



**PRETOTYPE LABS LLC**

**PRETOTYPING**



MAKE SURE YOU ARE BUILDING **THE RIGHT IT** BEFORE YOU BUILD **IT** RIGHT

# **QUICK REVIEW OF PRETOTYPING TECHNIQUES**

**(PRETOTYPE VERSION – FOR REVIEW PURPOSES – DON'T REDISTRIBUTE)**

**Alberto Savoia**

**PRETOTYPE LABS LLC**

Name	Description	Example	
<b>Fake Door</b>	Test the Initial Level of Interest (ILI) in a yet-to-be-developed product or service by creating artifacts that suggest that the product exists and it's available to see if people would buy it.	Would anyone order <b>McSpaghetti</b> at a McDonalds? Don't cook a single strand of pasta! Put McSpaghetti on the menu (either in a store or online if applicable) and see if anybody orders it. If someone orders it, say that it's not currently available, apologize and offer them a free burger instead.	
<b>Facade</b>	Test the Initial Level of Interest (ILI) in an existing but not yet broadly available/scalable product or service by creating artifacts that suggest greater availability (or scale.)	Would people buy used cars online (in late 90s)? Bill Gross bought some ads in a newspaper advertising <b>CarsDirect</b> , a new way to buy cars online. He had no car inventory, but created a simple website to see if people would actually go for it. When people clicked on a "buy" button, he bought the car at retail and delivered it to the customer. Over a week-end he sold a few cars. He lost money on every transaction, but validated the business model for his idea.	
<b>Pinocchio</b>	Create a non-operational version of your product and use your imagination to pretend that it actually works to see if and/or how you would use it.	Jeff Hawkins created a wooden version of the <b>Palm Pilot</b> to test two key hypotheses: 1) Would I carry something with this form factor (i.e. pocket-sized) around? 2) What would I use it for? He learned that the form factor was just right and that he would use it primarily for calendar, address book and simple note taking.	
<b>Mechanical Turk</b>	Before making a major investment in designing and building a complex mechanism or back-end, consider using human skills to simulate the desired outcome.	IBM tested if and how people would interact with a <b>speech-to-text</b> computer by simulating the actual hardware and software using a hidden typist. The users, were given a microphone and a monitor but no keyboard; when text appeared on the screen they thought that their commands were being processed by a computer, not a person.	
<b>YouTube</b>	Through the "magic of movies" you can make products that don't yet exist come to life and see how people react to them: Are they intrigued? Interested? Will they sign up to learn more or, better yet, commit to buy?	<b>Google Glass</b> was first introduced to the world via a YouTube video that showed not what the actual glasses looked like, but what the world would look like through the glasses. People who found the vision (pun intended) of Google Glass compelling had an opportunity to sign up and pay \$1,500 to receive an "Explorer Toolkit." This way, before producing a single consumer-ready Glass, Google was able to gage Initial Level of Interest (ILI) and gain other valuable feedback.	
<b>Provincial</b>	Before committing to launch a new product or service formally and publicly on a large scale, test it in a smaller, more private and informal context to see if people are interested in it.	<b>BestBuy</b> pitched a tent in <u>one</u> of their store parking lots and advertised locally for a new service (tentatively named NextPlay) to see if people would be interested in swapping old electronic gear in exchange for store coupons. It worked, and the service is now available in all stores (and not in tents!)	
<b>One-night Stand</b>	Offer a prototype version of you product or service on a very limited time basis to see if there is any interest before making any long-term commitments.	Sacrificing their own apartment for one night, <b>Airbnb</b> founders created a simple website in which they offered an alternative to hotel rooms: An air-mattress + simple breakfast for \$80/night (a bargain in San Francisco.) Much to their surprise, 3 people signed up very quickly and they collected \$240 on their first night. Airbnb is now valued at over \$10B!	
<b>MVP</b>	Create a first iteration of your product with the <i>absolute minimum</i> set of features that would make it valuable and useful—at least to early adopters.	The first version of the <b>iPhone</b> did not support cut-and-paste, it offered a very limited number of apps, it did not support notifications or the über-popular Microsoft Exchange email back-end; and it required iTunes to activate/use it. But people wanted it so much that they did not care about the missing functionality—a great indicator of interest.	
<b>Infiltrator</b>	Take advantage of the customer traffic in an existing store (brick-and-mortar or online) to stick an artifact of your idea (it could be a one off, even an empty box) on the shelves to see if people would buy it.	With a used employee shirt bought on eBay to look like an <b>IKEA</b> worker, Upwell Labs' founder sneaked in a few prototypes of his new product into an IKEA store and put them on display to see if people would buy them. They did! He proved that his new product would sell in a store ... without owning a store.	
<b>Impostor</b>	Use an existing product or service as a starting point for your new product. Most new products or services are not completely new and different from existing ones. Many times there are other products and services that are close enough and, with some work, can be used to <i>impersonate</i> the new product you have in mind.	<b>Tesla's</b> Elon Musk took an existing car (a Lotus roadster) that was close enough to the all-electric roadster he had envisioned, ripped off the internal-combustion engine, put an electric engine in it (along with slightly different body) and drove it around. Now he had an artifact, a really sexy and fast one, to show around. People were obviously interested in the new car; but would anyone be interested enough to buy one? He needed data not opinions. So he asked people who expressed interest if they were interested enough to write him a \$5,000 deposit check to be on the waiting list for one.	

