THOUGHTS FROM THE FRONTLINE

# Meet the Real Tony Starks

By John Mauldin | March 28, 2026



I remember the summer of 2006 when I literally was searching for something to write about. Nothing was happening. I think I reviewed several medical reports and books. That is not the case today. We are somewhere along the lines of there are times when nothing important happens for years, and then you get months when decades happen. Readers want me to comment on a dozen topics all of which are significant.

Let's summarize: inflation is likely to continue to rise; the economy will likely continue to weaken; the labor market is getting softer and more bifurcated; obviously energy prices are in flux.

All the headlines are about Iran. Armchair generals, some of whom were actual generals, and pundits offered their opinions which vary widely. Let me summarize the view from my best sources: The Trump administration initially thought this would be a 5-6 week war. We are in week three.

Inflation in Iran is currently around 47.5% annually, with food prices up over 100%. The 10 million rial note, issued in March 2026, is the largest denomination in Iranian history. It followed a 5 million rial note introduced just a month earlier (early Weimar, Argentina, or Zimbabwe?).

Long lines formed at banks when it was released, and supplies ran out quickly. The note is worth about seven dollars. It has been two months since much of the military has been paid, although the IRGC seems to be getting their money. Not the best context for military cohesion.


It is likely that we will try and take Kharg Island and disrupt the cash flow in an already economically weak Iran. That part of the war may have already started by the time you read this (due to my schedule, I am writing this Thursday night.)

But the simple fact is we have no idea how this will end. The Mullahs get a vote. While I read various armchair generals, I am not one. And if you think your investment portfolio should change because of this conflict, my suggestion would be that you change your investment portfolio. Your portfolio should be as anti-fragile as possible.

## Meet the Real Tony Starks

With that said, I want to interrupt our regularly scheduled program and write about something I find extraordinarily positive and optimistic.

I have just spent the last two days with members of our Inner Circle. We visited four technology companies and listened to six other CEOs make presentations here in El Segundo California. They were almost all shockingly (to me) young.

We all read about how the younger generation is not as educated and entrepreneurial as previous generations. I want to tell you my experience here in El Segundo is the complete opposite.

I felt like I was meeting with Tony Starks over and over again.

It felt like I was meeting with the future Thomas Edison's, Tesla's, Musk, Sergie Brin, and Alex Karp. The media is focused on Artificial Intelligence and robotics. There is so much more going on. What I want to write about today is a summary of what I've seen, which made every single one of our participants extraordinarily optimistic about our future.

A little context: My co-founders of the Rational Optimist Society, Stephen McBride and Dan Steinhart, arranged our tour of four truly world-changing companies and the CEO presentations. I'm going to give you a brief tour in chronological order of our experience. As optimistic as I am about the future, I was blown away. So, step away from the mainstream media and let's talk about why the world is going to be far better than we currently dream.

## A Human Reality Distortion Field

Our first visit was to a five-year-old company called Rangeview, a manufacturing startup headquartered in El Segundo. Founded in 2020 by Cameron Schiller (CEO) and Aeden Gasser-Brennan (CTO), the company operates a "cyber foundry"—a robotics-driven, digitally integrated factory that reinvents investment casting for aerospace and defense. It has *significant* funding from major name-brand VCs. (If you Google "investment casting," you will see a lot of Chinese companies.)

Rangeview transforms digital CAD files into precision-cast metal parts. It uses a proprietary process that combines 3D-printed ceramic molds with advanced material science, enabling a 12-day turnaround from order to pour-ready mold—dramatically faster than industry norms.

Customers include U.S. military programs, major aerospace OEMs, and defense technology companies. And, as it turns out, some of the other companies we visited.

Cameron is a 25-year-old force of nature with the vision to transform how we think of manufacturing in the US. Part of that vision is to transfer his expertise to the rest of the country. He wants to return the US to a manufacturing powerhouse.

In a theme that was consistent, it looked as if each company was competing to see who could have the largest US flag in their factories. Ironically, the flags got bigger as we progressed through the four companies.

