



Why are  
transformational  
innovations so  
difficult for large and  
successful incumbent  
firms?

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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



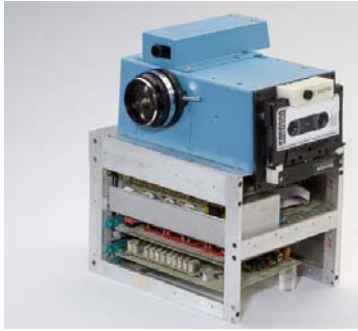
3

# Transformational Innovations



4

# Disruptive Innovations





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# You Tube

Broadcast Yourself

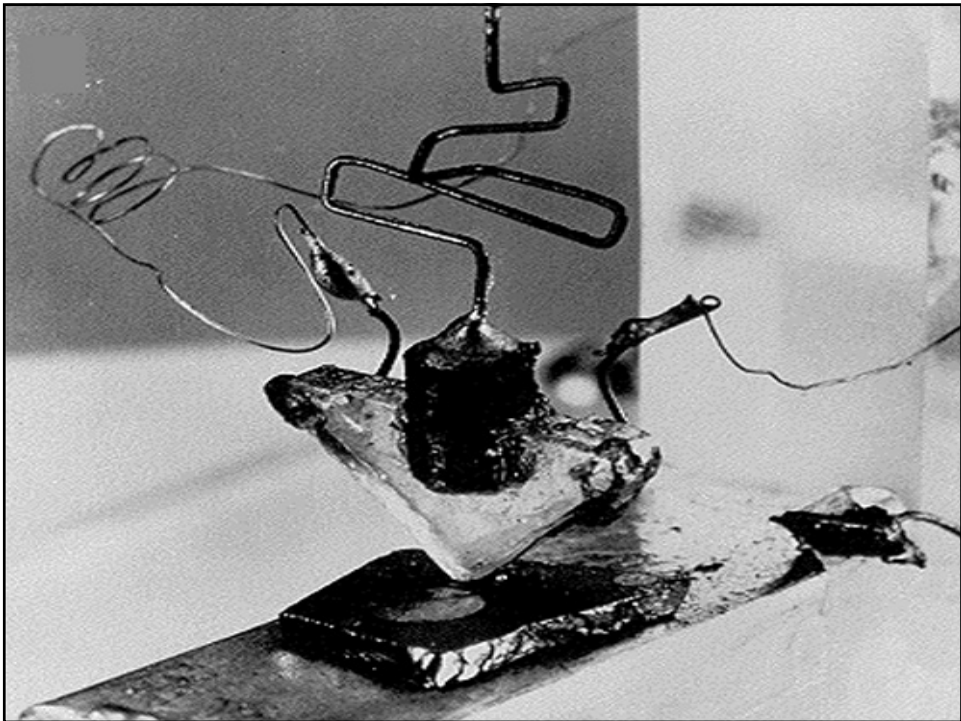
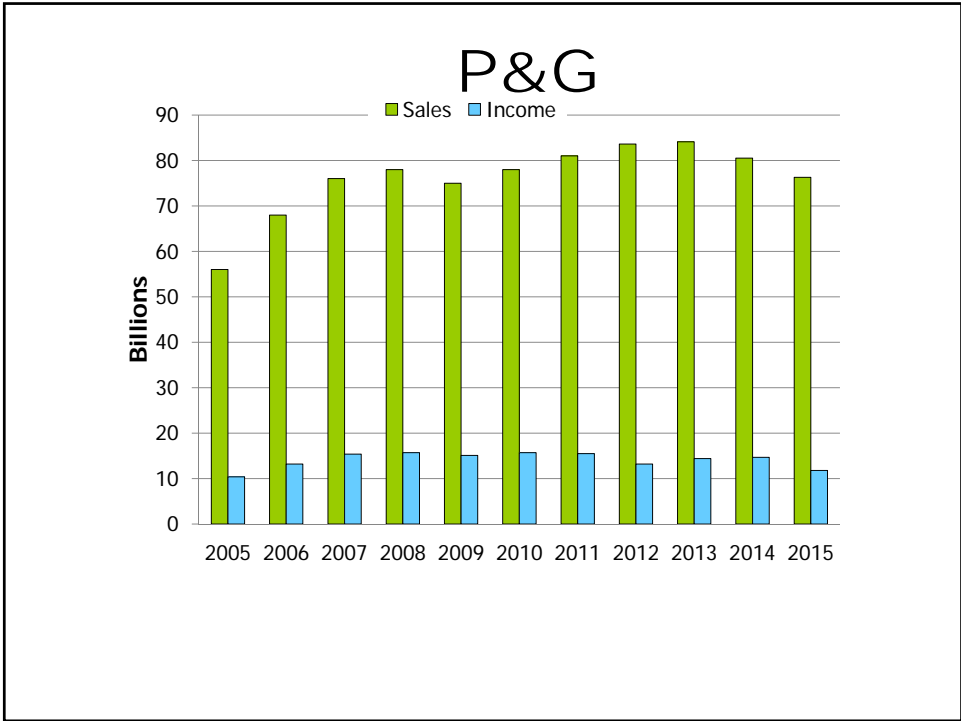