# Fake Door Pretotype

## Basic concept

Test the Initial Level of Interest (ILI) in a yet-to-be-developed product or service by creating artifacts that suggest that the product already exists and it's available.

## Examples

Would anyone order **McSpaghetti** at a McDonalds? Don't cook a single strand of pasta! Put McSpaghetti on the menu and see if anybody asks for it. If someone orders it, say that it's not currently available, apologize and offer them a free burger instead.



Would people be interested in a **Michael Bolton action figure**? Before you invest in creating even a single prototype version. Create a one-page website with an "Order Now" button. Buy some online ads for the product, measure how many people click on the ad and how many click the "Order Now" button. If people click on "Order Now" apologize and say it's currently unavailable.




Love Michael Bolton?  
[www.MichaelBoltonDoll.com](http://www.MichaelBoltonDoll.com)  
 Awesome 12" action figure of your favorite singer. Only \$19.95!





## Notes

The Fake Door requires very minimal investment and can give you a good indication of *Initial* Level of Interest very quickly. But if you are troubled by tricking potential customers with a product that does not exist yet, you should use a Facade pretotype. Always remember to use follow the appropriate laws and your own sense of ethics when pretotyping. For example, don't use a Fake Door to pretotype a medicine or cure that does not exist.

# Facade Pretotype

<p><b>Basic concept</b></p>	<p>Test the Initial Level of Interest (ILI) in an existing but not yet broadly available/scalable product or service by creating artifacts that suggest greater availability (or scale.)</p>	
<p><b>Examples</b></p>	<p>Would people buy used cars online (in late 90s)? Bill Gross bought some ads in a newspaper advertising <b>CarsDirect</b>, a new way to buy cars online. He had no car inventory, but created a simple website to see if people would actually use it to buy used cars. When people clicked on a “buy” button, he bought the car at retail and delivered it to the customer. In the first week-end he sold four cars. He lost money on every transaction, but validated the business model for his idea.</p> <p><b>Zappos</b> tested the viability of selling shoes online in a similar way to CarsDirect: No inventory, no warehouses, limited exposure until it was able to confirm that people would buy shoes online as long as they didn’t have to pay for shipping back and forth if they did not fit or did not like them.</p>	 
<p><b>Counter Example</b></p>	<p>In the late 90s, at the beginning of the Internet, online grocery delivery service <b>WebVan</b> assumed that “if we built it, they will come,” so they invested over \$100M to build warehouses, stock them full of food, bought a fleet of deliver vans, ... and discovered that they had greatly over-estimated the level of interest in the service. OUCH! Should have pretotyped it!</p>	
<p><b>Notes</b></p>	<p>Unlike the Fake Door, the Facade pretotype actually delivers the product to the customers, so it’s more ethical and preferable ... but requires a bit more investment and, potentially, losing some \$ on every transaction. But, as the old American Express commercial used to say: “Cost to run Facade pretotype: \$xxxx. Actual customer insight: Priceless.”</p>	