As it turns out, one of his early hires came to our dinner Wednesday night. He was the "old man" of the group, in his mid-30s. He told me he had been reading me for 15 years and was surprised when I walked through their plant. He described Cameron as a human reality distortion field.

Epic story: Cameron dropped out of college in his first semester and went to China. He eventually won a world robotics championship and learned about manufacturing. He realized that the US was falling behind. He returned to El Segundo with a personal mission to change how manufacturing is done in the US.

This "kid" is going to be Alex Karp in 10–15 years, and maybe even another Elon Musk. I asked him why El Segundo? He pointed through the window to a large gray building a few blocks away, "That is where SpaceX started." That is a theme I heard over and over.

We can see the impact that Musk has made on space and so many others areas. After this week, I think his biggest impact may be on the literally hundreds and eventually thousands of people who go on to start their own companies, each with world-changing visions.

Even those who haven't worked at SpaceX have picked up on his operational skills as well as his audacity for big dreams. Example: If your suppliers cannot meet your schedules, then start manufacturing your own supply. I literally heard that, in one form or another, from every company we looked at. (More below.)

Security was quite tight. No pictures. I did take one outside with him and Stephen McBride. Remember that face as you will see it a lot in 10 years.

## Space Taxis

Varda Space Industries designs, builds, and flies autonomous spacecraft that manufacture pharmaceutical products in microgravity and return them to Earth. But it's so much more than that. Reusable rockets have lowered the cost of access to space and opened up a range of in-space activities. Now that access to space is cheap, it's what we do there that counts. And Varda is taking it to the next level.

We were given a tour of the production facility by their Chief Technology Officer, Nicholas Cialdella. Varda operates the world's first commercial microgravity manufacturing and reentry platform. Autonomous spacecraft are sent to low Earth orbit, where robotic systems crystallize pharmaceutical compounds in microgravity. We are talking about life-changing drugs that cannot be manufactured on earth. A reentry capsule then returns the products to Earth via parachute landing.

Many of their payloads brought back can literally be measured in grams. Not pounds. That didn't sound very impressive, until he pointed out that all the actual mRNA vaccines used in the Covid episode could be contained in two, 1-gallon milk jugs.

They have also built a second revenue stream in hypersonic reentry testing. Because its capsules reenter at Mach 25+, the company provides the U.S. military with a low-cost, routine platform for testing materials and sensors in real hypersonic flight.

Below is a picture of myself, Steven, and Brandon along with Nicholas in front of their first satellite. The blackened portion at the bottom is from burning during reentry. He spent 10 minutes telling us of how they developed the shield on the satellite that can take Mach 25. And that was the least complex thing they did. They literally have robots mixing chemical components which in microgravity allow crystallization.

Think of it this way: oil and water don't mix. Many chemical operations cannot have an equal distribution in a mixture because of gravity. Remove the gravity and you can get an even distribution and then the proper crystallization will occur. And thus new drugs. And eventually a whole host of things.

Big Pharma and the Defense Department are lining up. Ultimately, the vision is to build a space manufacturing facility and then their satellites become space taxis (my term not theirs) bringing back the products. The complexity and precision of their production facility is overwhelming. (A constant theme!)

## SaaS: Solar As a Service

Reflect Orbital is a space technology company founded in October 2021 by Ben Nowack (CEO, former SpaceX engineer) and Tristan Semmelhack (CTO, former Zipline engineer). It designs and manufactures satellites with large deployable mirrors that reflect sunlight onto Earth's surface after dark.

In my opinion, if they can pull the vision off (and I think they will), this is easily a multi-hundred-billion-dollar enterprise. Sidebar: this was Sequoia Capital's first space investment since 2010 when they invested in a crazy startup called SpaceX. Just saying…

This was another Tony Starks moment. 28-year-old Ben Nowack was literally building fusion reactors in high school. His dad was upset when he used 1 megawatt of electricity in the month he fired up his fusion reactor. He gave up on creating antimatter and a ½ dozen other projects. "I didn't make good grades in college because I was building things." He launched the company in his garage at age 23.