Why is it so  
difficult?

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.  
Bertels, H., Koen, P.A., and Elsum, I. "Business Models Outside The Core: Lessons Learned From Success And Failure," Draft  
at Research-Technology Management.

Large companies are  
not innovative








Be sure to ask about the side effects

OK – large companies  
are innovative  
**BUT not in developing  
new business models**



Why are new  
business models  
so difficult for  
large companies ?

4

# Business Model Rigidity

Leaders will make significant investments in transformational innovation, but **will force the solution into the sustaining business model**

Gavetti, Giovanni, "Strategy Formulation and Inertia," HBS School Case 9-705-468, January 10, 2005.





## Business Model Rigidity

**Kodak invests \$5 billion in digital  
over the next 10 years (40-50%  
of R&D budget)**





## The Church of New Finance

I. Return on net assets (RONA)	V. Earnings per share (EPS)
II. Economic Value- added (EVA)	VI. Return on Capital Employed (ROCE)
III. Gross Margin %	VII. Marginal Revenue / marginal cost
IV. Internal Rate of Return (IRR)	VIII. Thou shalt be data-driven and fact-based.

Adopted from a Clay Christensen presentation

Common methods of  
financial analysis  
systematically bias against  
high risk innovation



# IHFY

## Income in a Hypothetical Future Year


$$\text{IHFY} = (\text{Unit Volume}) \times (\text{Price}) \times (\text{Margin})$$

Goal is to estimate **3x – 10x** to determine potential  
income provides **enough value** to the firm

Presentation from John Evans, VP of Engineering and Technology, Lockheed Martin

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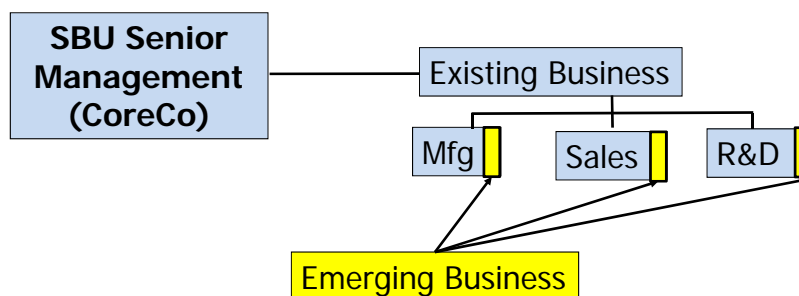


# Ambidextrous Organization

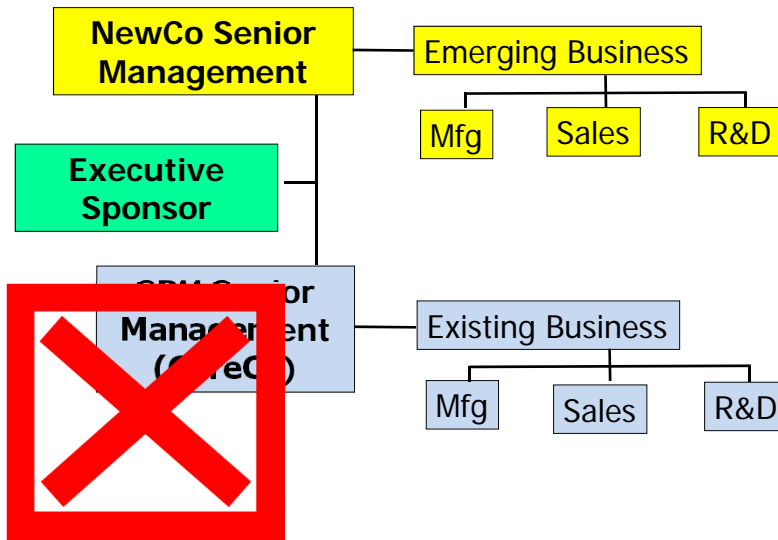
Most large companies **do not protect** transformational innovation efforts with the correct organizational

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.  
O'Reilly, Charles A., III, and Michael L. Tushman. "The Ambidextrous Organization." *Harvard Business Review* 82, no. 4 (April 2004): 74–81.