# Pinocchio Pretotype

<p><b>Basic concept</b></p>	<p>Create a non-functional version of your product and use your imagination to pretend that it's functional to see if and/or how you would use it.</p>	
<p><b>Example</b></p>	<p>Before investing millions of \$ and months to prototype the <b>Palm Pilot</b>, Jeff Hawkins invested a couple of bucks and a couple of hours and created a wooden version of the Palm Pilot to personally test a two key hypotheses:</p> <ol style="list-style-type: none"> <li>1) Would I carry something with this form factor (i.e. pocket-sized) around?</li> <li>2) What would I use it for?</li> </ol> <p>He learned that the form factor was just right and that he would use it primarily for calendar, address book and simple note taking. The Palm was a huge success and the form factor became the form factor for all smart phones that followed.</p>	
<p><b>Counter Example</b></p>	<p>At about the same time as the Palm Pilot, <b>Apple</b> came out with the <b>Newton</b>. With an impractical form factor (too big) and way too many features (e.g. hand-writing recognition) that didn't work well. The Newton was one of Apple's rare and most notable flops.</p>	
<p><b>Notes</b></p>	<p>The Pinocchio pretotype works best to convince yourself, not others, that your idea is on the right track. You can use the power of <i>your</i> imagination to complete your vision, but it may be hard to get others to do the same. Jeff Hawkins interacted with his own pretotype <i>pretending</i> that it was fully functional. He was tapping with a chopstick on a piece of wood with a paper sleeve, but he used his mind to fill in the blanks and realized that if the device functioned as he imagined it would be very useful to him and, potentially, others.</p>	

# Mechanical Turk Pretotype

**Basic concept**

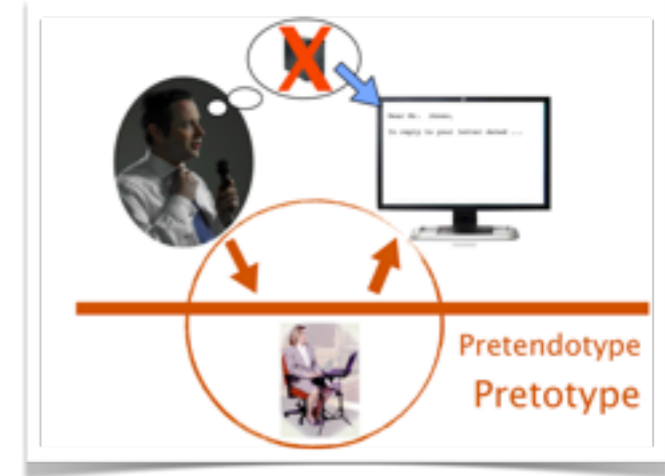
Before making a major investment in designing and building a complex mechanism or back-end, consider using human skills to simulate the desired outcome.

**Examples**

Some four decades ago, before committing to invest \$100Ms to develop speech-to-text technology, IBM was able to validate if and how people would interact with a computer via speech by replacing actual speech-to-text hardware and software with a really fast typist that listened to a user commands via a pair of headphones.

The users, were given a microphone and a monitor but no keyboard; when text appeared on the screen they thought that their commands were being processed by a computer, not a person.

IBM learned that, even if they made speech-to-text technology as fast and accurate as a great typist, for most computer uses, people found it difficult, cumbersome and tiring to speak instead of typing. 40 years later, the computer keyboard is still *The Right It* – who would have guessed?



Today are now very comfortable with ATM (Automated Transaction Machines) taking our checks and giving us money. But if you wanted to test that hypothesis before building actual ATMs, you could have used a Mechanical Turk pretotype: Hide a human being inside a mock-up ATM to take checks, push out cash, etc.



**Notes**

Software developers want to write code. Hardware developers want to build stuff. But everyone prefers to work on product that are successful—products that people use. So before writing a line of code, or soldering some electronic components together, use a Mechanical Turk to validate your idea and vision quickly and cheaply.

# The YouTube Pretotype

## Basic concept

Through the “magic of movies” you can make products that don’t yet exist come to life and see how people react to them: Are they intrigued? Interested? Will they sign up to learn more or, better yet, commit to buy?