The basic thesis: solar panels only produce power during daylight, yet peak electricity demand often comes in the evening. Reflect Orbital extends effective solar generation hours without battery storage, new land, or additional ground infrastructure.

It's building a constellation of satellites carrying large, ultra-thin-film reflectors that redirect sunlight from Earth's dayside to targeted nightside locations. Reflected sunlight requires no electricity or fuel. Each satellite illuminates a defined area for a set period, then rotates away when not in use. Brightness is adjustable—from moonlight intensity (one satellite) to significantly brighter (multiple satellites converging). The picture below (with Ben) will give us some context.

Look at the flag. Then notice it is reflected on a thin-film below which is difficult to see in this picture. Thin is a misnomer. It is 28 times thinner than a human hair. They layer different materials in nanometer "sheets."

What is hard to detect here is that it looks like a big triangular sail from a sail boat. Their satellite is roughly (my visual guess) a 2 feet x 3 feet cube. They use roughly 6-inch hollow diameter "booms" to deploy the four sails per satellite. The booms are remarkably light but incredibly strong. They passed around sections for us to hold. All of this folds into their satellite along with the control systems and solar panels which provide actual power.

That one satellite can basically reflect a full moon's light onto a 2-mile radius of the earth. From the earth you only see what looks like a star, but on the ground is the light of a full moon. Deploy multiple satellites reflecting on the same area and it becomes noon.

If that area is a solar farm, they are now producing electricity at midnight. Reflect will get 80% of the revenue. Eventually, the satellites are a few hundred thousand dollars plus launch costs. Their satellites are 1/6 the size of a Starlink satellite so that launch costs become much cheaper.

It will get even cheaper when my friend Tom Markusic finishes his hydrogen-fueled airplane that will go into orbit, deploy multiple satellites, and land 90 minutes later. Just like Elon cut the cost of launching a rocket by 80%, Tom will cut the cost yet again, and then again. All while building a spaceport hopefully in Puerto Rico. (Full disclosure: I have a small investment in his company.)

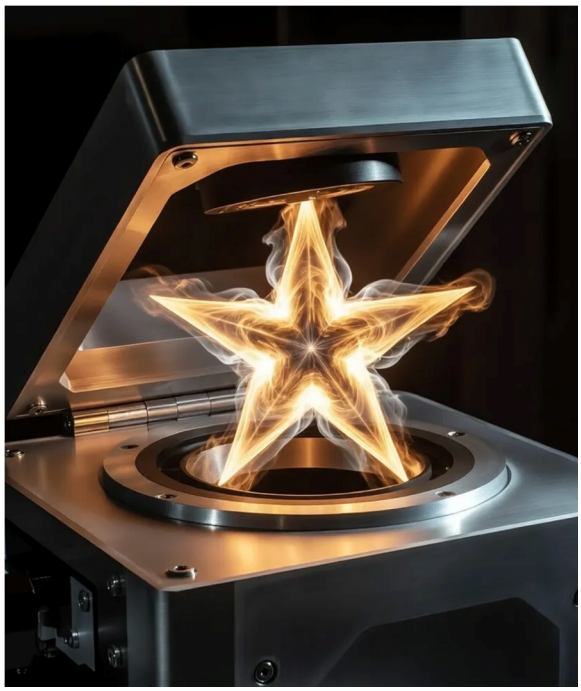
There are countries already contacting Ben about lighting an area for search and rescue purposes. When they announced the possibility, they got over 200,000 emails asking when could they schedule an event? If you're going to spend $1 million on a party, why not light it up at night for $5000 an hour? That is what they will charge per satellite hour. Except for solar power, where they will get 80% of the electricity revenue. There are so many revenue sources I can't even take the space to talk about.

I can hear some of you worrying about whether there will be no more nighttime, or light pollution, or whatever. The answer is no, no, and no. If you're worried about that, read through their FAQs. They have thought through hundreds of scenarios and questions.

Their first satellite goes into orbit in October (ish). I asked Ben about his funding. They just closed a large round (still confidential) at a higher valuation. I asked if it was a billion-dollar valuation yet. Looking me straight in the eye he said, "Not now, but when we have a satellite in orbit and working? It will be multiple billions."