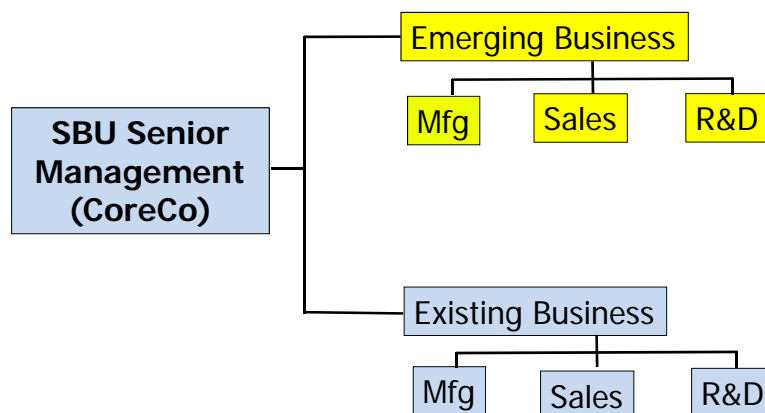
## Integrated



## Separated



## Ambidextrous

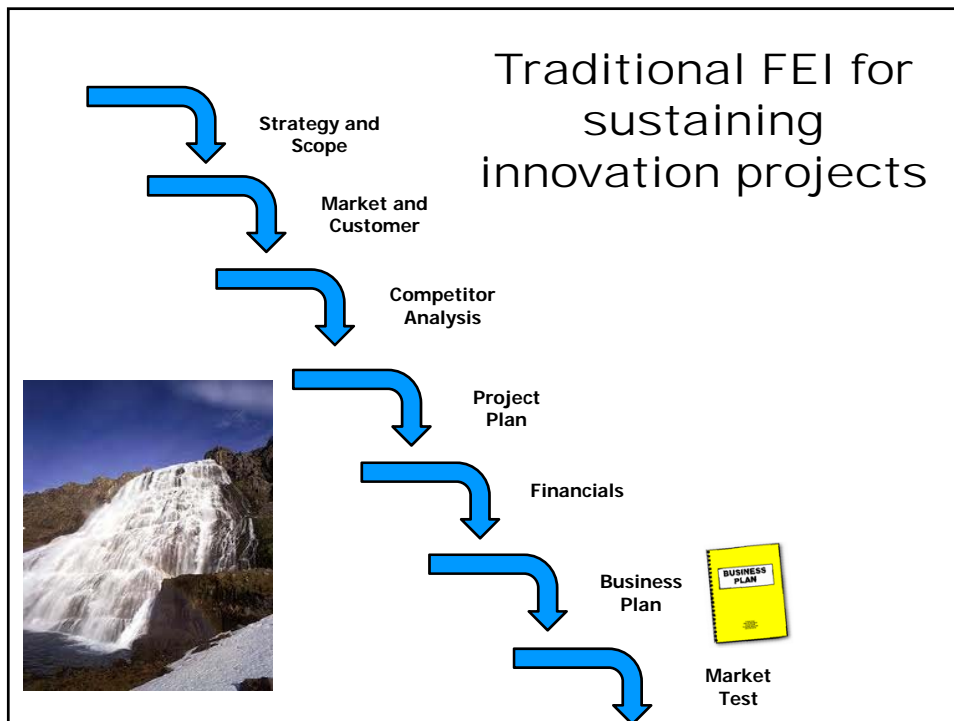


Ambidextrous organizations  
are **90% more effective** in  
developing transformational  
innovations than either  
integrated or separated

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.

