

STRATEGIC
CHALLENGES IN

R&D Talent Management

Lean Startup in Large Organizations

Jim Euchner, Goodyear

Norm Golm, Regal

Peter Koen, Stevens Institute



Liquid Talent: Tools to Embrace a More Fluid Workforce



Recruiting and Retaining Early Career Tech Talent



Career Paths for Innovation

October 3, 2017

2017 MEMBER SUMMIT OCTOBER 2-5 OMNI HOTEL FORT WORTH, TX

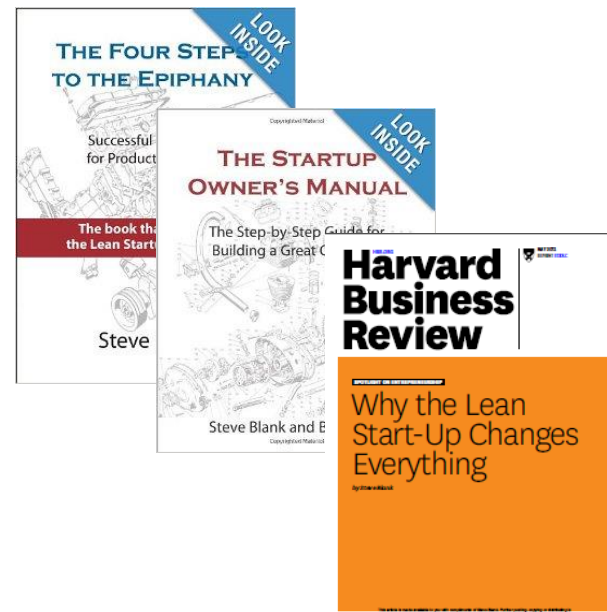


Creating Innovation Leadership Solutions
WWW.IRIWEB.ORG

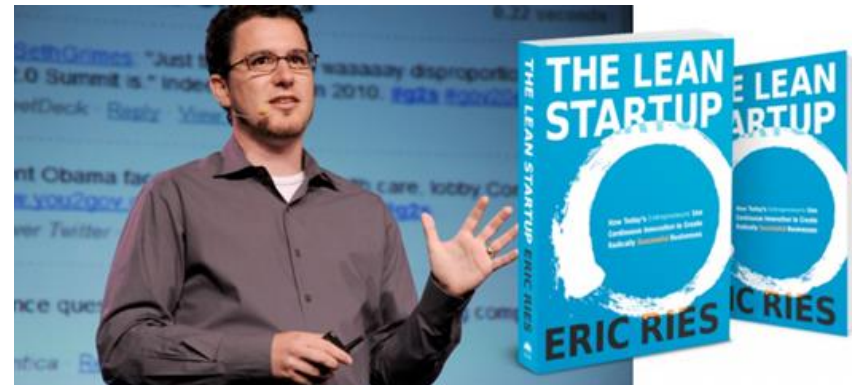
Research Objective

To determine how to effectively apply **lean start-up** methods in large companies to **transformational** and **disruptive** innovations

What is lean start-up?



Traditional View of Lean Startup

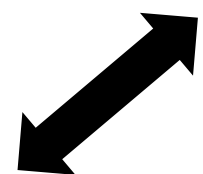
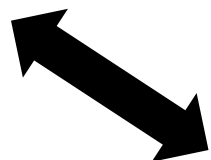


Lean Start-Up

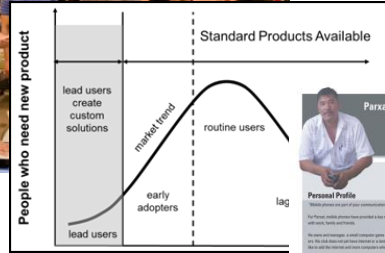
Very early customer/user visits

Business Model

CUSTOMER VALUE PROPOSITION (CVP)			OPERATING MODEL	
PROBLEM FORMULATED AS A POV What is the customer/ consumer problem or "job" you are solving? Problem is formulated from the Point of View (POV) of the user. Same concept as "Jobs to be done"	CUSTOMER/ CONSUMER CIRCUMSTANCE How can we define customer/ consumers in terms of who they are and their circumstance and in the form of personas?	SOLUTION ATTRIBUTES What attributes do we need to deliver to the customer? Which of our customer problems are we solving with these attributes?	SOLUTION What is the devised product and/or service that delivers on the key customer attributes?	KEY RESOURCES What are the key resources needed to deliver the CVP – people, technology, partners, funding
		COMPETITION AND BARRIERS What are the competitive alternatives to getting the job done and barriers to getting it done well?	CHANNELS What are the key channels the company uses to reach its customers?	KEY PROCESSES What are the unique resources required to achieve a competitive advantage?
			PAYMENT STRUCTURE What is the price and how does the customer pay for the solution?	KEY PROCESSES What are the key processes needed to deliver the CVP – marketing, sales, IT, R&D/PO, manufacturing
				KEY PROCESSES What are the unique processes required to achieve a competitive advantage?
PROFIT FORMULA				
REVENUE STREAMS AND ADOPTION How does the company generate cash from each customer segment when considering payment * volume? How do adoption dynamics impact the revenue stream?			COST STRUCTURE What are the costs (direct and overhead) incurred to operate the business model?	
RISKS AND ASSUMPTIONS				
What are the top three risks and assumptions?				



Minimum Viable Prototype



Parxel Protocol
Parxel Protocol is a proprietary process for creating a Minimum Viable Prototype (MVP) for a new product. It is designed to help entrepreneurs and startups validate their ideas and build a business model that is based on customer feedback.

Personal Profile
Parxel Protocol is a proprietary process for creating a Minimum Viable Prototype (MVP) for a new product. It is designed to help entrepreneurs and startups validate their ideas and build a business model that is based on customer feedback.

Key Significant Differences
Parxel Protocol is a proprietary process for creating a Minimum Viable Prototype (MVP) for a new product. It is designed to help entrepreneurs and startups validate their ideas and build a business model that is based on customer feedback.

Personal Information
Parxel Protocol is a proprietary process for creating a Minimum Viable Prototype (MVP) for a new product. It is designed to help entrepreneurs and startups validate their ideas and build a business model that is based on customer feedback.

Technical Information
Parxel Protocol is a proprietary process for creating a Minimum Viable Prototype (MVP) for a new product. It is designed to help entrepreneurs and startups validate their ideas and build a business model that is based on customer feedback.

Market Place Size
Parxel Protocol is a proprietary process for creating a Minimum Viable Prototype (MVP) for a new product. It is designed to help entrepreneurs and startups validate their ideas and build a business model that is based on customer feedback.

Parxel's Goals for Market Strategy
Parxel Protocol is a proprietary process for creating a Minimum Viable Prototype (MVP) for a new product. It is designed to help entrepreneurs and startups validate their ideas and build a business model that is based on customer feedback.



Transformational and disruptive innovation?

Brown, B. and Anthony, S. "How P&G Tripled Its Innovation Success Rate," Harvard Business Review, June 2011

Koen, P.A., Bertels, H. and Elsum, I.R., "The Three Faces of Business Model Innovation: Challenges for Established Firms," Research - Technology Management, 55, 3; 52 - 59, May - June 2011.