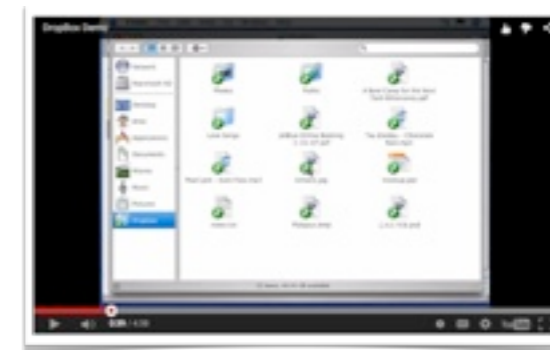
## Examples

**Google Glass** was first introduced to the world via a YouTube video that showed not what the actual glasses looked like, but what the world would look like through them. People who found the vision (pun intended) of Glass compelling had an opportunity to sign up and pay \$1,500 to receive an “Explorer Toolkit.” The toolkit was available in very limited quantities, so people had to make a strong case for why they were “worthy” of being among the first to experiment with it. This way, before producing a single consumer-ready Glass, Google was able to gage *Initial Level of Interest (ILI)* and gain other valuable feedback.



Note that this pretotype only revealed ILI in Glass. Google produced limited quantities and learned that the *Ongoing Level of Interest (OLI)* was not high enough to make it a consumer product. People wanted it at first, but soon tired of it.

Cloud-based document sharing company **DropBox** introduced their concept with a mostly mocked-up video animation that showed how their service would eventually work (once it was fully developed and ready to scale) and the end of the video, people had an opportunity to sign up to be early adopters. They showed the video at a conference and when 1,000s of people signed up, they confirmed that there was a high *Initial Level of Interest* and went ahead to further develop the product.



## Notes

The YouTube pretotype is great for making your vision visible to others. Instead of describing your ideas in words, you can show it in action to help people “get it!”. It’s a great tool to help you validate and calibrate the *Initial Level of Interest* without writing a single line of code or building any hardware.

# The Provincial Pretotype

## Basic concept

Before committing to launch a new product or service formally and publicly on a large scale, test it in a smaller, more private and informal context to see if people are interested in it.

## Example

**BestBuy** wanted to validate the hypothesis that allowing customers to trade in their older electronics (e.g. DVD players) in exchange for store coupons would be a popular—and profitable—offering.

Even though they had 100s of stores, they pitched a tent in *one* of their store parking lots and advertised the new service (tentatively named NextPlay) just locally for one week to see what would happen. A very cheap, local (hence the name *provincial*) pretotype.

They validated that people liked the offering and almost all took immediate advantage of the coupon by buying a new product in the store (often a more expensive product because they had the coupon.)

Based on this early success, the program went from a one-night stand / provincial pretotype to an official service called “Technology Trade-in” in *all* Best Buy stores.



Another example that’s a perfect fit for the provincial name is Virgin Airlines. Richard Branson tested his business model and vision for Virgin Air with a single leased plane serving just two cities (back and forth.)



## Notes

Even if your company has 12,000 stores, before you launch any initiative on a large and long-term scale, test it the way BestBuy did. Pitch a tent, or the equivalent, in one location and see what happens.



# The One-Night Stand Pretotype

## Basic concept

Don't make any long-term commitments before you have evidence that your product or service is desirable. Instead, offer a pretotype version of your product or service on a very limited basis to see if there is any interest before making long-term commitments.

## Example

What better example for a pretotyping technique called 'one-night stand' than **airbnb**.

The name airbnb stands for "air-bed + breakfast". Legend has it that the 3 co-founders of airbnb had no money to pay rent. Since there was a big conference coming to San Francisco and hotel rooms were scarce and expensive, they created a simple website in which they offered an air-mattress + simple breakfast for \$80/night (a bargain in San Francisco.) Much to their surprise, 3 people signed up and they collected \$240.

They leveraged this encouraging beginning (Initial Level of Interest) into a company that has been recently valued over \$10B (yes, billions!) and is disrupting the hotel industry (the same way that Uber is disrupting the Taxi and Limo industry.)


