



Improvement & Innovation

William B. Rouse

Overview

- Sources of Best Practices
- Leveraging Lessons
- Evaluating Innovations
- Handling Variability
- Summary

Source of Best Practices

- Invention vs. Innovation
- Patterns & Innovation
- Bottom Line
- Balance of Innovation

Invention & Innovation

- "Innovation is the introduction of change via something new." (Rouse, 1992).
- "Innovation (is) the process of taking a discovery or idea to the market." (Brinkman, 2000).
- "Innovation is invention, or doing things differently, that leads to business success." (Heilmeier, 2000)
- "Research is the transformation of money into knowledge; innovation is the transformation of knowledge into money." (attributed to Bayer).

Patterns & Innovation

- Patterns & Pattern Languages
 - Pattern = rule or guideline
 - Pattern languages = rules connecting patterns
- Patterns are regularities that are discovered in nature or invented by humans
- Patterns that "work" and hence create change beyond the originators become innovations
- Creative people discover & create patterns by
 - Consuming large amounts of wide varieties of information
 - Seeing connections and distinctions not seen by others

Bottom Line

- Invention and innovation involve discovery of patterns that work and are eventually broadly adopted, if only for a period of time until new constraints are encountered
- The behavioral and social processes underlying this discovery and adoption are common to all people whether they are engineers or artists

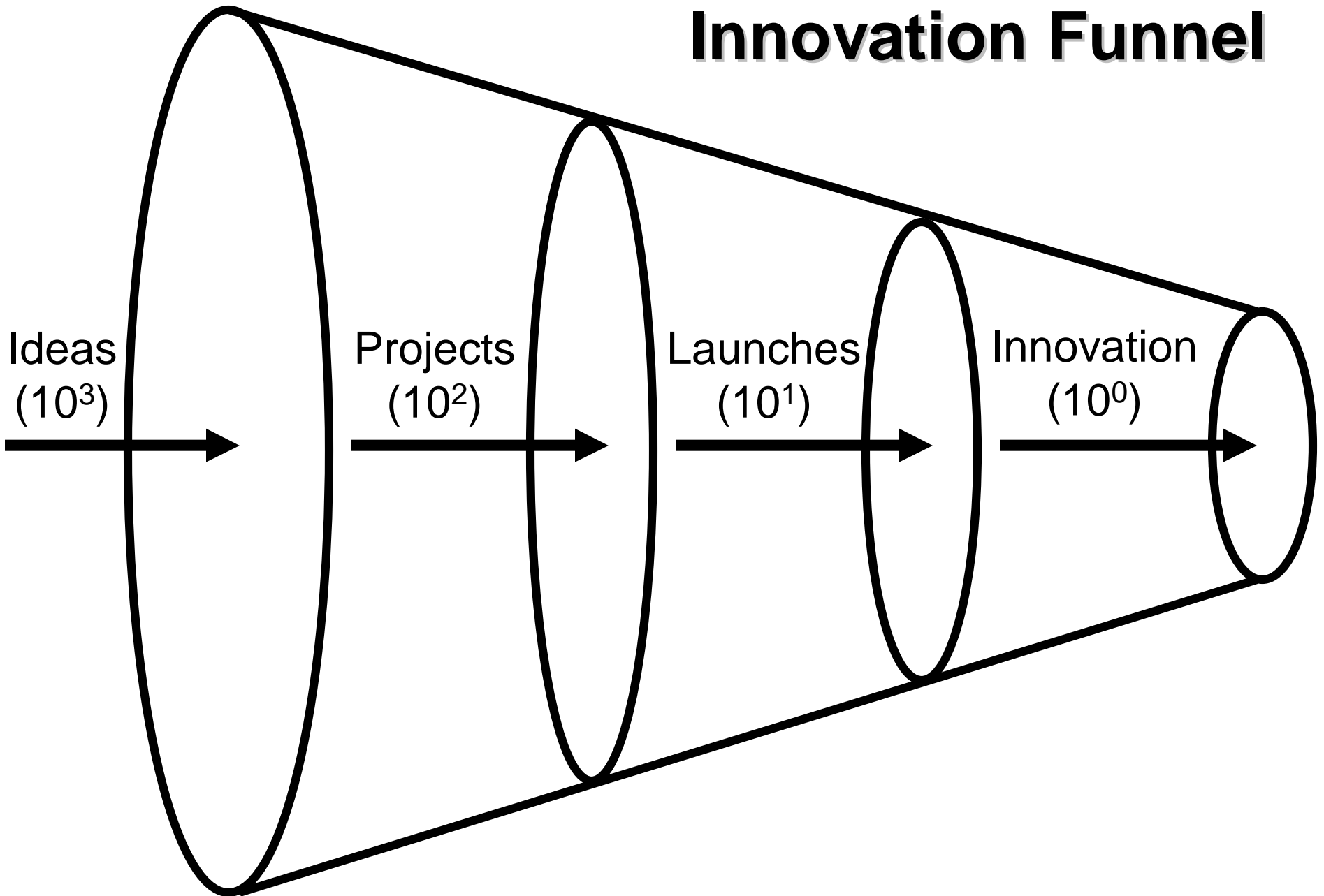
Balance of Innovation

- Inside-Out
 - Internally-driven invention & market experimentation è Creating patterns
- Outside-In
 - Externally-focused benchmarking & identifying best practices è Exploiting patterns
- Managed
 - Defined & managed processes to assure schedule & budget compliance