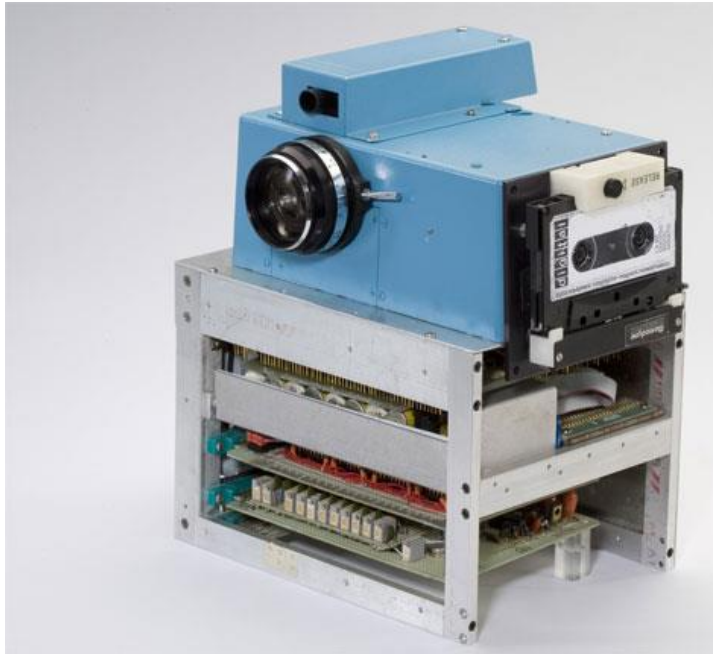
Sustaining Innovations



Transformational Innovations

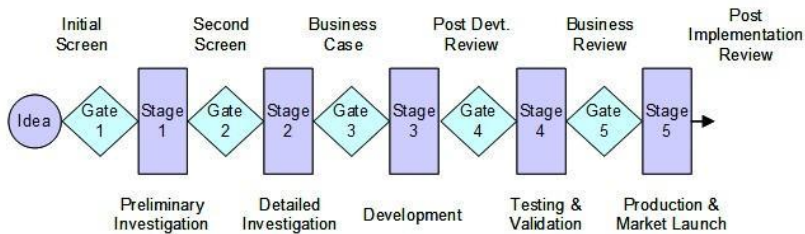


Disruptive Innovations

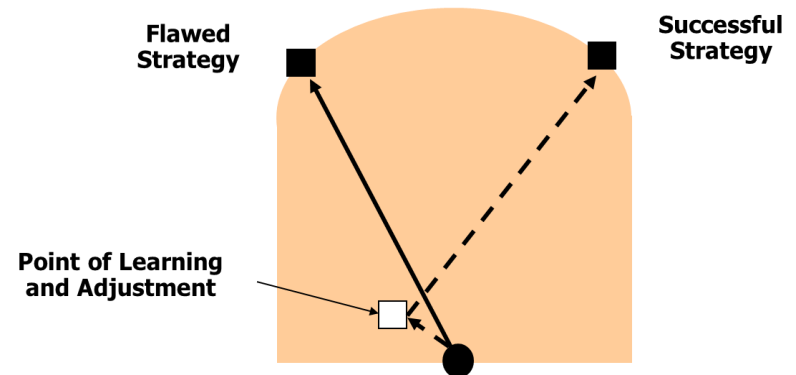


Our Hypothesis

Sustaining (Incremental)



Transformational and Disruptive



**Need to follow a
learning strategy**

Research Methodology

**Study the actual process how
large companies are using at
adopting lean startup
methodology to manage
transformational innovation**

What we found

What we found

**Sustaining
(Incremental)**

**Transformational
and Disruptive**

**← Companies were using various
elements of lean startup
across the complete spectrum →**

Examples

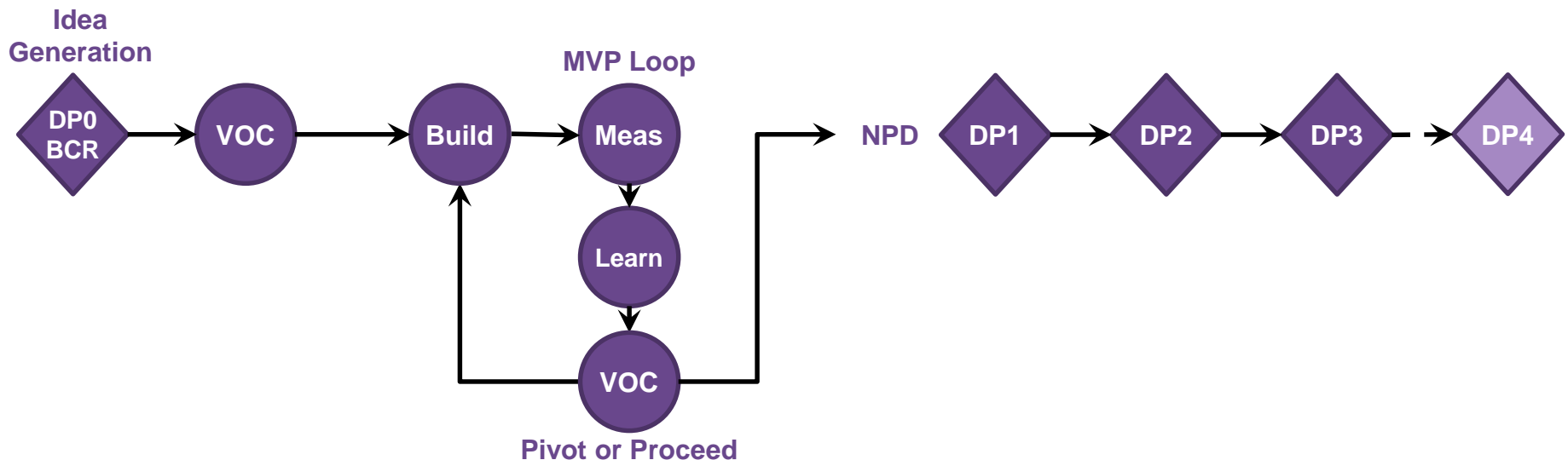
Lean applied in incremental innovations

The logo for REGAL, featuring the word "REGAL" in a bold, italicized, white sans-serif font, centered within a purple trapezoidal shape that is wider at the top and narrower at the bottom.

REGAL

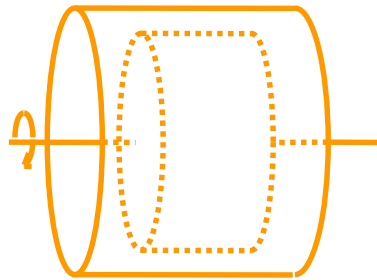
When to Use MVP

- > Iterative prototypes which collect the maximum amount of validated learning about an application with the least effort.
- > Be weary of creating any kind of process
- > Understand the question that the MVP is attempting to answer
- > Understand brand and IP risks

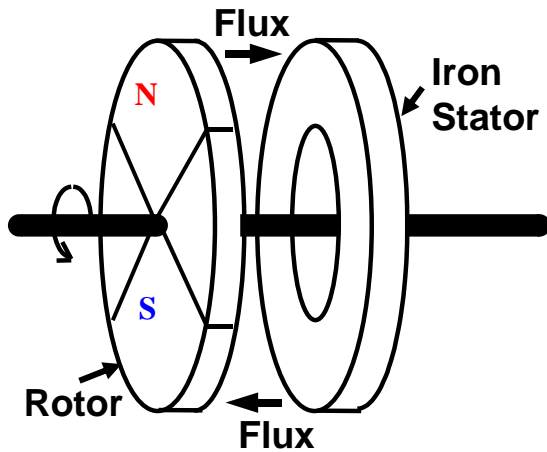
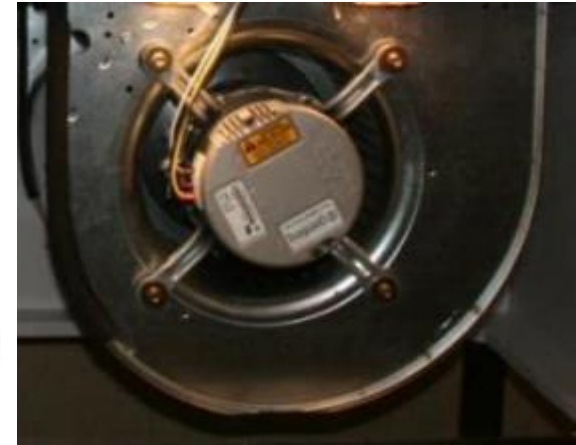