I assume that now the 3 founders now have no problem paying rent.



## Notes

Airbnb is a perfect example of how a now super-successful and disruptive company tested an idea that, on the surface, sounded preposterous: "What, rent a room in my home to strangers ... ONLINE!" The worst that could have happened if their test had failed is that they would be stuck with 3 extra air mattresses. And if they used a Fake Door pretotype they would not even have needed those mattresses.

# The MVP (Minimum Viable Product) Pretotype

<p><b>Basic concept</b></p>	<p>The term MVP, popularized by Eric Ries, author of “The Lean Startup”, refers to a product with the absolutely minimal set of features that would make it valuable and useful—at least to early adopters.</p>	
<p><b>Example</b></p>	<p>It may seem heretical, and a stretch, to list the original iPhone as a Minimum Viable Product, but what better example than one of the most iconic products of all time.</p> <p>The first version of the iPhone was released without some functionality that most people and companies would have considered a <i>must-have</i>. It did not support cut-and-paste, it offered a very limited number of apps, it did not support notifications or the über-popular Microsoft Exchange email back-end, ... and it required iTunes to activate/use it.</p> <p>The first iPhone did a few things, but it did them very well. Well enough to get people interested and then hooked.</p> <p>There’s always time to add functionality once you’ve proven that a product is <i>The Right It!</i></p>	
<p><b>Notes</b></p>	<p>A minimum viable product doesn’t necessarily mean a cheap product made quickly; it means a product (or service) with a minimum set of “core” functionality that make it <i>useful enough</i>. As a matter of fact, the initial lack of “nice to have” features and functionality is a good test of how much people want the product. Buyers of the original iPhone had to give up Microsoft Exchange, could not cut-and-paste text, had no keyboard, needed iTunes, etc, but they did not care. The ‘core’ design, functionality and vision was compelling enough for them to prefer it over other alternatives.</p>	

# The Infiltrator Pretotype

## Basic concept

Take advantage of the customer traffic in an existing store (brick-and-mortar or online) to stick a artifact of your idea (it could be a one off, even an empty box) on the shelves to see if people would buy it.

## Example

San Francisco design firm Upwell, came up with an idea for something they called **WallHub**—a switch plate that can also serve as a key and mail holder (so you don't forget them as you leave the house.)

They thought that people would buy it if they saw it, but had no access to a store of their own to validate their hypothesis ... and they were not going to manufacture 10,000s of them without some validation.

Their solution was to:

- 1) Buy a used IKEA employee shirt on eBay so they could pretend to be an IKEA worker.
- 2) Infiltrate an IKEA store with a bag of WallHubs (which they renamed **Walhüb** to match IKEA's quirky naming.)
- 3) Find an empty display space and put the item on sale (along with IKEA-like price tags).
- 4) Stand back and see if people would buy it.

It turns out that people were interested in the item, and several took them to bewildered cashiers who could not figure out why the item would not scan on the register.

See the full video of this pretotype in action: <http://www.youtube.com/watch?v=oVjOMP7ziKA>



## Notes

What an effective way to turn opinion (“I believe that people will buy it”) into data (in a two hour period, IKEA would have sold 14 Walhübs ... if they were official IKEA products.) Of course, the Upwell people took some risks impersonating an IKEA employee, but if you are not ready to risk jail (or major embarrassment) you can use the same technique by asking stores permissions to display your items.

# The Impersonator Prototype

## Basic concept

Most new products or services are not completely new and different. Many times there are other products and services that are close enough in form or function to your innovation and, with some work, they can be used to *impersonate* the new product you have in mind.

## Example

In 2008, **Tesla's Elon Musk** had an idea for a \$120,000, all-electric, two-seater car. He knew that it would be a very tough sell. How could he make his vision more concrete? Few new products are more costly and complicated to prototype, let alone launch, than a new car; and if he got it wrong the loss would be huge. But he had a brilliant idea.