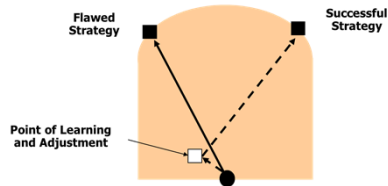
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Apply the same FEI management methods we use in sustaining to transformational innovations

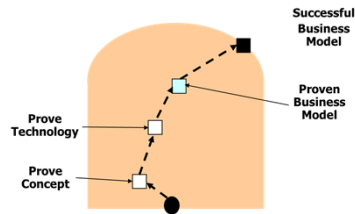


# Learning Strategy

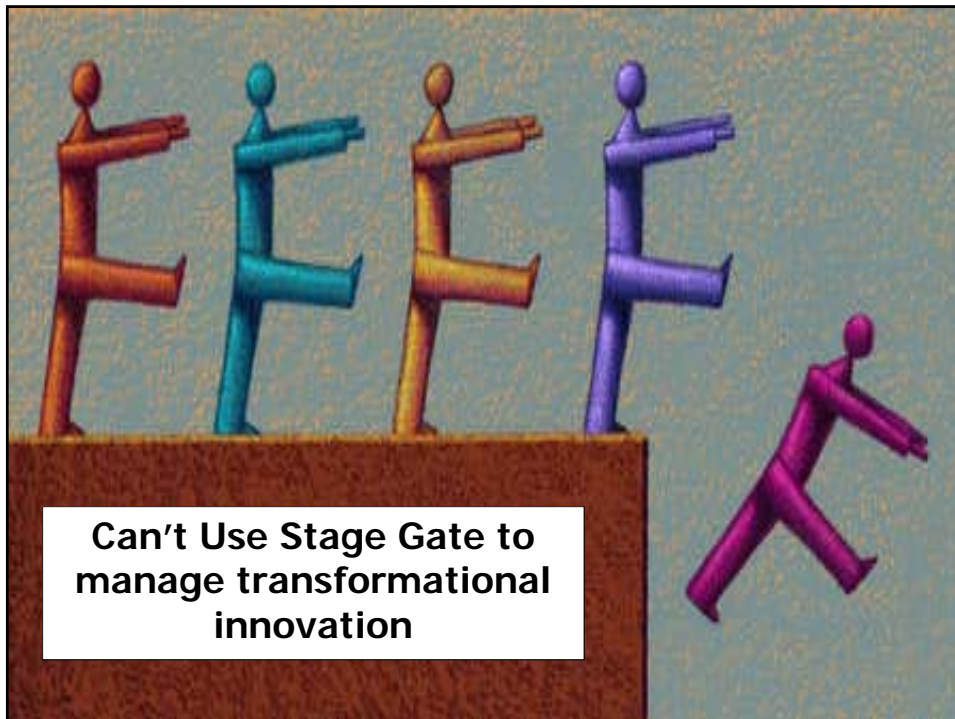
## Follow a plan to learn



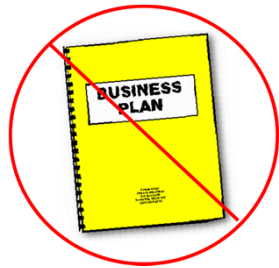
## Loop around the Basketball Court



Adopted from a Clay Christensen presentation



“No business plan survives  
the **first contact with the  
customers**”

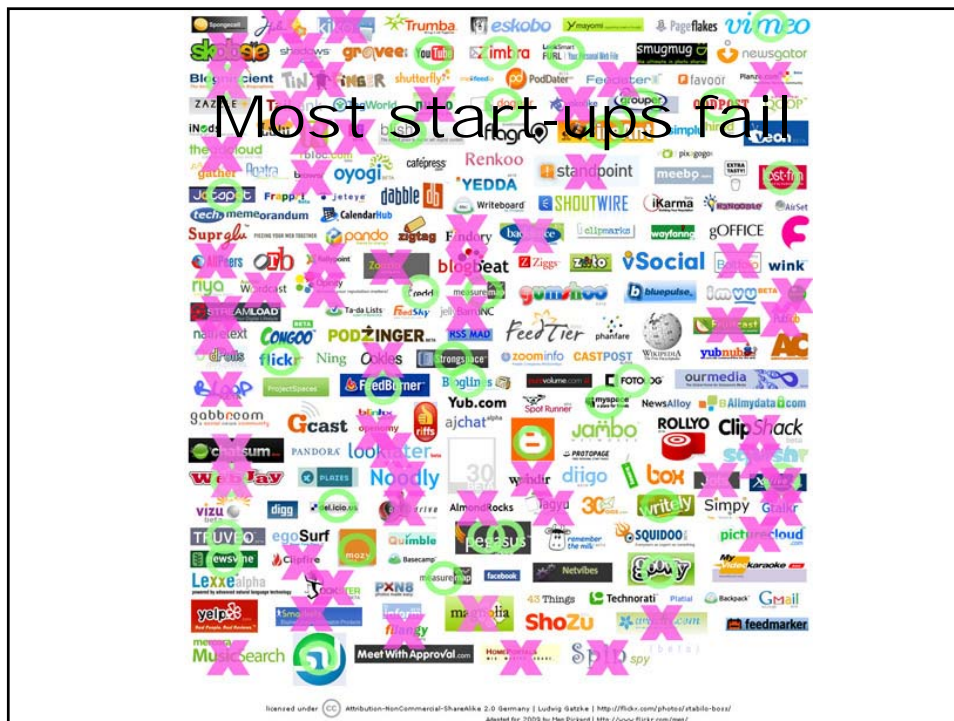


Adopted from Blank and Dorf, The Startup Owner's Manual, KS Ranch, 2012

Business plans are  
valuable in **sustaining  
businesses** – when you  
can **execute** on the plan