I wish I could get a piece of that next round. This version of Tony Starks is going to create 100X for a lot of early investors.

# A Star in a Box



*Source: Pippa on substack*

Just 30 minutes before we visited the next company, Valar Atomics, an email from Pippa Malmgren hit my inbox describing Valar as a star in a box. And it really is.

Valar Atomics builds small, modular, high-temperature, gas-cooled reactors (HTGRs) designed for mass production. Rather than selling electricity to utilities, Valar produces hydrogen, synthetic fuels, data center power, and industrial process heat—from centralized "gigasites" hosting hundreds of reactors at a single location.

Traditional nuclear is slow, expensive, and regulatory constrained. Valar treats it as a manufacturing problem. By becoming its own customer—using reactors to produce fuels instead of selling reactors to third parties—the company mirrors SpaceX's Starlink model: sell a simple commodity (fuel) made by complex technology (reactors), and bypass the need to explain nuclear engineering to every buyer.

Enter Isaiah Taylor, yet another young Tony Starks. He founded the company at 24, raised the money before he hired anyone, and they will turn on their first small modular nuclear reactor in Utah on July 4, 2026. The reactor is already on site in Utah, roughly twice the size of a couple SUVs.

At 19 years old, Isaiah knew he wanted to build smaller, safer, and modular nuclear reactors. No surprise there, as his grandfather was Ward Schaap, who worked with Fermi at the University of Chicago were they created the first controlled nuclear fission reaction in 1942 and then went on to work at Oak Ridge.

Isaiah is the epitome of the focused engineer. He methodically took us through the history of nuclear power and technology. I learned more in one hour than I have in my entire life of reading.

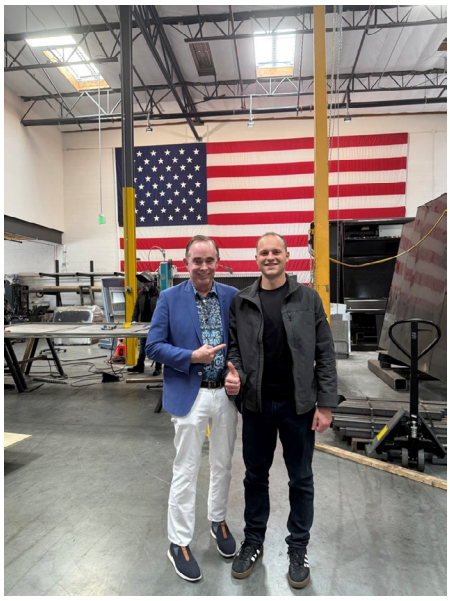
Valar's flagship reactor, the Ward250 (named in honor of his grandfather), is a 5 MW helium-cooled, graphite-moderated. microreactor fueled by TRISO pellets—compact enough to fit inside a C-17 cargo aircraft and modular enough for factory-line production. Isaiah apologized that we could not see the reactor, as they had just shipped it to Utah (it seems that California passed a proposition forbidding nuclear reactors). But they did extensive testing in El Segundo

Contrary to most startups, Isaiah assumed that his first design would be a failure. Ironically, it worked the first time but failed the second attempt. It turns out the metal housing bonded with the metal chain that moved the control tubes. So, they redesigned it. And it failed again. And again. They got it right on the 38th attempt. Their current version should last for at least 20 years.

I asked him if he would be ready on July 4? I got a smile, almost a smirk. I asked if they were already testing it? I got another smile with a twitch of his head. It wasn't a "yes" but it wasn't a "no." Dollars to doughnuts it will work on July 4. After that? Build more modules and crank a factory up. Seriously Isaiah, think about Texas when you build that factory. I'll be happy to introduce you to Greg (Gov. Abbott). Just saying…

By the way, as we were leaving, one of our members asked about the particular part that requires incredibly precise engineering materials. Remember Cameron that we talked about at the beginning? Turns out they are good friends, and the only place that he can get the precision that he needs is at Rangeview. Small world…

The only picture I was allowed to take was Isaiah and I in front of their flag. He wins the flag competition hands down.