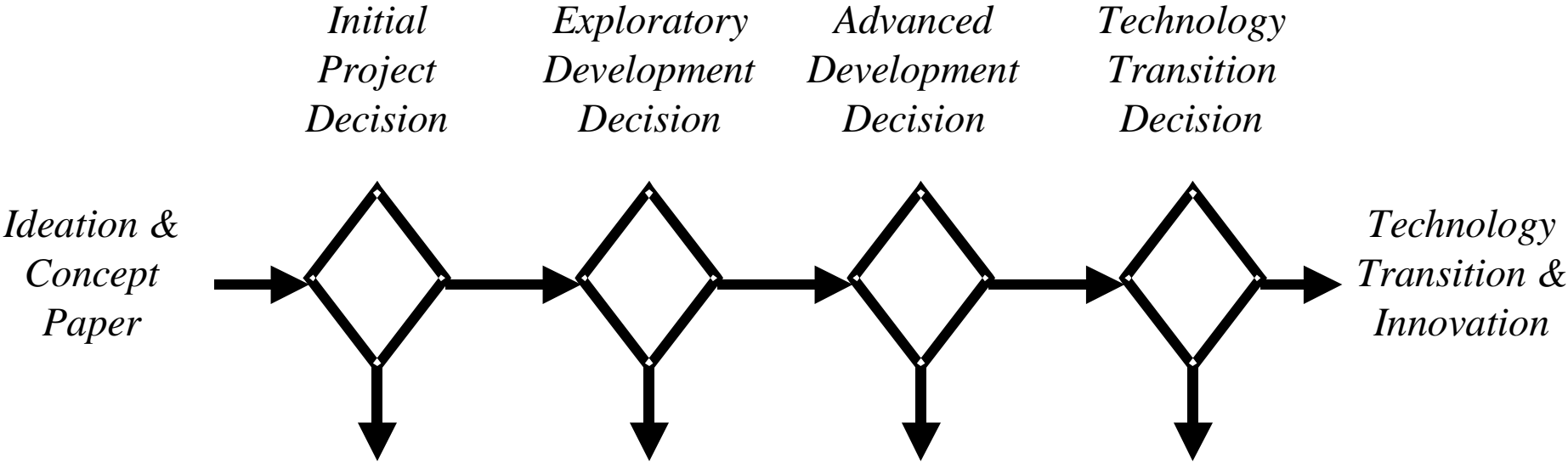
Leveraging Lessons

- Innovation Funnel
- Multi-Stage Investments
- Options-Based Thinking
- Health Advisor

Innovation Funnel



Multi-Stage Investments



Options-Based Thinking

- Technology & process investments create contingent opportunities for later solution investments
 - “Options” for investment
- Usually significant uncertainty regarding likely cash flows from later investments
 - “Volatility” of cash flows
- Delaying investment decisions -- rather than deciding now -- can be of substantial value
 - “Purchasing” options that can later be exercised (or not)
- Value of options increases with projected cash flows, uncertainty, and time

Health Advisor



Client Interaction

What would you like to do?



SEE CLIENTS **REVIEW CLIENTS** **REVIEW PROVIDERS** **REVIEW MY PERFORMANCE** **MANAGE MY FIRM**

Review Providers & Schedule Appointments

CURRENT PHASE

- Introduction
- Health History
- Symptoms
- Life Style
- Diagnosis
- Treatment
- Follow-Up

Move to Next Phase



Name
Nicole Sexton

Date
2007-03-28

Slot
12

Which question do you want to ask?

- What symptoms have you been experiencing?
- How long have these symptoms been evident?
- How often do you experience these symptoms?

A: Hello, please sit down. Thank you.

C: This is a very nice office.

A: How are you feeling today?

C: I've not been doing well.

A: Can you give me a quick history of my symptoms?

