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# How to build a breakthrough

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12-16 minutes

## ...the secret of Backcasting

*"I don't care, I don't care, so call me crazy. We can live in a world that we design." — from the Greatest Showman*

Marc Andreessen's call to arms — *It's Time to Build* is a powerful manifesto for a more ambitious future. If you haven't read it already, you should.

Marc closes his post by asking **what** ideas people have for building breakthroughs. I can't think of a better voice to pose this question since he catapulted us into the Internet age two and a half decades ago when he built the first web browser and server.

But we also need tools for **how** to do this.

I would like to share the best method I have found: *Backcasting*.

## The future doesn't happen *to* us; it happens *because* of us

The future is not like the weather. It doesn't just happen. People *make* the future. It's not a destiny or hope; it's a *decision*.

Steve Jobs didn't "discover" a market need for smartphones or tablets: He *designed* the category and taught us how to think about it.

Elon Musk did the same with electric cars and commercial space travel.

So, **how** do legendary people make the future? How can **you** be a legendary builder of a breakthrough idea? That's where Backcasting comes in.

## Get out of the present

*"The future is already here, it's just not evenly distributed." — William Gibson*

Before getting to details of how Backcasting works, it helps to get in the right frame of mind.

Breakthrough builders are visitors from the future, telling us what's coming.

They seem crazy in the present but they are right about the future.

Legendary builders, therefore, must stand in the future and *pull* the present *from* the current reality *to* the future of their design. People living in the present usually dislike breakthrough ideas when they first hear about them. They have no context for what will be radically different in the future. So an important additional job of the builder is to persuade early like-minded people to join a new movement.

That means that most of your friends, advisors, and even investors are useless at helping you identify a breakthrough.

*Getting out of the present and standing in the future is the first key to finding a breakthrough.*

It's how you get in the right mindset to arrive at breakthrough insights.

But once you are in the right frame of mind, how do you get out of the present? Enter Backcasting.

## Backcast, don't forecast

Since most people live in the present, they try to predict the future by forecasting, which projects forward from what is already known.

Forecasting works best when you are on a trajectory and you want to stay on it. But when it comes to building breakthroughs, forecasting falls short. As Albert Einstein famously warned,

*"The significant problems cannot be solved by the same thinking that created them."*

Forecasters typically consider incremental changes to existing products and markets. Forecasting also takes present problems into the future with us. Perhaps most importantly, forecasting assumes the world is mostly the same in the future and that we should operate within the rules rather than think of ways to change the rules.

Backcasting is the opposite of forecasting.

It works best when you want to create something extraordinarily unique and surprising. Something that's not incrementally better, but *exponentially different and unique*.

As you backcast, you are likely to find that many current assumptions about products and markets won't be true in the future. Your goal is to find insights about the future that are non-consensus and right.

*Starting from the future and working backwards is the second key to finding a breakthrough.*

It's how you avoid the temptation to fall prey to incremental ideas and playing by other people's rules.

So how do you Backcast? There are three key steps:

### Step 1: Look for *Inflections*

Exponential inflections power massive breakthroughs. They resemble waves with a giant gathering force. In my experience working with amazing start-ups, I have seen several types of inflections:

**Technology inflections** involve exponential improvements in the price/performance of technologies like computation, sensor accuracy, bandwidth, and the like.

When Floodgate invested in Lyft (Zimride at the time), one of the inflections was that GPS locators in smartphones were becoming orders of magnitude more accurate, which meant they would be able to locate riders and drivers much more precisely.

**Adoption inflections** involve nonlinear changes in the adoption rate of a technology.

Returning to the Lyft example, in 2010 we believed it was likely smartphone adoption would increase exponentially. This meant we could imagine enough drivers and riders would have smartphones to make it possible to build a scalable transportation network in the future.

**Regulatory inflections** involve changes in regulations that open up massive new opportunities.

An example I have been tracking is the easing of restrictions in telemedicine, which now makes it legal for doctors to serve patients across State boundaries.

**Belief inflections** involve contradicting long-held beliefs. Some ideas that are now considered heresy but might someday be viewed as reasonable.

Returning to the telemedicine example, the necessity of health care for COVID-19 patients is likely to increase the number of patients and doctors who are comfortable with telemedicine by an order of magnitude. It becomes a belief inflection if these changes become more than temporary.

**Inflections should be understood even before markets.** Entrepreneurs who live in the present tend to make the mistake of starting with the market first. They analyze current markets for unsolved pain or for segments that are currently unserved or for "whitespace" in markets. But you are more likely to discover a breakthrough market opportunity by starting with inflections, the chaos they cause, and then working backwards. You *arrive* at the breakthrough market opportunity by following the inflections.

For instance, if you are looking for breakthroughs in elder care, rather than studying the elder care market and looking for pain points and market openings, consider first asking which technology, adoption, regulatory, and belief inflections create the conditions for an exponential breakthrough.

*Finding inflections is how a builder finds opportunities that can have an exponential impact.*

This is why it's the best place to start.