REGAL

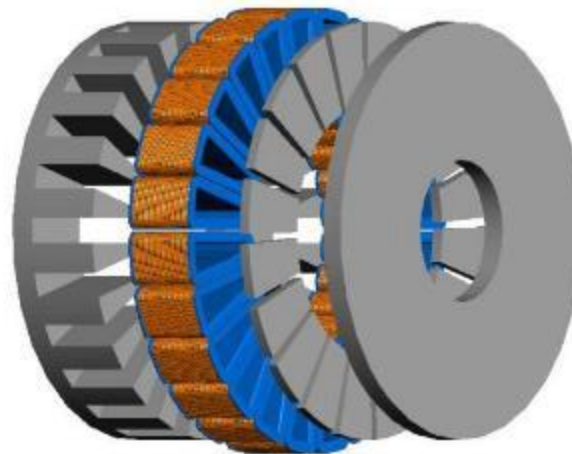
Radial Vs Axial Flux Technology



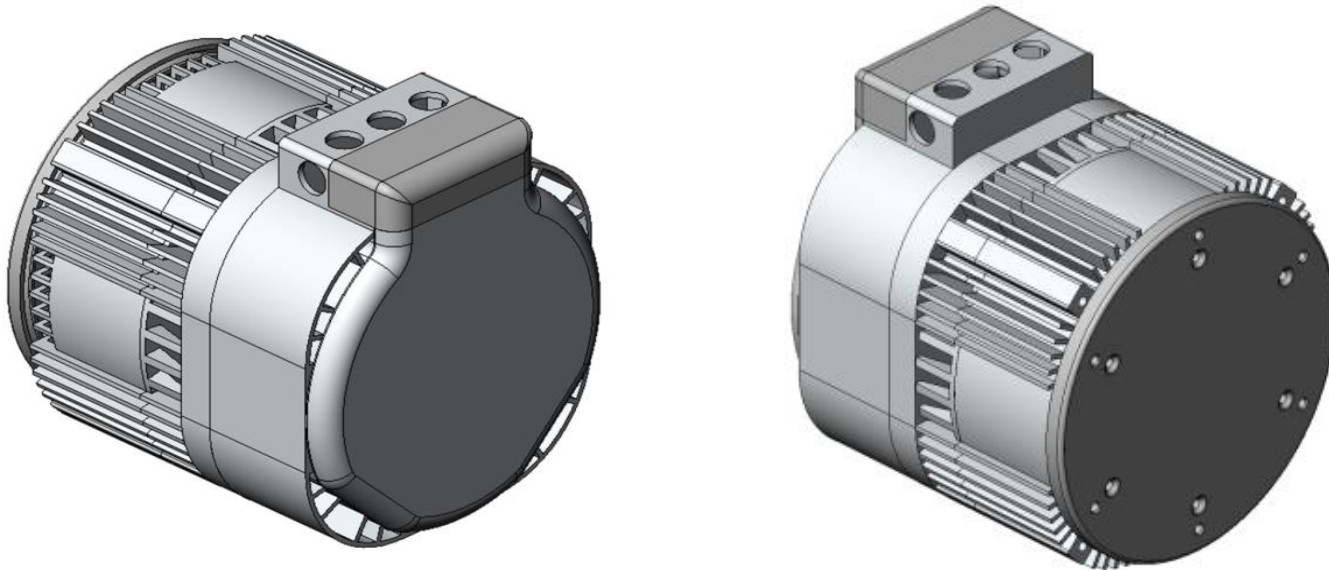
Traditional Radial Flux



Axial Flux Concept



Initial Concept

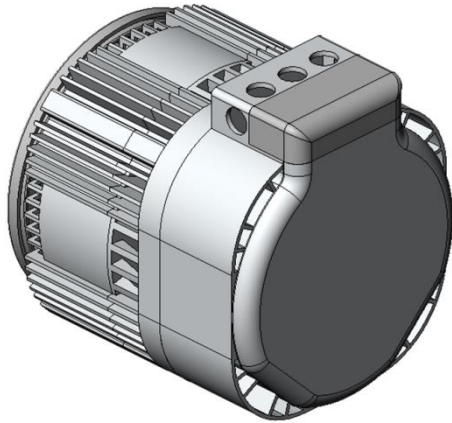


- >LOOK – it is shorter, we can just bolt your fan to a stub shaft!
- Regal – Isn't this GREAT!
- Customer – Yawn – I guess that is OK? Can it be shorter?

Frustrated Defeated Engineers

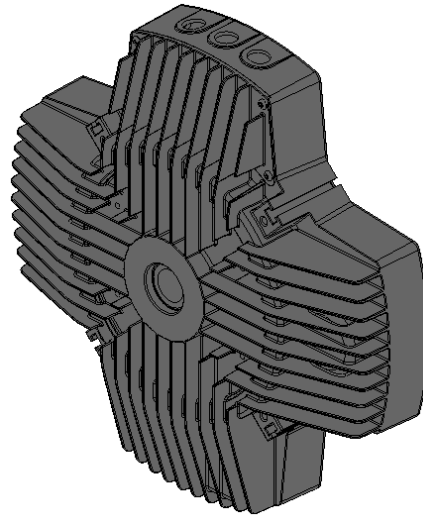
- > IT IS IMPOSSIBLE TO SATISFY THESE CUSTOMERS!!
- > Don't they understand that I have made it as short as possible?
- > I NEED room for a motor and a drive!
- > I wonder what the customer **DIDN'T SAY**???
- > Well they never said it was TOO BIG AROUND right?

MVPs at Work



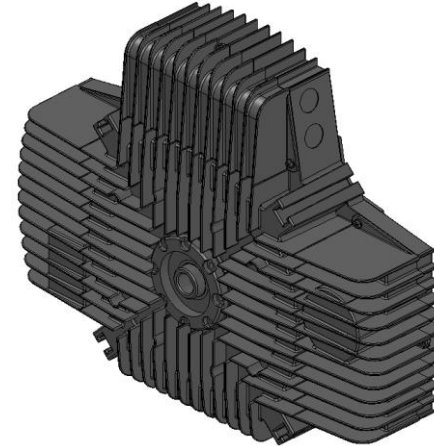
> Gen 1

- Virtual MVP
- Conventional
- Mediocre feedback



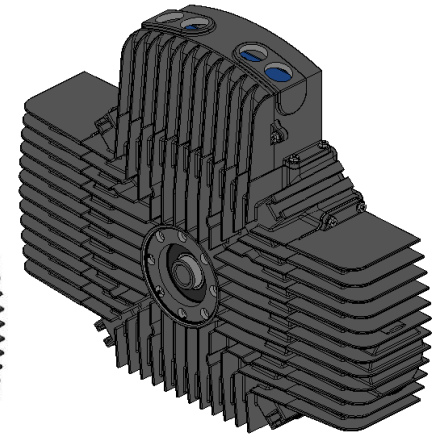
> Gen 2

- MVP's at customer
- Orbital
- Excited customers!



> Gen 3

- Virtual MVP
- Consolidated drive
- Addressed service
- Conduit entry issue



> Gen 4

- MVP in test
- Prototyping
- Addresses mfg
- Increased flexibility

> Learning quickly and moving forward

> Using virtual MVP's when possible

MVP – Lessons Learned

- > Never give up on an impossible request
- > Never self impose constraints on your design
- > Keep working until you have excited customers both internal and external
- > Take failures as suggestions and move on
- > Be extremely fast and careful about IP when involving customers this early
- > HAVE FUN!!

Customer Value

**Induction Motor,
Fan and VFD –
10hp
(>200 Pounds)**



**Regal Axial Flux Motor,
Fan and Integrated
Drive – 10hp
(~50 Pounds)**



IRI May Annual

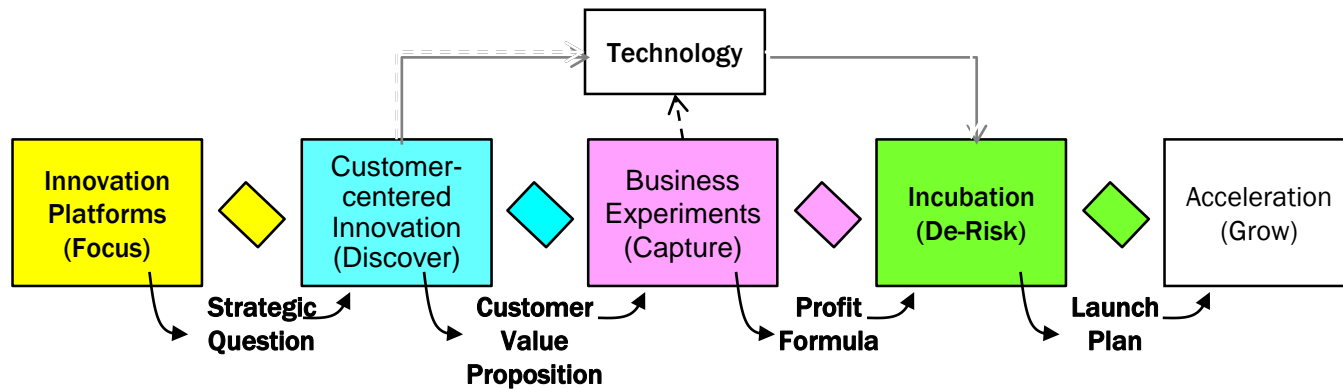
- MVP
- Business Model Up-Front
- Partnering with Competitive Start-ups
- Business Experiment
- Technical Experiments
- Incubation