He took an existing car (a Lotus roadster) that was close enough to what he had envisioned, ripped off the internal-combustion engine, put an electric engine in it (along with slightly different body) and drove it around. Now he had an artifact, a really sexy and fast one, to show around. People were obviously interested in the new car; but would anyone be interested enough to buy one? He needed data not opinions. So he asked people who expressed interest if they were interested enough to write him a \$5,000 deposit check to be on the waiting list for one.

Eventually, he collected enough deposit checks that he felt his vision for an expensive, all-electric, car was not a total hallucination. From the impersonator, Lotus-based, Roadster Tesla moved on to an all-electric car that was developed in house from the ground up (the Model S); the rest, as they say, is history.



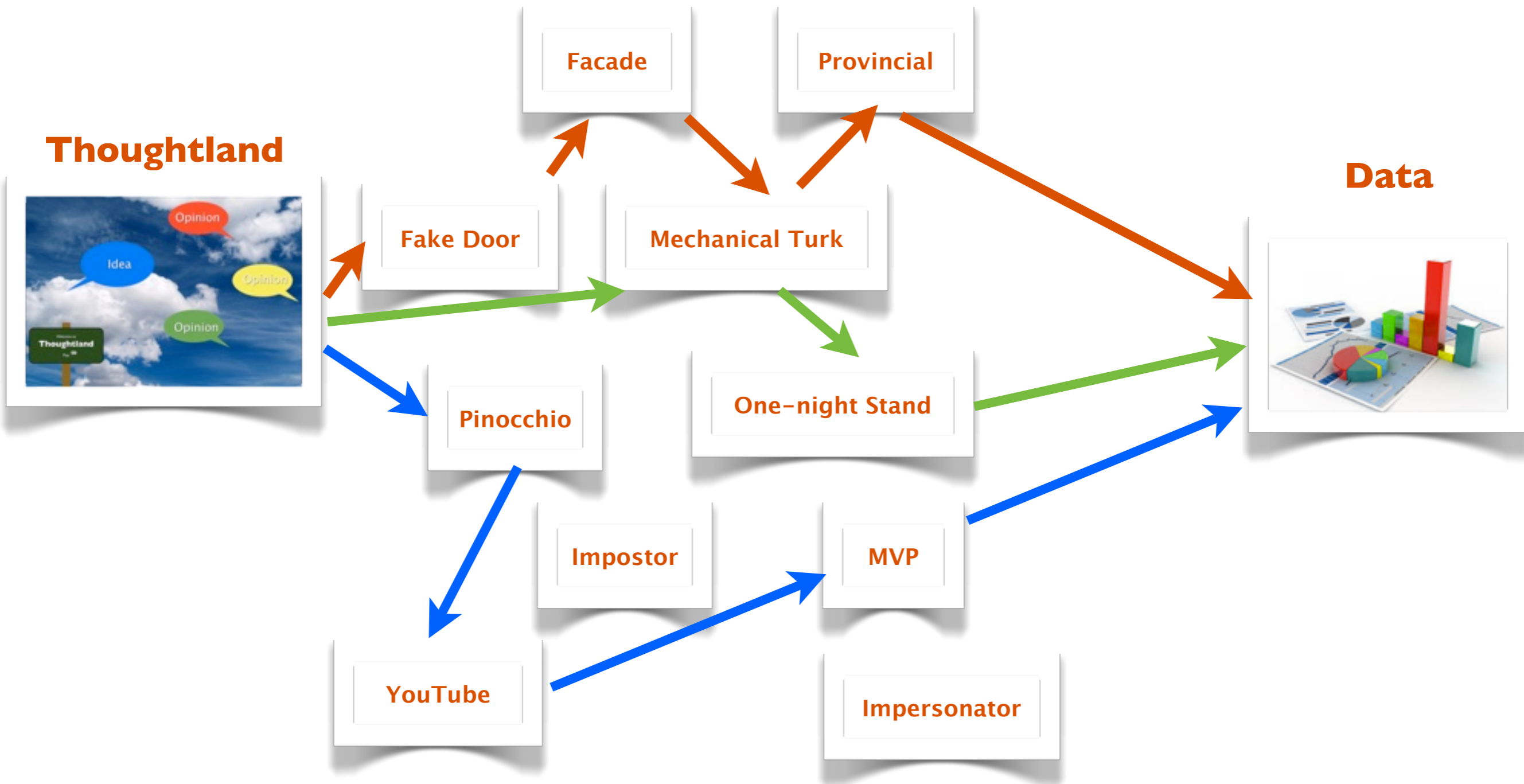
The impersonator Tesla Roadster (left) and the original Lotus Elise (right)

Looks like a regular sports car, but it's actually an all-electric one.

