Driving Medical Device Innovation in a Large Corporation

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Growth is Imperative

• Ongoing Commercial Success Translates into Greater and Greater Capital Market Expectations

• Growth targets Can be Met in Two Ways
  • Making the Most of Existing Business
  • Finding and Growing New Business
Innovation is Imperative

“There are no strategies for creating wealth in the long term that are not driven by innovation”

Gary Hamel, 2004
Innovation is Hard

- Uncertainty
- Risk
- Ambiguity
- Competing with Sustaining the Existing Business
- Lack of Process or Consistency in Approach
When Capabilities Become Disabilities

Big Company
• Regulate
• Highly Structured
• Capture Existing Markets
• Manage People
• Uni-functional Responsibilities
• Group Responsibility
• Employee Attitude
• Risk is Opportunity to Fail
• Process Observers / Followers
• Evolution

Small Company
• Innovate
• Little/No Structure
• Create Markets
• Manage Products
• Multi-Functional Responsibility
• Individual Responsibility
• Owner Attitude
• Risk is Opportunity
• Process Involved / Developers
• Revolution
Break the Mega Project Cycle

- Infrequent Product Offerings
- High Cost Of Failure
- Demand for Perfect Products
- Tight Control
- Heavy Management Involvement
- Slow Progress

BIG COMPANY - SLOW INNOVATION
Innovation Process

“I think you should be more explicit here in step two.”
Go Faster
Fortification versus Exploration

Defending the Existing Business versus Creating New Opportunities Through Innovation

<table>
<thead>
<tr>
<th>Fortification</th>
<th>Exploration</th>
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<tbody>
<tr>
<td>• The Future of the Current Business</td>
<td>• The Future Business</td>
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<tr>
<td>• Extending the Current Set of Products and Technologies</td>
<td>• Technology Innovation and New Services, Beyond Sustaining</td>
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<tr>
<td>• Designed to Preserve Market Share and Sustain Profits</td>
<td>• Designed to Create New Markets and Generate Growth and Profits</td>
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Fortification versus Exploration

Defending the Existing Business versus Creating New Opportunities Through Innovation
Castles and Ships

• A Useful Analogy
• Different Skills and Processes for Front End and Formal Development
• Applicable to People, Process, Portfolio, Metrics …
Selecting Your Crew

- Seek out crew members who are successful graduates of the right “School of Experience”
- Mix of technical skills, cross functional experiences, and market understanding
- Resourceful problem solvers
- Comfortable with ambiguity
- Able to navigate corporate processes
Setting Direction

• Before setting sail, first have a sense for where you are headed
  • Historical perspectives
  • Customer input
  • Observational research
  • Competitive assessment

• Admirals, their ships, and their crews must be given some measure of autonomy
“A ship that stays within site and control of land is unlikely to make surprising discoveries”
Process

- Traditional waterfall or stage-gate development models are often inadequate for early stage innovation
- Early stage innovation is hypothesis driven and requires a process that accommodates incremental learning
Front End Process

- 3 Phases
- Incremental Development
- Risk Reduction
- Iterative Modeling and Customer Evaluation
- Milestone Driven
Stages and Milestones Track Progress

- Clinical, Technical, Commercial, and Organizational Milestones for Early Development
- Increasing Levels of Review As Project Progresses
Avoid Too Big, Too Early

Perceived Goal → Out of $ → Successful Design

Point of Learning and Adjustment

Implications
- Start Simple
- Seek Early Learning
- Adjust
Understand What Others Don’t

Blending traditional and non-traditional research techniques

- Market Research
- Ethnographic Research
"If I'd asked my customers what they wanted, they'd have said a faster horse."

Henry Ford (regarding the first car he ever built)
Portfolio

Technical Uncertainty

Low

High

Commercial Uncertainty

Core, Line Ext./Commodity

Platforms

New Technology Development Options

Stepping Stones

New Market/New Procedure Options
Metrics

Traditional
• Growth Rate
• Percentage Revenue from New Products
• Time to Market

New Market Innovation
• Growth Rate Above Market
• Percentage Revenue from First-to-Market Products
• Time to Breakeven
Caveat

• Castles will almost always appear more financially attractive
  • Perception of lower risk in established markets and technologies
• The goal of early stage concept exploration and development is to reduce risk in innovation
Innovation is Messy
and it Takes Work

“Opportunity is missed by most people, because it shows up dressed in overalls and looks like work”

Thomas A. Edison
Approaches to Developing Capability

- Skunk Works
- Innovation Centers
- Dedicated Cross Functional Teams
- Start-Ups within the Larger Organization
• Requires Balance
  – Autonomy is Critical, But Re-Integration Provides Growth
• Relationships Must Be Maintained
Thank You