Most business had MVP with a few with incubation and business model innovation

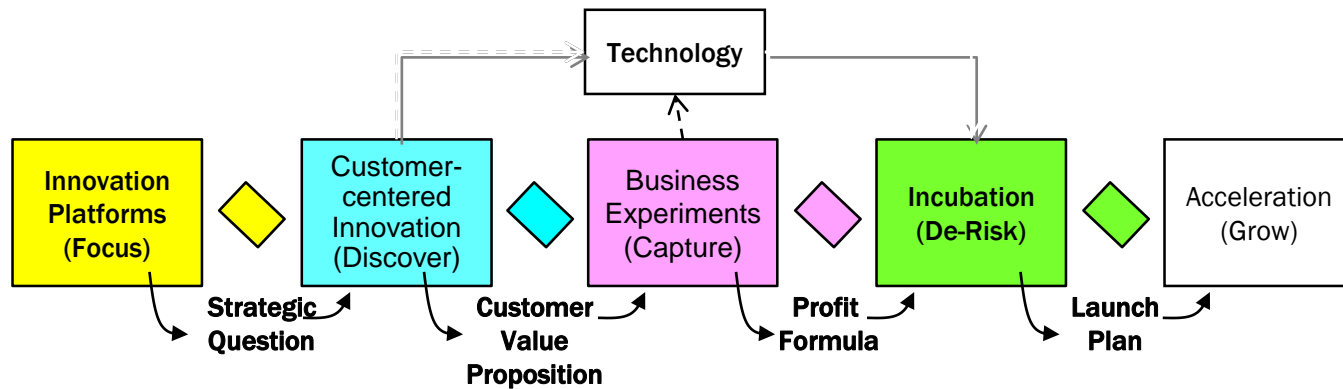
Lean applied in transformational innovations