## Notes

Most of the time you don't have to build a prototype from scratch. You can leverage, modify, combine, etc., existing products or services to impersonate the product you have in mind to validate some key hypotheses while saving yourself a lot of time and money.

Don't be afraid to combine different prototyping techniques in parallel or in sequence to validate different hypotheses



## Pretotype It Worksheet

**Idea:** \_\_\_\_\_

**Testable Hypotheses:**

1: \_\_\_\_\_

2: \_\_\_\_\_

3: \_\_\_\_\_

**Which technique(s) would you use to pretotype it?**

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**Success Metrics** (I.e., What minimum results would you have to see to go to the next step?)

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**EXAMPLE**

## Pretotype It Worksheet

**Idea:** Pizza K9 (Pizza for dogs)

### Testable Hypotheses:

1: At least 20% of customers with dogs will try it

2: At least 10% of customers with dogs will order it at least once a month

3:

### Which technique(s) would you use to pretotype it?

1: Fake Door (put on menu, offer it to customers) in one store to test initial interest (hypothesis #1)

2: MVP + Provincial (3 stores) + One-night-stand (3 months) to test ongoing interest (hypothesis #2)

### Success Metrics (i.e., What minimum results would you have to see to go to the next step?)

For pretotype #1: At least 10% of customers will try Pizza K9

For pretotype #2: At least 5% of customers will order it more than once

# RPI

## Return on Pretotyping Investment

$$RPI = \frac{\text{Learn* from (Pretotype)}}{\text{Learn from (Product)}} \times \frac{\text{Cost (Product)}}{\text{Cost (Pretotype)}}$$

$$RPI = \frac{\text{Test 1/2 of the Hypotheses} \quad 50\%}{100\%} \times \frac{\$4,000,000}{\$10,000}$$

*For a 1/400 of the cost*

$$RPI = 0.5 \times 400 = 200$$

\* How many Hypotheses can it help me validate?



# RPI WORKSHEET

**IDEA:**

\_\_\_\_\_

**PRETOTYPE:**

\_\_\_\_\_

## Key Hypotheses

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_

**RPI** = \_\_\_\_\_ X \_\_\_\_\_  
 (\$ or time)

**RPI** = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_

$$RPI = \frac{\text{Learn from (Pretotype)}}{\text{Learn from (Product)}} \times \frac{\text{Cost (Product)}}{\text{Cost (Pretotype)}}$$

**EXAMPLE**

# RPI WORKSHEET

## IDEA:

Pizza K9

## PRETOTYPE:

Fake Door (Just put it on menu)

## Key Hypotheses

- 1. At least 20% of dog owners will try it once ✓
- 2. 10% of dog owners, will order it at least once a month ✗
- 3. We can price Pizza K9 at a 40% price of a regular and 10% of people will still order it ✓
- 4. 50% of people will order the de-luxe version ✓

$$\text{RPI} = \frac{(\$ \text{ or time}) \cdot .75}{1.0} \times \frac{\$10,000,000}{\$10,000}$$

$$\text{RPI} = \underline{.75} \times \underline{1,000} = \underline{750}$$

**EXAMPLE**

# RPI WORKSHEET

## IDEA:

Pizza K9

## PRETOTYPE:

Fake Door (Just put it on menu)

## Key Hypotheses

- 1. At least 20% of dog owners will try it once ✓
- 2. 10% of dog owners, will order it at least once a month ✗
- 3. We can price Pizza K9 at a 40% price of a regular and 10% of people will still order it ✓
- 4. 50% of people will order the de-luxe version ✓

$$\text{RPI} = \frac{.75}{1.0} \times \frac{26 \text{ weeks}}{1 \text{ week}}$$

(\$ or time)

$$\text{RPI} = \frac{.75}{1.0} \times 26 = \sim 20$$