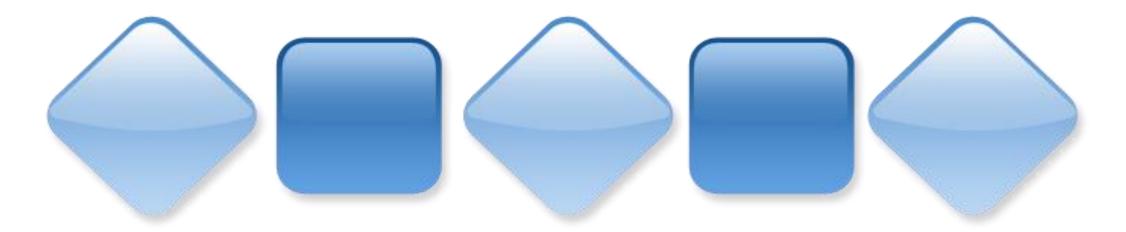
www.stage-gate.com

business viability

#### **Overview of the Gates - Accelerate Time to Profit**









www.stage-gate.com



### **Fast Moving Goods**

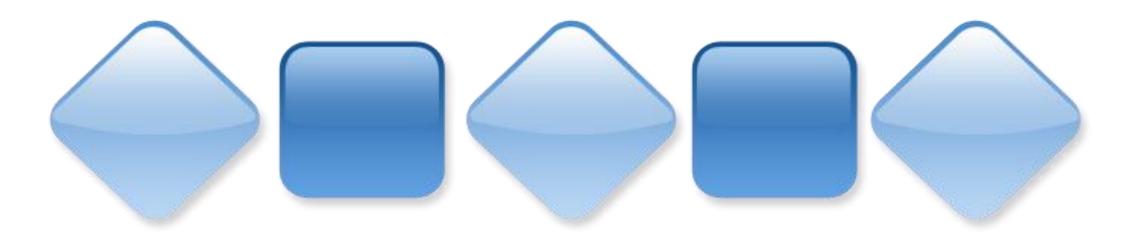


www.stage-gate.com

© 2017 Stage-Gate International

Internationa

# Thank You! www.stage-gate.com



michelle.jones@stage-gate.com



141

www.stage-gate.com

© 2017 Stage-Gate International