Business Model Innovation Process



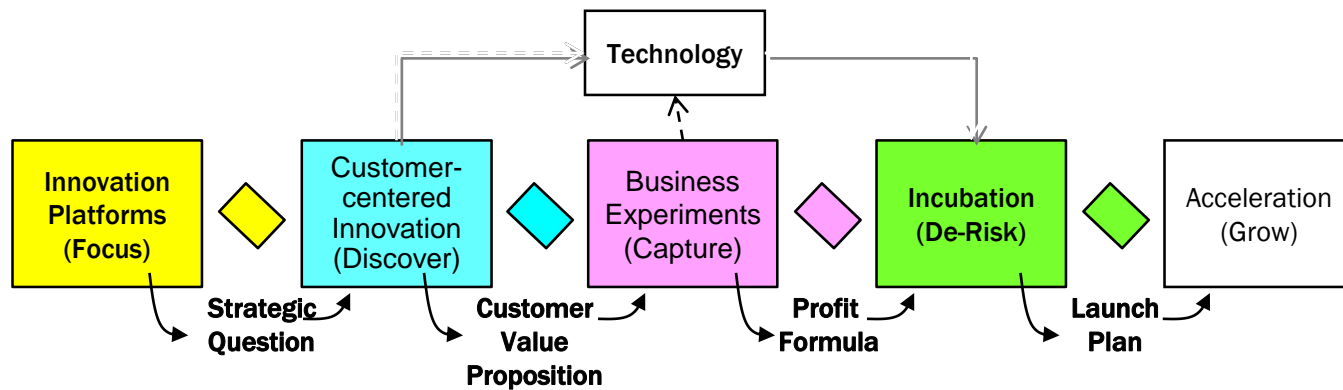
Business Model Innovation Process



Design Methods

- Observational research (on site insight)
- Prototyping
- Iteration

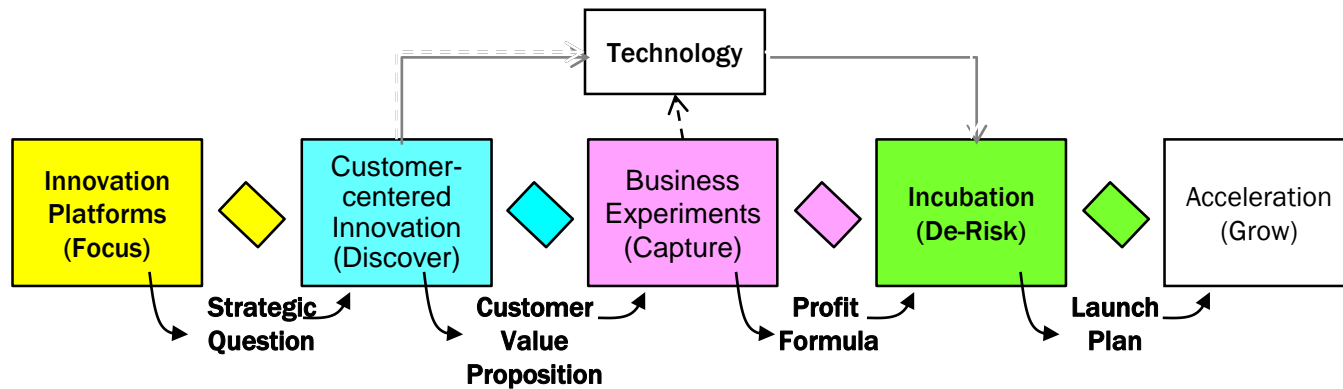
Business Model Innovation Process



Business Model Development

- Archetypes
- Stochastic modeling
- Wide Lens
- Business experiments

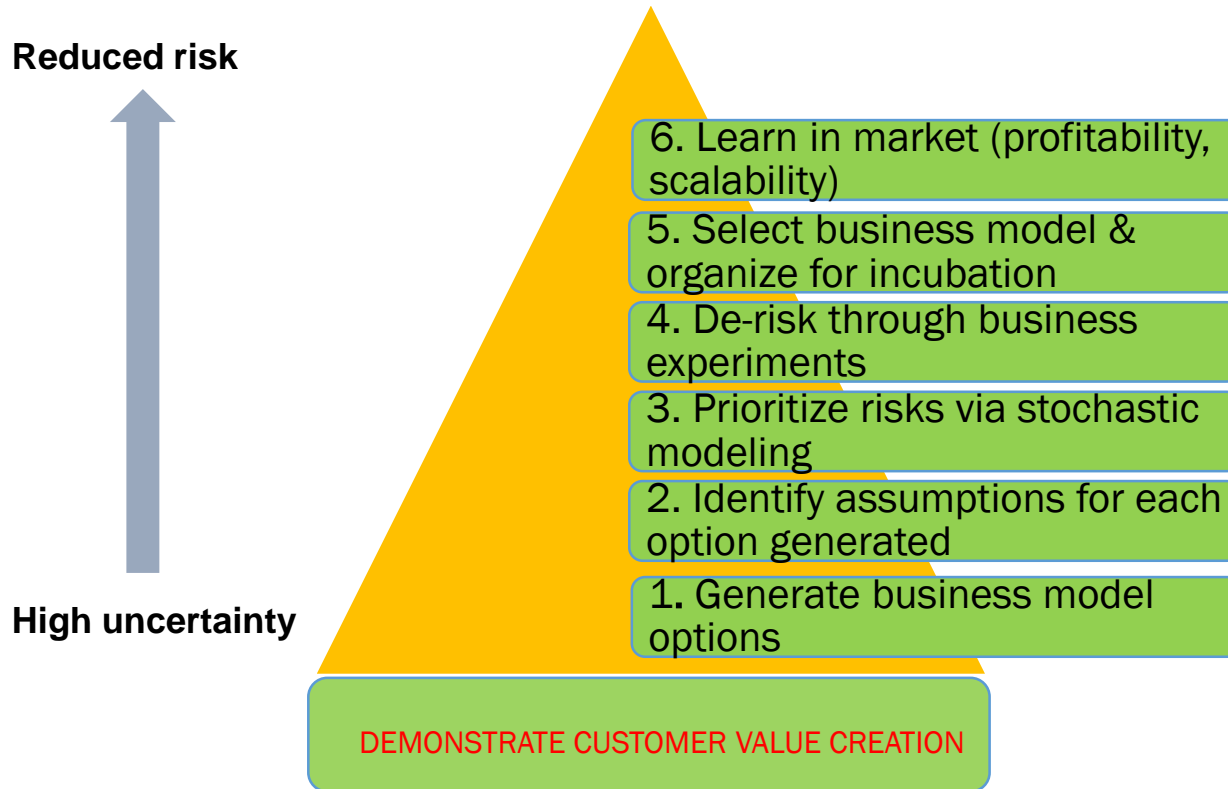
Business Model Innovation Process



Lean Startup

- In market learning
- Minimum Viable Prototypes (MVP)
- Disciplined trials

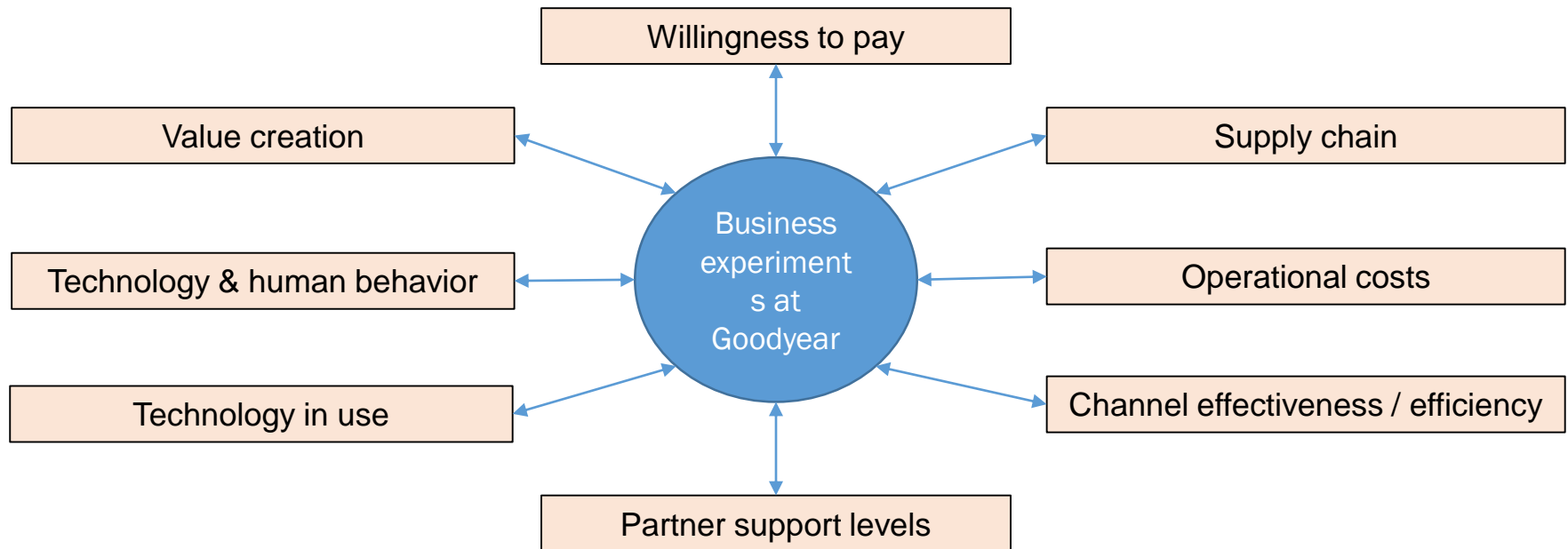
Business Model Innovation at Goodyear



- Source: Business Model Innovation in Practice – Research-Technology Management 2014

4. De-risk through business experiments

4



Business experiments should

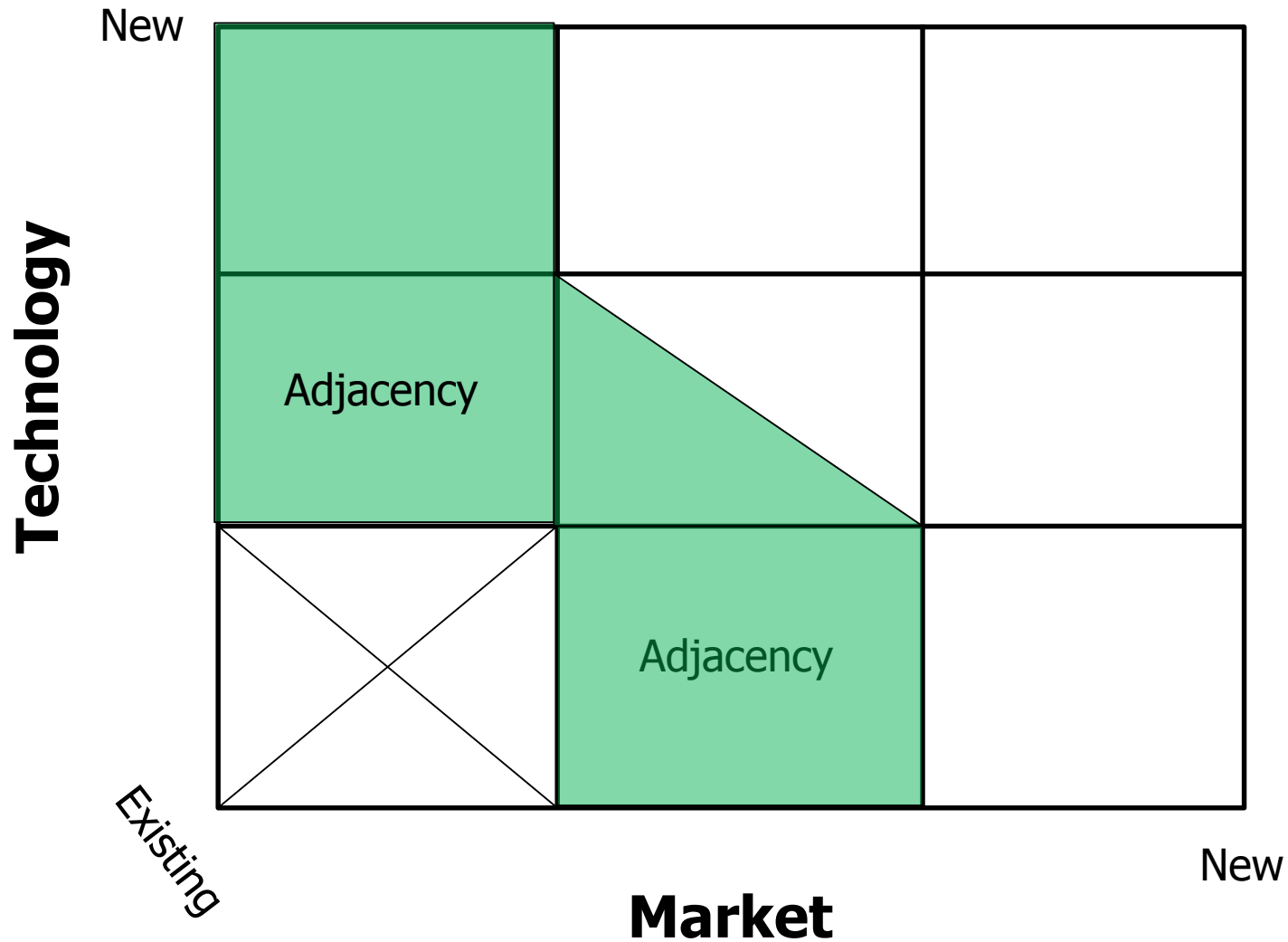
- Be out in the real world – *with* the market (not quite *in* the market)
- Have a SMART learning plan:
 - **Not SMART** : Interview consumers in a shopping mall to understand if they will buy
 - **SMART**: In the next 90 days, we will “sell” our offering to 6% of overall shopping mall traffic at a price point of \$12 per user
- Be cheap – keep the learning ahead of the spending
- Be fast
- Shed light on key unknowns