Go to: **RECEPTION AREA** **ADVISOR'S OFFICE** **WAITING ROOM** **Help** **FAQ** **Exit & Logout**

Evaluating Innovations

- Multi-Stage Criteria
- Balanced Scorecard
- Human-Centered Design
- Innovator's Dilemma

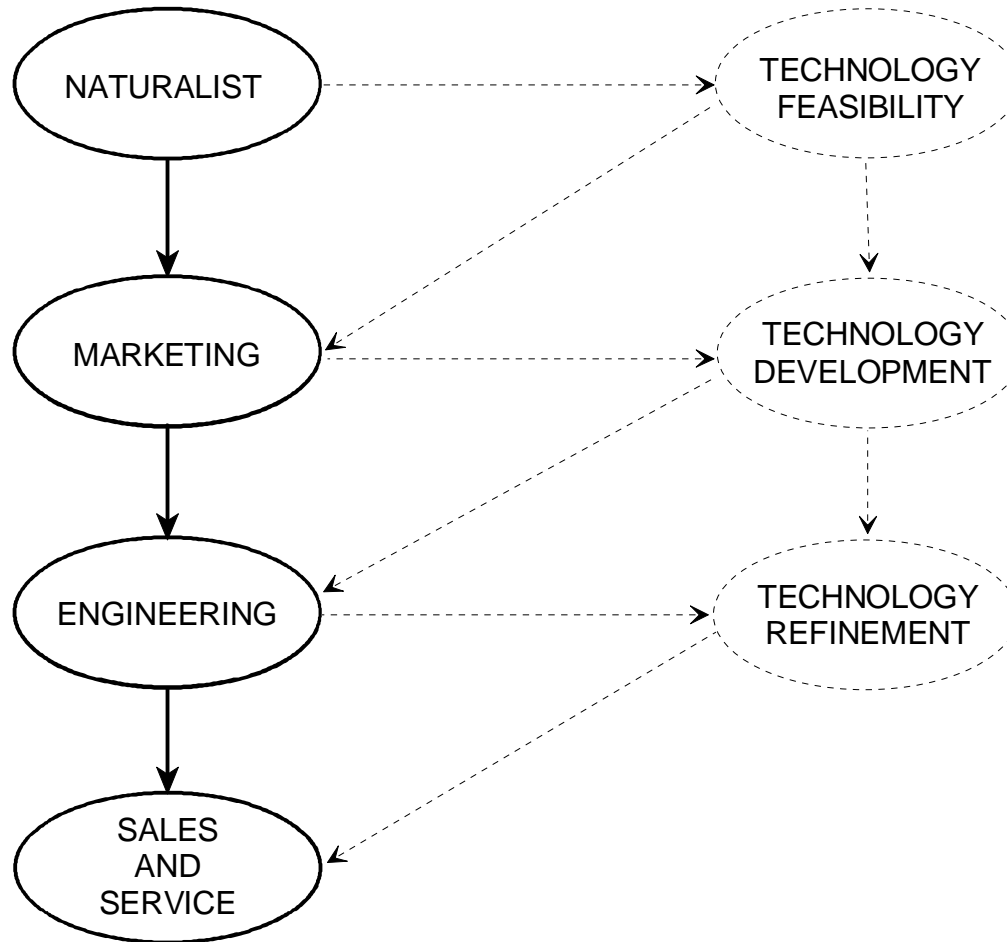
Decision Criteria

	Decision				
Decision-Criteria	Idea → Concept Paper	Concept Paper → Initial Project	Initial Project → Exploratory Development	Exploratory Development → Advanced Development	Advanced Development → Technology Transition
Strategic-Fit	NA	Possible	Definite	Priority	Programmed
Payoff	NA	Imaginable	Articulated	Projected	Demonstrated
Schedule	NA	One-year deliverables	Multi-year sequence of deliverables	Multi-year sequence of demonstrations	Technology transition plan
Resources	No budget	Discretionary budget available	Budget scoped appropriately	Costs/benefits projected	Costs/benefits assessed
Technical Risk	NA	NA	Anticipated	Managed	Minimized
Application Risk	NA	NA	NA	Anticipated	Managed
Personnel	Interest & commitment	Commitment & credibility	Commitment & credibility	Credibility & availability	Credibility & availability
Competencies	Desirable & obtainable	Desirable & developing	Available internally & externally	Available internally & externally	Demonstrated & available

Balanced Scorecard

Customer				Financial			
Objectives	Measures	Targets	Initiatives	Objectives	Measures	Targets	Initiatives
Customer Satisfaction	*	*	*	Internal Budget	*	*	*
Technology Transferred	*	*	*	External Resources	*	*	*
Operational Cost Savings	*	*	*	Collaboration/ Joint Ventures/ Partnerships	*	*	*
Internal Business Processes				Learning & Growth			
Objectives	Measures	Targets	Initiatives	Objectives	Measures	Targets	Initiatives
Budget/Service Variances	*	*	*	Publications/ Patents	*	*	*
Qual. Variances	*	*	*	Recognition of People & Technologies	*	*	*
Facilities/ Equipment Quality	*	*	*	Training Accomplished	*	*	*

Human-Centered Design




Handling Variability

- Human-Centered Design
 - Naturalist Phase
 - Marketing Phase
- Staging Investments
- Options-Based Valuation
- Process Control

Summary

- Sources of Best Practices
 - Invention & Innovation
- Leveraging Lessons
 - Funnels & Stages
- Evaluating Innovations
 - Stages & Human-Centered Design
- Handling Variability
 - Stages & Options

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