Here is a quick summary of some of the CEO presentations.

Zane Mountcastle from Picogrid simply astounded us with his breadth of knowledge about the entire defense ecosystem. Picogrid basically allows scores of different technologies in the defense world to talk with each other. Let's say you are Ukrainian and you have 10 different drone systems. You want them to be able to communicate. Picogrid allows that and to be controlled in the field. Or missile systems, or whatever.

The next small startup got my attention, as it was in the mining field. My actual first newsletter was a gold stock newsletter that I wrote in the mid-'80s, so I am somewhat familiar with the mining industry. I have actually been on-site where the engineers breathlessly show me their core samples, telling me what amazing gold or copper or nickel content they had. Thus, my interest…

Durin is a mining technology startup based in El Segundo, CA. Founder and CEO Ted Feldmann grew up around the mineral exploration business in Vancouver. He founded the company at the end of his undergraduate studies at Georgia Tech.

Founded in April 2024, the company aims to build the world's first fully-automated core drilling rig for mineral exploration. His initial rate was $3.4 million and included some rather famous venture capitalists. When he told me he was 22, I wanted to make a rude gesture, thinking back to what I was doing when I was 22.

Discovering a mine and acquiring enough data and confidence in a deposit to develop it typically requires in excess of $200 million in the western world. The majority (around 75%) of this cost is drilling. The primary method used is core drilling, where 10-foot sections of core are recovered to surface from depths ranging from a few hundred to a few thousand feet. This core is then manually logged by geologists before being assayed by a lab.

The problem is that the US does not have enough drillers. Half of the US mining industry is retiring during the 2020s, from positions ranging from white-collar mining engineers and geologists to blue-collar drillers. There are drilling rigs sitting idle today, allocated to contracts but not operating, simply because there is not enough skilled labor to run them. This labor squeeze has also caused drilling rates to triple over the last 20 years.

Durin is automating the drilling process, reducing the number of operators per machine from 3-4 to 1-2 within the next 18 months, and then to 0-1 beyond that. Beyond cost reduction, Durin aims to drill faster by using software to optimize drilling parameters in real time, cutting through rock more efficiently, and deploying robotics to accelerate manual tasks, including rod handling, core recovery, and mud mixing.

Real-time data collection allows Durin to understand what the rig is drilling through as it happens, enabling mining and exploration companies to characterize their deposits earlier than ever before.

## Shoot the Archer, Not the Arrow

Nathan Mintz, the co-founder and CEO of CX2, the only mid-30s CEO we met, is on his third start up. Andreesen Horowitz, among others, is backing him. Simply, he is developing technology that doesn't just track a drone, it can determine where it came from, and then launch a drone to take out the operator. "Shoot the archer, not the arrow."

My friend Joe Lonsdale recently interviewed him. Nathan will be featured at the SIC this year. I could do an entire letter on just him.

The tyranny of space forces me to stop. But not until I mention The Rational Optimist Society. If you like understanding where the world is going, you can subscribe to my personal favorite newsletter, which will show up in your inbox every Sunday morning, giving you a positive view of what's going right in the world. It's free and it will make you feel good. Trust me on this. You want to subscribe.

## West Palm Beach, Washington DC, New York, and Boston

In the middle of April, I will attend a very large longevity conference in West Palm Beach. And hopefully help inaugurate the opening of our Lifespan Edge clinic in West Palm Beach as well. Then I fly directly to DC and New York for a series of dinners and meetings. The SIC starts in early May, and then I have no trips scheduled until Boston for another Inner Circle gathering in early June.

I have been extraordinarily pleased with our new Inner Circle gatherings. The response from members has been overwhelmingly positive. It is doing what we hoped: it is creating a network of meaningful relationships that can network and combine their incredibly diverse and successful experiences to everyone's benefit. I wish I had done this decades ago. The team is creating fabulous venues and experiences, but the real value is the relationships we are developing. It truly feeds my soul.

After late flights and missed connections, not to mention lost luggage, I hope my trip back to Puerto Rico is smoother. And with that, I will hit the send button. You have a great week.

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