Key Messages

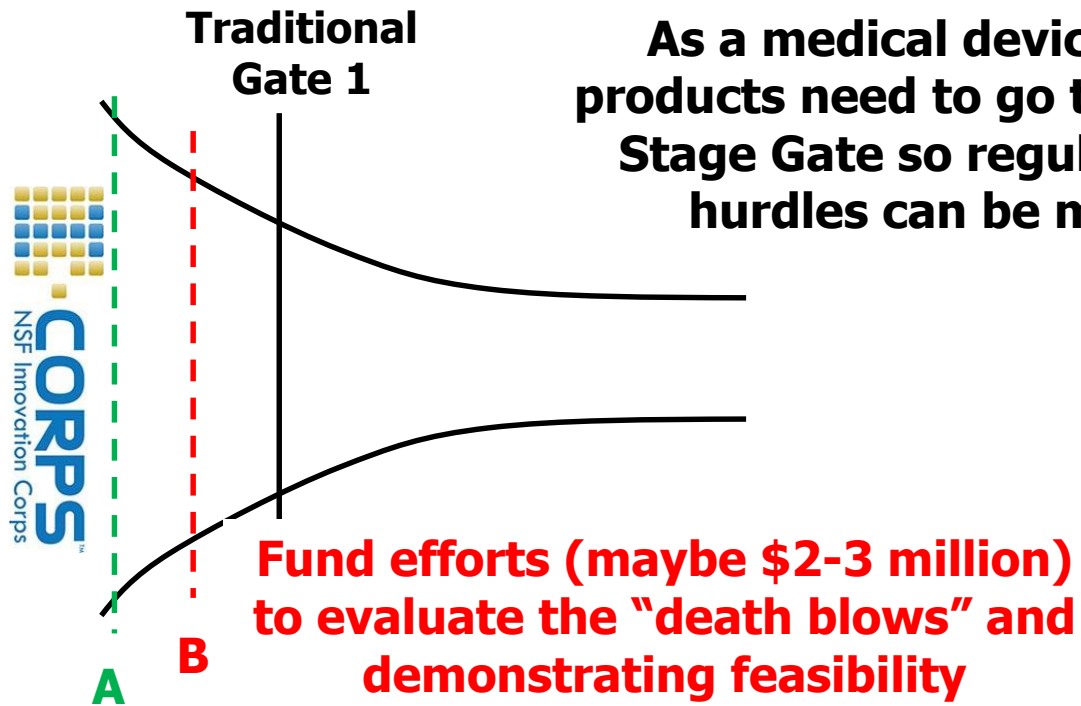
- Successful innovation starts with the *customer*
- Customers may lead you to businesses that don't match your *business model*
- To deliver new business models requires new practices, often working with *new ecosystem partners*
- Doing so effectively requires learning through *disciplined experiments*
- Conducting the experiments requires managing the relationship to the *performance engine*

Lean applied in transformational innovations

Opportunity Selection



+ 100 MM opportunity



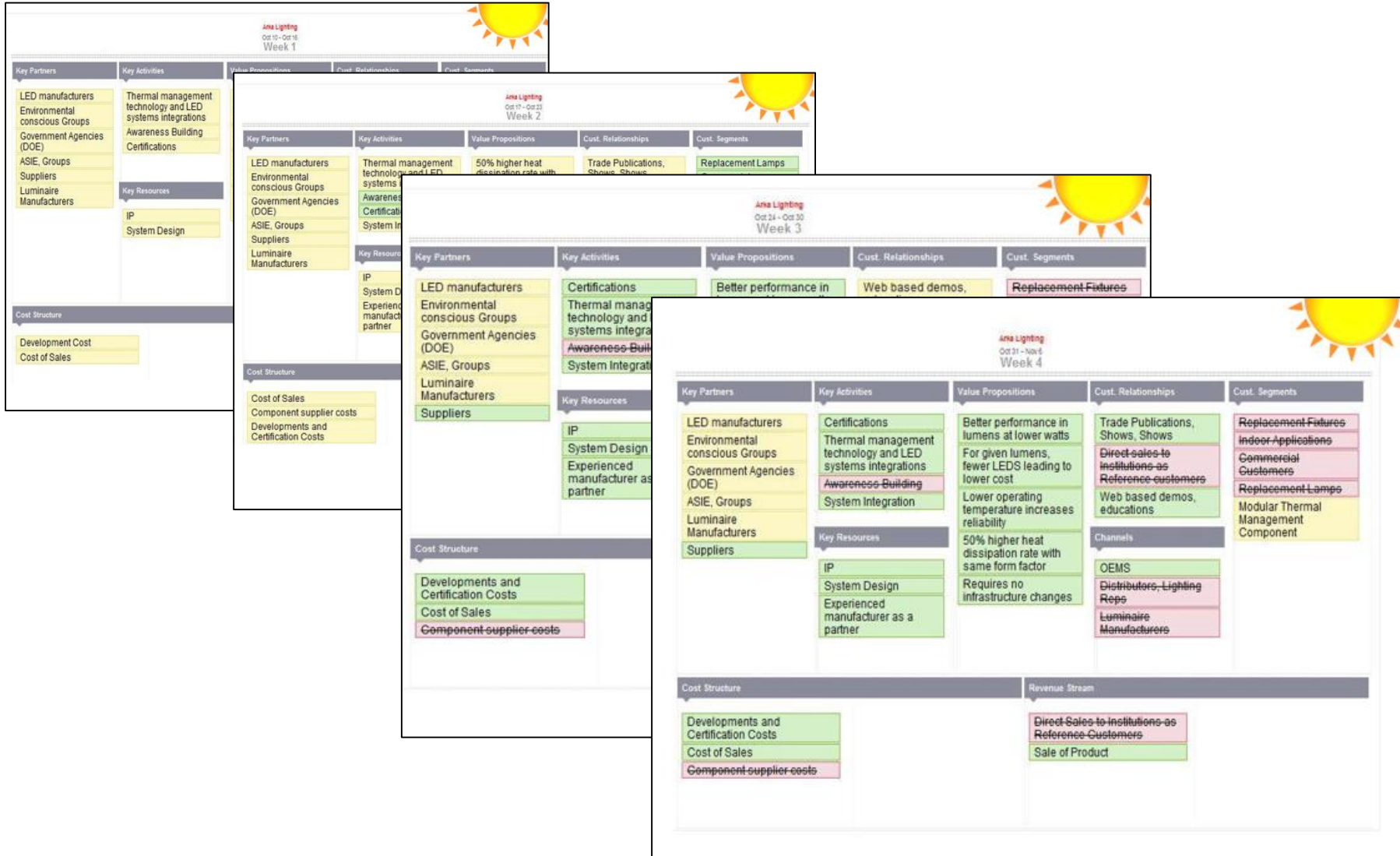
Identify 3-5 Market and/or Technical "Death Blows"

The Problem: Projects would get into NPD through "Innovation Theatre"