# Some facts from start-ups

45



**And the ones that  
succeed change their  
original business  
model **66%** of the time**

.....Quoted from Ash Maurya

90% of transformational  
innovation projects  
**change their business  
models 4 times** before  
they "get it right"

Adopted from Mark Johnson, author of Seizing the White Space, HBR, 2010





Sustaining businesses **execute** a  
business model, transformational  
innovations **search** for one

Adopted from a Steve Blank presentation

The true product of the  
transformational  
innovation effort is the  
**business model NOT the  
solution**



# Lean Start-Up

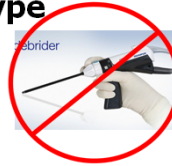
## Business Model

PROBLEM FORMULATED AS A POV	CUSTOMER/CONSUMER CIRCUMSTANCE	SOLUTION ATTRIBUTES	SOLUTION	KEY RESOURCES
What is the customer/ consumer "Job"?	How can we define...	What attributes do we need to deliver to the customer?	What is the devised product and/or service that delivers on the key...	What are the key resources needed to deliver the CVP - people, technology, partners...

## Very early customer/user visits



## Minimum Viable Prototype



CUSTOMER VALUE PROPOSITION (CVP)			OPERATING MODEL	
PROBLEM FORMULATED AS A POV	CUSTOMER/CONSUMER CIRCUMSTANCE	SOLUTION ATTRIBUTES	SOLUTION	KEY RESOURCES
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Uses the **business model** as a converging tool for **brainstorming** for transformational **business hypothesis**

RISKS AND ASSUMPTIONS
What are the top three risks and assumptions?

## 2. Early and abundant customer visits

We often wait too long to talk with customers

Adopted from Blank and Dorf, The Startup Owner's Manual, KS Ranch, 2012

3. **VERY EARLY**, fast low fidelity prototyping

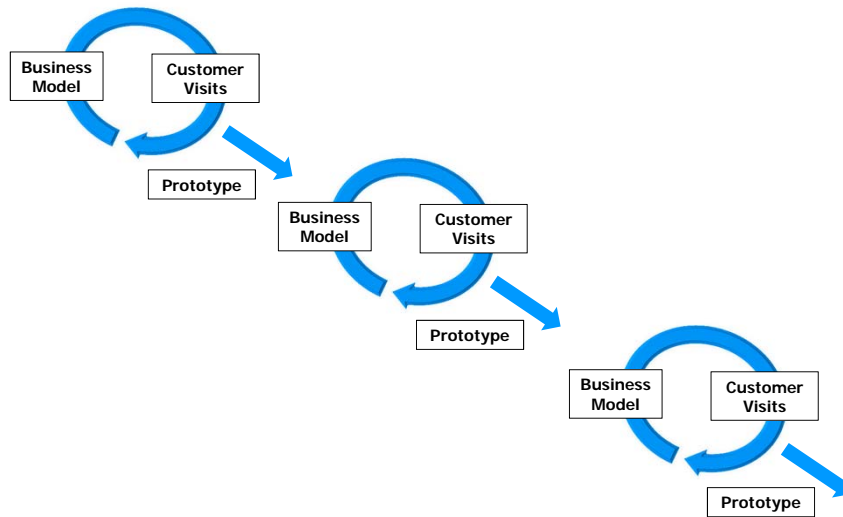
Show this



Don't wait for this



## 4. Rapid Learning



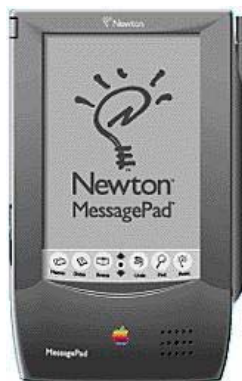
Experiences with  
large corporations

*5*  
*Lessons*  
*Learned*

**All of the companies**  
struggled with getting to the  
**right problem**

Many innovations fail **not because of a fatal flaw** in the innovation itself, but because the company **fails to understand the problem they are solving**