## Step 2: Backcast from Potential Futures

In contrast to “Projected” futures, which are a byproduct of forecasting, Backcasting considers more exponential and surprising futures, which I refer to as “Plausible,” “Possible,” and “Preposterous.”

**Plausible futures** are those that you would not anticipate, but make sense once you hear them.

One of my favorite examples of this is with Okta, a company we invested in back in 2010. Todd McKinnon had been VP of Engineering at Salesforce.

Freddy Kerrest and Todd McKinnon from Okta: Time travelers from a “Plausible” future.

He knew the early adopters of cloud computing. He imagined lots of technology would run in the cloud and customers would struggle to make it all work together. Once you heard Todd explain the future need for unified identity across cloud products, it seemed totally plausible that his intuition was right and he was in the best position to build what was missing in that future.

**Possible futures** often start as a hobby or obsession that turns into an unexpected breakthrough.

A great example is Marc Andreessen himself. He was living in the future because he was working at a supercomputer lab with a superfast network at the University of Illinois.

Marc Andreessen in the early 90s: Time traveler from a “Possible” future.

He wanted to enable collaboration between researchers and built the Mosaic browser and web server to solve his own problem. Marc was living in the future and building things that would make the future he wanted immediately more useful to him.

However, most people didn't think his work was important at the time. From the vantage point of the present, it seemed that big companies like AT&T and Time Warner would build the “digital superhighway” from the top down.

Netscape happened because Marc followed his obsession until the next logical step was to build a company. Lots of great breakthroughs come from builders like this, such as the original Apple computer, Microsoft Basic, 3Com for the Ethernet, etc.

**Preposterous futures** seem crazy to almost everybody. The poster child for building these futures is Elon Musk.

Elon Musk: Turning the seemingly “Preposterous” into reality

Who else decides to build an electric car company when a successful American car company had not been built in half a century?

Who decides they can be the first non-government entity to blast rockets into outer space?

But it turns out that Elon is the right kind of crazy. All of his ideas have come together because of a combination of inflections in battery technology, sensors, big data AI, computing power, etc. When Elon talks about reasoning from first principles, he is naturally harnessing the power of multiple **inflections** on the horizon and pulling them together into something seemingly impossible.

*Backcasting from potential futures widens the range of possible futures you can consider.*

It opens your mind to ideas that are more exponential and surprising, which increases your chance to find breakthrough **Insights**, which is what comes next.

## Step 3: Gather breakthrough insights

Armed with your inflections and a range of potential futures, the next step is to gather **Insights**.

People build things all the time; Those who build breakthroughs realize not all opportunities are equal. A poor insight will usually result in a mundane opportunity, even with great execution. A brilliant insight creates far more answers to the question “What could go right?”, giving the builder many more ways to change the future if the team executes well.

Finding breakthrough insights requires asking the right questions to the right people.

“Seers” are people who you believe are living in the future around a given inflection. They might be entrepreneurs, researchers, academics, futurists, hobbyists, Angel investors, and the like. These are the people you want to spend time with.

**Insights are different than analysis.** They uncover ideas that are exponential and surprising rather than facts that can be analyzed. This is why it’s crucial to ask the right types of questions and to make sure you are not talking to people who are overly tethered to the present. Examples of the types of questions might be:

- What assumptions about the future might be wrong?
- What could happen with this inflection that is more likely than most believe?
- What is less likely to happen than many believe?
- What is a preposterous potential future that might not be so crazy after all?
- What would be the best outcomes from this inflection that could realistically happen?
- What would be the worst outcome?

From the diagram below, you observe that insights can exist at different points in the future (horizontal axis) and can involve different levels of “surprise” (vertical axis). Insights flow from applying the power of inflections to different potential scenarios at different times in the future.

It’s best to collect multiple insights and compare and contrast them. Brainstorm, discuss and argue about the future you’re exploring. Think about futures that you are uniquely capable of creating. Which scenarios align with your passion, risk tolerance, and capabilities?

Then ask, “What type of team would I need to make each insight real? “How likely am I to create the best team to pursue each insight?

## Bet on YOU

Ultimately, an Insight is like a “bet.”

You are betting on your insight and you are betting on yourself to be the creator of a future you want. An insight about the future that is non-consensus and right, powered by inflections, and driven by someone “crazy enough” to make it happen....this is the Archimedes lever for building a breakthrough product that moves the world.

*“Everything around you that you call life was made up by people that were no smarter than you. And you can change it. You can influence it. You can build your own things that other people can use. Once you learn that, you’ll never be the same again.”*

*-Steve Jobs*

Just like the greats of the past, **you too** can build greatness.

Now, more than ever, the world needs more entrepreneurs, who have the courage to step up, in the face of great odds and design an exponentially different future.

The present has stopped working. We **must** create a different future.

If you like the concept of Backcasting and you are energized to build something great, I would like to hear your story. You can find me on Twitter @m2jr if you’re interested.

In this post-pandemic world, there is a vital need for many breakthroughs. Especially yours.

*If you liked this post, you might also like the [Starting Greatness Podcast](#), which you can find on Apple, Spotify, or wherever you get your podcasts.*

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