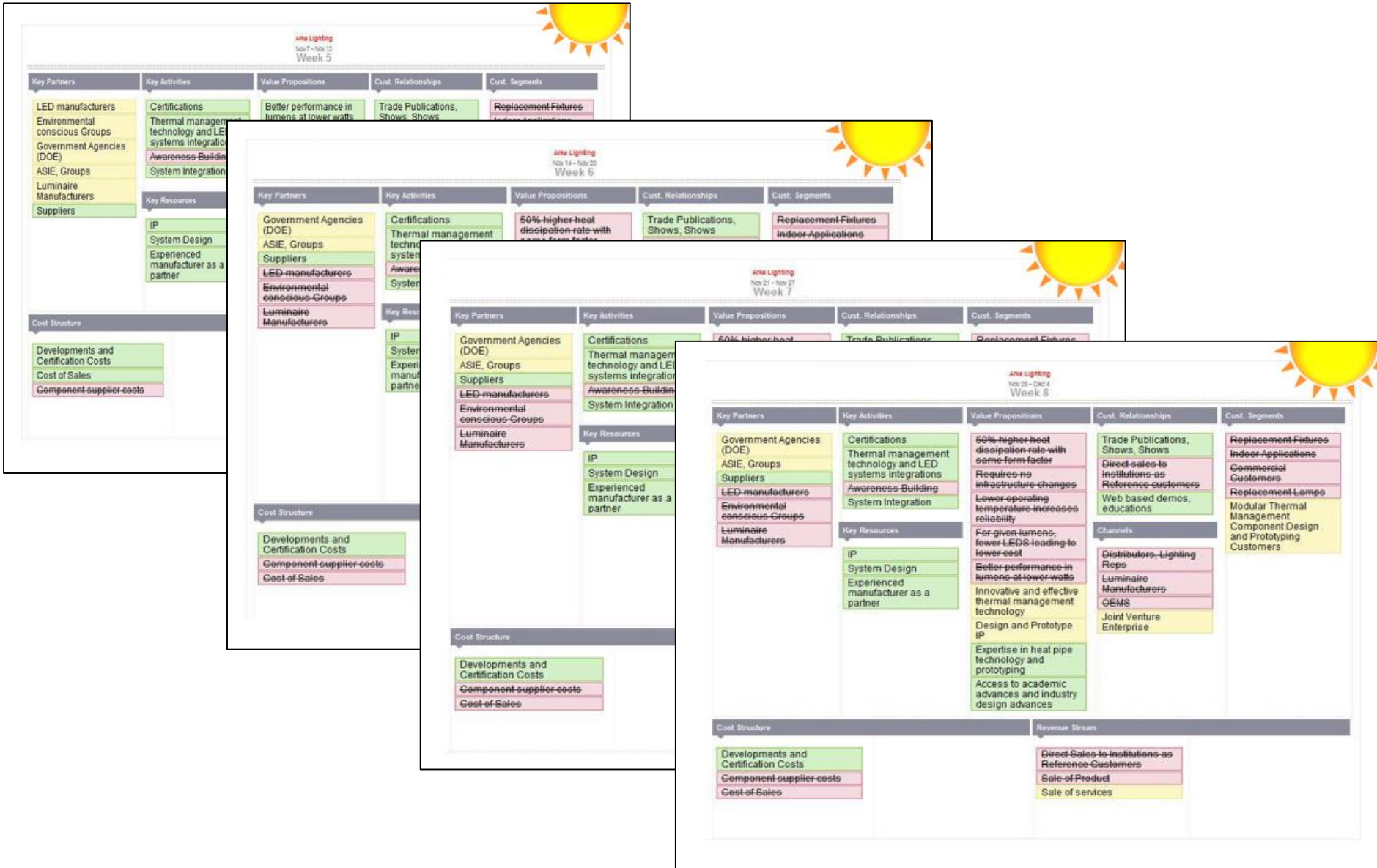
I-Corps Training

Week	Location	Lecture	Topic
Week 1	On-site	Lecture 1	Intro, Business Models, and Customer Development
	On-site	Lecture 2	Value Proposition
	On-site	Lecture 3	Customers
Week 2	Online, self paced	Lecture 4	Channels
Week 3	Online, self paced	Lecture 5	Customer Relationships Get/Keep/Grow
Week 4	Online, self paced	Lecture 6	Revenue Model
Week 5	Online, self paced	Lecture 7	Partners
Week 6	Online, self paced	Lecture 8	Resources and Costs
Week 7	On-Site	Lecture 9	Effectively Communicating Your I-Corps™
	On-Site	Lecture 10	Learning Journey Story
			Lessons Learned Presentations

I-Corp

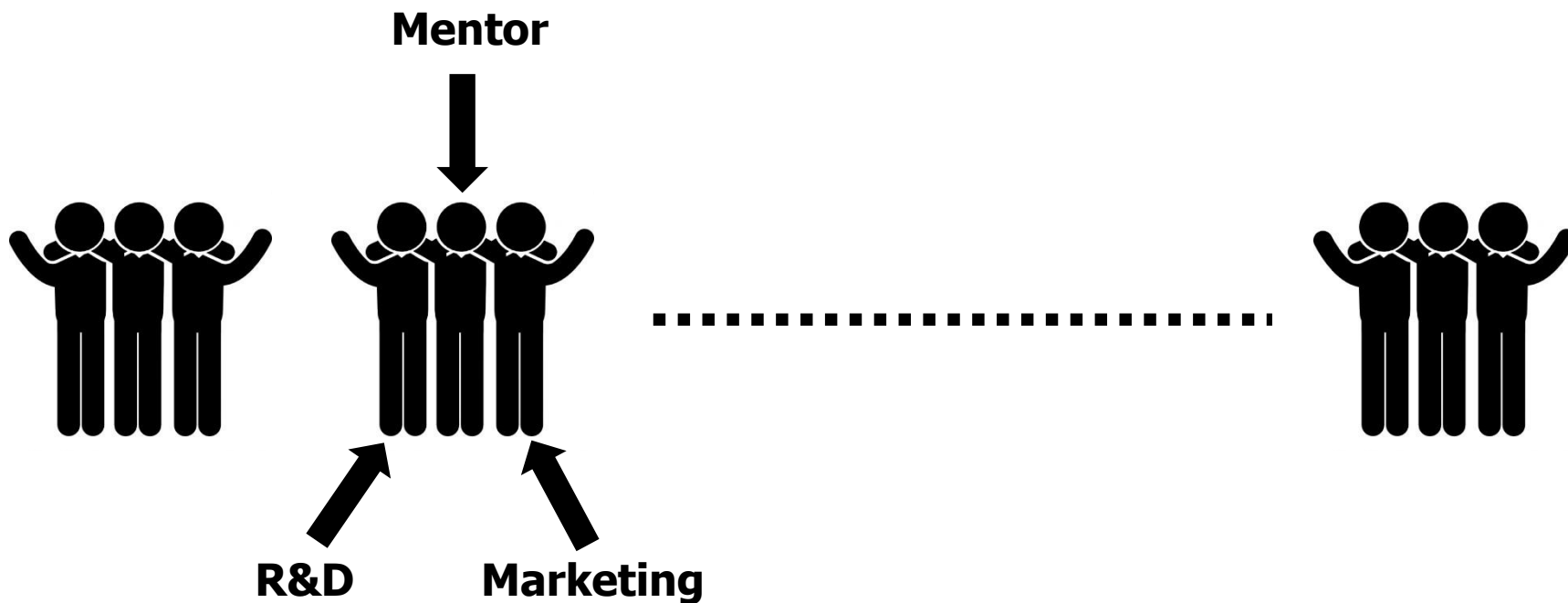


I-Corp



Training

10 teams meet once/per week for 8 weeks
(Full time commitment for R&D and marketing during the 8 weeks. Visit 100 customers.)



The Business Model Canvas

Designed for:

Designed by:

On: Day Month Year
Iteration: No.


Key Partners



Who are our Key Partners?
Who are our key suppliers?
Which Key Resources are we acquiring from partners?
Which Key Activities do partners perform?

EXAMPLES
Networks and associations
Co-branding and co-branding
Affiliates, agents and resellers
Acquisition of particular resources and activities


Key Activities



What Key Activities do our Value Propositions require?
Our Distribution Channels?
Customer Relationships?
Revenue streams?

EXAMPLES
Production
Problem Solving
Platform/Network
Logistics
Customer Service
Channel Partners
"Change the Job Description"
Design
Retail Shows
Price
Cost Reduction
Risk Reduction
Accessibility
Complementary Club Key

Value Propositions



What value do we deliver to the customer?
Which one of our customer's problems are we helping to solve?
What bundles of products and services are we offering to each Customer Segment?
Which customer needs are we satisfying?

EXAMPLES
Newness
Performance
Customization
Convenience
"Change the Job Description"
Design
Retail Shows
Price
Cost Reduction
Risk Reduction
Accessibility
Complementary Club Key

Customer Relationships



What type of relationship does each of our Customer Segments expect us to establish and maintain with them?
Which ones have we established?
How are they integrated with the rest of our business model?
How costly are they?

EXAMPLES
Personal Assistant
Dedicated Personal Assistance
Self-Service
Automated Services
Communities
Co-creation

Customer Segments



For whom are we creating value?
Who are our most important customers?

EXAMPLES
Mass Market
Niche Market
Segment of One
Micro-Sector Program

Key Areas


Key Resources



What Key Resources do our Value Propositions require?
Our Distribution Channels?
Customer Relationships?
Revenue Streams?

EXAMPLES
Physical
Intellectual (brand, patents, copyrights, data)
Human
Financial

Channels



Through which Channels do our Customer Segments want to be reached?
How are we reaching them now?
How are our Channels integrated?
Which ones work best?
Which ones are most cost-efficient?
How are we integrating them with customer routines?

EXAMPLES
1. Direct Sales
2. Retail Partners
3. Distribution Partners
4. Self-Service
5. Agent
6. Affiliate

Does not change

Cost Structure



What are the most important costs inherent in our business model?
Which Key Resources are most expensive?
Which Key Activities are most expensive?