Newton: Enamored by technology. **PC in your pocket.** Not what functions are needed by mobile user





**Segway: A transportation device  
for everyone NOT for someone.**

**Not determining which users  
have a problem requiring the  
attributes of a Segway**



Google Glass: **A mobile device for everyone.** Not determining which users have a problem requiring it

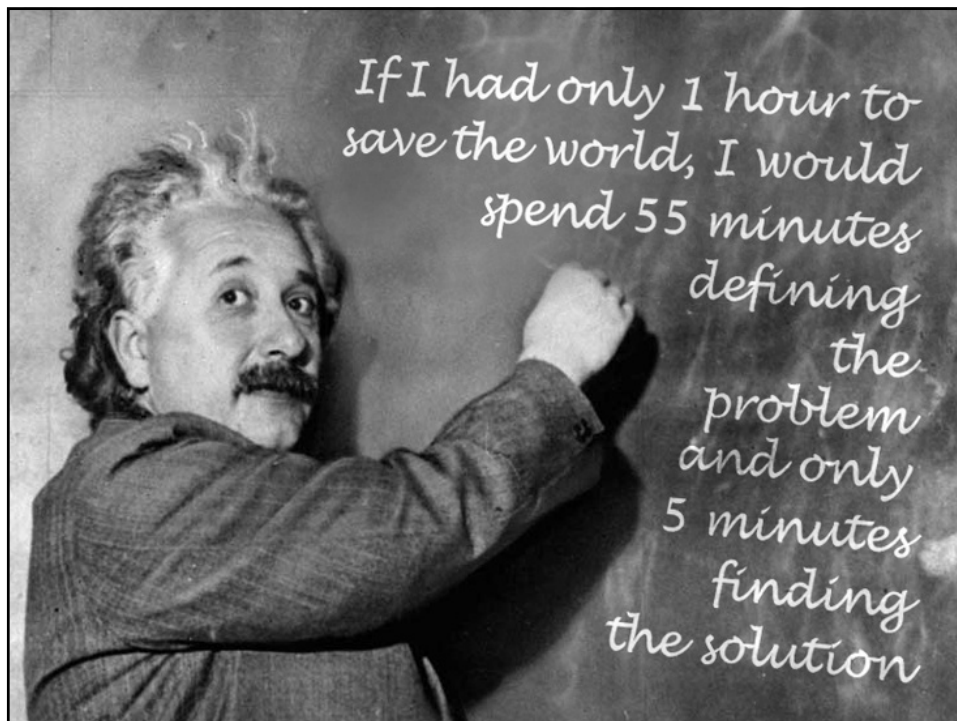
GLASS



“....Google didn’t improve Glass in **specific ways for an application to attract users** from a target market to buy Glass. In the end, by trying to be a **“cool tool” for everyone** Glass ended up being something nobody really needed”

-Forbes, Feb 12, 2015, Adam Hartung

Apple Watch: What **problem** are they trying to solve and for **whom**?





Incubators for 3rd  
world rural regions



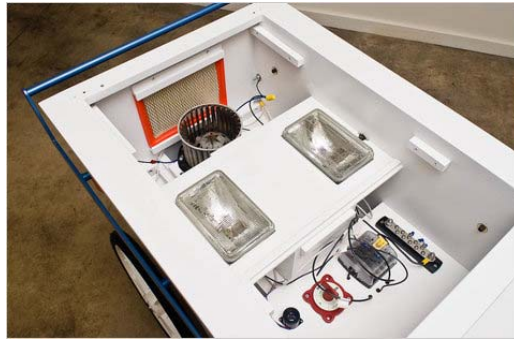
## Is this the problem?