EXAMPLES
Cost of Sales (Direct and Indirect Materials, Production Overhead)
Salaries and Benefits
Rent
Utilities
Marketing
Research and Development
Legal
Insurance
Transportation
Warehousing
Inventory
Packaging
Postage
Shipping
Travel
Office Expenses
Equipment
Software
Hardware
Miscellaneous

Revenue Streams



For what value are our customers really willing to pay?
For what do they currently pay?
How are they currently paying?
How would they prefer to pay?
How much does each Revenue Stream contribute to overall revenues?

EXAMPLES
Subscription
Usage-based
Lump-sum
Lease/rental
Commission
Advertising
Freemium
Licensing
Rental
Royalty
Sales
Service
Sponsorship
Usage-based
Lump-sum
Lease/rental
Commission
Advertising
Freemium
Licensing
Rental
Royalty
Sales
Service
Sponsorship

Filled Out – but simplistically

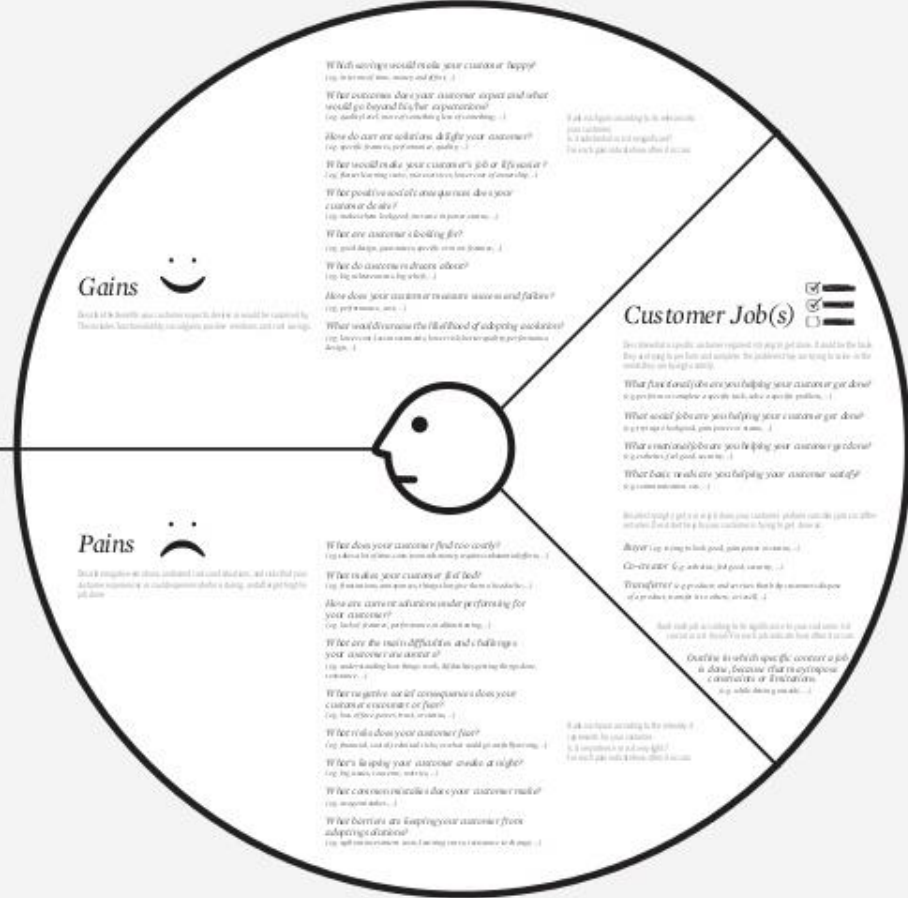
The Value Proposition Canvas

Designed for:

Designed by:

On: To: Via:

Iteration:



Value Proposition
Create one for each Customer Segment in your Business Model

Customer Segment

www.businessmodelgeneration.com



Use in Conjunction with the Business Model Canvas

Copyright of Business Model Faculty GmbH

Prototyping and Intellectual Property

- **Prototyping is typically not done during this initial stage to avoid intellectual property issues**
 - During the interview process they continue to advise the customer that they are NOT looking for a solution
 - Sometimes they will bring competitors products to aid the discussion.
 - In some cases they will use provisional patents
- **They typically will NOT file a patent until the product is complete**

Traditional Lean Start-Up



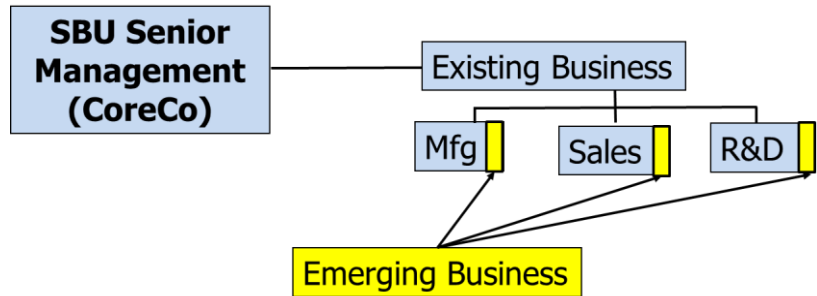
■ Organizational Structure

- Integrated vs. Separated vs. Ambidextrous

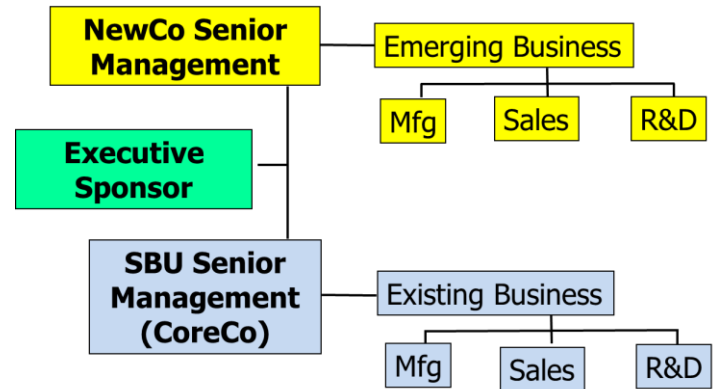
■ Senior Management

**Most large companies do not
use the correct
organizational structure for
managing transformational
innovations**

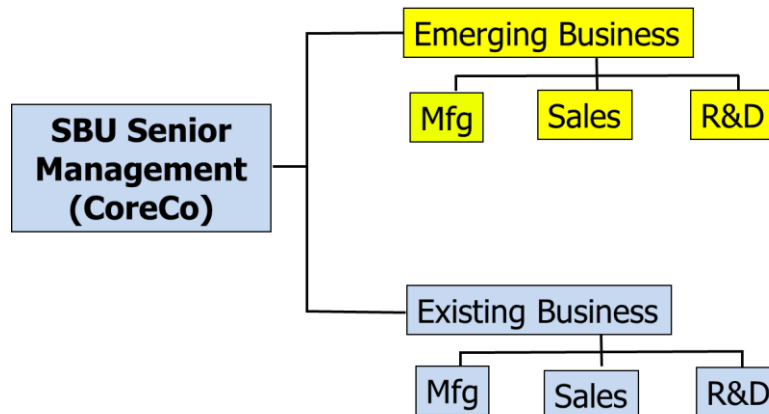
Integrated



Separated



Ambidextrous



**Ambidextrous organizations
are 90% more effective in
developing transformational
innovations than either
integrated or separated**

O'Reilly, Charles A., III, and Michael L. Tushman. "Organizational Ambidexterity in Action: How Managers Explore and Exploit." *California Management Review* 53, no. 4 (Summer 2011): 5–21.

Tushman Video: <https://www.youtube.com/watch?v=lrTxzjfFhWw>

O'Reilly Video: <https://www.youtube.com/watch?v=KOPKrECNSVE>

Conditions for an Ambidextrous Organization

- Strategic synergy between the existing and emerging business units
- Senior team that owns both the exiting and emerging business units
- Separate organizational architectures (i.e. business models, structures, incentives, metrics and cultures) between the existing and emerging business units
- Ability of senior leadership to tolerate and resolve tensions between the two units

Conclusions

- **Lean Start-Up is a powerful new learning process for developing transformational innovations**
 - Majority of companies are implementing parts across the company
 - Organizational structure and senior management commitment to transformational innovation is probably still the most critical success factor