**Rural clinics** in India, Bangladesh, Nepal, Cambodia and Indonesia

need **a much lower cost** and maintenance free incubator

so that they can **prevent premature babies from dying.**

## Neonature Incubator



## Is this the problem?

**Desperate parents** living in remote villages **without electricity** and are far from clinics

**needs** the means to give her **dying baby**

**a chance to live**



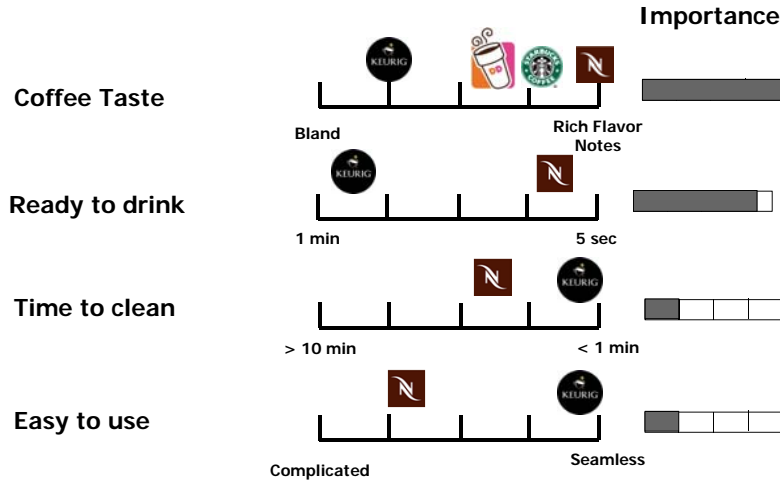
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## Confuse solution attributes with the solution



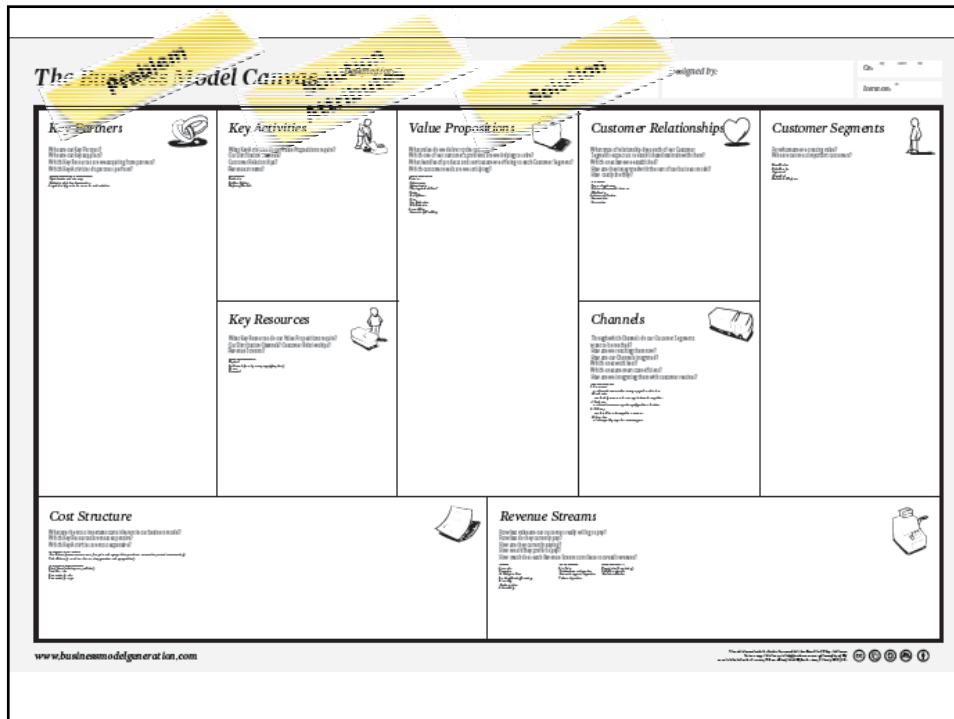


# Solution Attributes Map



3

# Osterwalder's Business Model Canvas **does not work** in the FEI for transformational innovations





**The Business Model Canvas**      Designed for: \_\_\_\_\_      Designed by: \_\_\_\_\_      Co. \_\_\_\_\_      Date: \_\_\_\_\_

<p><b>Key Partners</b></p> <p>Who are our key partners? Which partners are essential to our business model? Which partners do we depend on? Which partners do we depend on? Which partners do we depend on?</p>	<p><b>Key Activities</b></p> <p>What key activities do our value propositions require? What key activities do our value propositions require? What key activities do our value propositions require? What key activities do our value propositions require? What key activities do our value propositions require?</p>	<p><b>Value Propositions</b></p> <p>What value do we deliver to the customer? What value do we deliver to the customer? What value do we deliver to the customer? What value do we deliver to the customer? What value do we deliver to the customer?</p>	<p><b>Customer Relationships</b></p> <p>What type of relationship do we build with our customers? What type of relationship do we build with our customers? What type of relationship do we build with our customers? What type of relationship do we build with our customers? What type of relationship do we build with our customers?</p>	<p><b>Customer Segments</b></p> <p>Who are our target customer segments? Who are our target customer segments? Who are our target customer segments? Who are our target customer segments? Who are our target customer segments?</p>
<p><b>To use as a brainstorming tool each item on the canvas MUST be distinct and explicit</b></p>				
<p><b>Cost Structure</b></p> <p>What are the major cost drivers in our business model? What are the major cost drivers in our business model? What are the major cost drivers in our business model? What are the major cost drivers in our business model? What are the major cost drivers in our business model?</p>		<p><b>Revenue Streams</b></p> <p>How do our customers pay for the value we deliver? How do our customers pay for the value we deliver? How do our customers pay for the value we deliver? How do our customers pay for the value we deliver? How do our customers pay for the value we deliver?</p>		

www.businessmodelgeneration.com

# FEI Canvas



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

Developed specifically for large companies

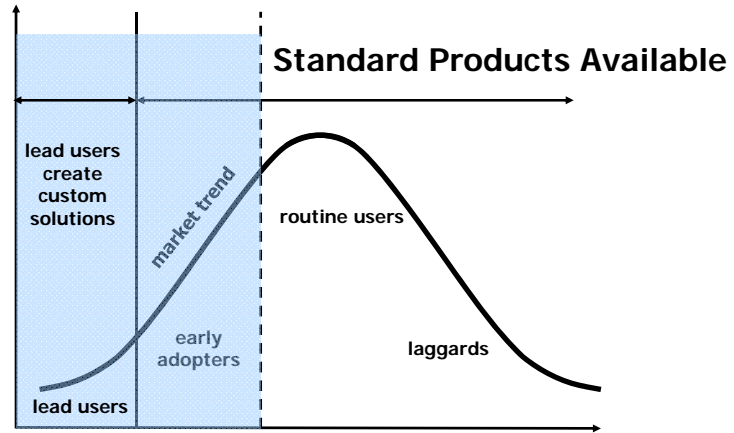
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**FEI teams focus on  
the wrong customers**

People who need new product



91



92

5

**Most envision the prototype  
as a fully featured solution**



The initial prototype is often  
much more minimum than  
you think



Courtesy of IDEO





5

*Implementation  
Lessons Learned*

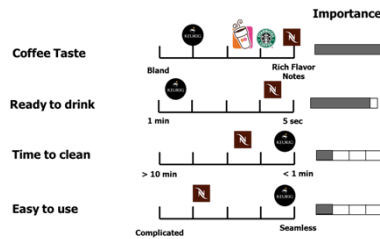
Focus on the problem you  
are solving

Reframe it as a POV

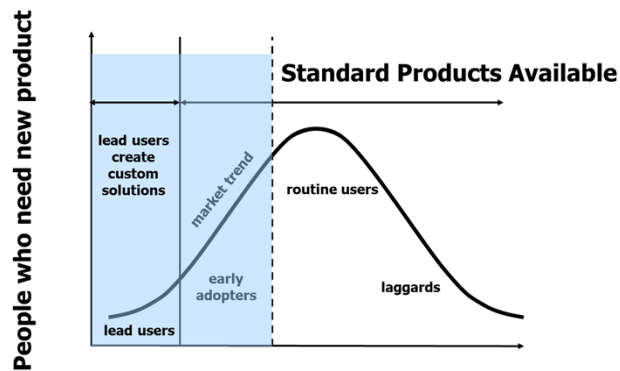
Don't confuse the solution with the solution attributes



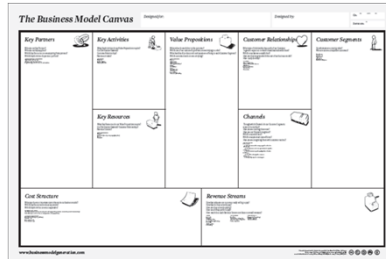
### Solution Attributes Map



Focus on lead users and early adopters NOT routine users



# Use the FEI<sub>canvas</sub> for transformational innovations



Sustaining

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<b>PROBLEM FORMULATED AS A POV</b> What is the customer's customer 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".	<b>CUSTOMER/CONSUMER CIRCUMSTANCE</b> How can we define customer's consumer, in terms of who they are and their circumstance and in the form of personas?	<b>SOLUTION ATTRIBUTES</b> What attributes do we need to deliver to the customer? Which of our customer problems are we solving with these attributes?	<b>SOLUTION</b> What is the derived product and/or service that delivers on the key customer attributes?
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Transformational

Embrace very early prototyping as a collaborative and communication tool



**Information**  

[www.frontendinnovation.com](http://www.frontendinnovation.com)

**Lean startup**