

# 3X Profits on 3D Computer Vision Technology

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*A “hall of fame” disruptor is fueling the next great computing boom...  
and is set to hand us 300%+ gains*

Right now, minivans with no one behind the steering wheel are driving through Phoenix, Arizona.

These robocars are operated by Google’s self-driving car arm, Waymo. And they’ve already driven over 20 million miles on American roads.

Waymo is the only company in the world to have fully driverless cars on public roads today. But researchers had been trying to create autonomous vehicles for decades.

The US military’s research wing DARPA poured half a billion dollars into autonomous vehicles in the 1980s. Dozens of auto companies including Mercedes-Benz and Audi took a crack at building robocars too.

But they all failed... for the same reason. **They couldn’t figure out how to teach a computer to “see.”**

While “seeing” is second nature to humans, it’s extremely difficult for computers. Computers have always been able to count numbers and read text. But they could never master vision.

In fact, in 2010, about the only thing a computer could do with a pile of photos was sort them by size. So what hope was there for world-changing disruptions like self-driving cars that need computers to have a set of working “eyes?”

Then in 2012, Alex Krizhevsky, a University of Toronto student, made a big breakthrough.

He created a computer program called “AlexNet” that mimicked how our brains recognize objects. AlexNet rewired how computers “see,” handing computers the gift of sight. It marked the first time in history a machine could identify objects better than a human.

Machines gained a new superpower known as “*computer vision.*”

**And today, it’s unlocking a new world of disruption.**

Google is using it to put self-driving cars on American roads...

Amazon has invented “checkout-free” grocery stores with computer vision.

Healthcare disruptors are using this new superpower to create devices that diagnose cancer more accurately than 90% of dermatologists.

Computer vision is even producing flying delivery drones that drop parcels safely on your front porch...

In short, this is hands down the greatest revolution in computing since the internet. And those aren’t just my words. Microsoft founder Bill Gates has called computer vision “*the next big thing to change computing.*”

**And I've uncovered the one company whose image sensors are quickly becoming the sophisticated "eyes" of computer vision.**

These tiny chips are inside practically every computer vision device in the world. In fact, demand for its sensors is so high the company's factory is working day and night to keep up.

As it executes on this vision, my research suggests its stock could hand us 3X gains in the coming years.

## **A \$29 billion pot of gold**

He didn't know it at the time, but in 1990 Eric Fossum started a revolution.

In the early '90s, NASA was firing rockets into orbit every other month. And to take images of outer space, each spacecraft was equipped with cameras.

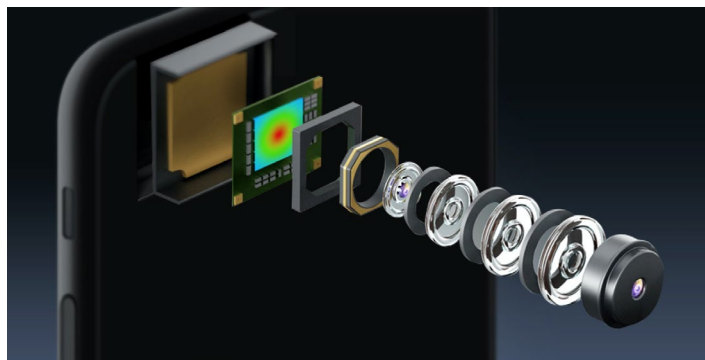
The problem was, these cameras were absolutely huge—roughly as big as a double-door fridge. Cameras used on spacecraft are similar to digital cameras, except they have to be a lot tougher. And they required tons of heavy wiring to work.

So NASA hired hotshot engineer Eric Fossum straight from Yale, and tasked him with miniaturizing NASA's cameras. Within two years, Fossum created a "camera-on-a-chip"—a new type of image sensor that was smaller and consumed 100X less power.

Image sensors are tiny computer chips that essentially give cameras a set of "eyes." They process light from the outside world and transform it into a bunch of 1s and 0s, allowing cameras to render images.

Fossum's "camera-on-a-chip" helped NASA slash the size of its cameras. **But more important, his invention laid the groundwork for digital cameras and camera phones.**

Today, there's an image sensor behind every camera lens. You can see the sensor inside a smartphone here:



*Source: Oltnews.com*

The rise of smartphones has been a boon for the sensor industry. Before camera phones, sensors were mostly used in digital cameras. And even during their best year ever, camera sales peaked at 121 million units in 2010.

But in 2019 1.4 billion smartphones shipped around the world. Today over five billion people across the globe own a smartphone... **and most of them have at least one image sensor inside.**

In 2010, total image sensor sales were under \$2 billion/year. Sensor sales to smartphone makers alone hit \$8 billion in 2020.

And the market for image sensors is set to explode again. These days sensors aren't only inside cameras, but cars... security cameras... medical devices... drones... grocery stores... and factories.

In fact, image sensors are in practically everything today, as you can see:

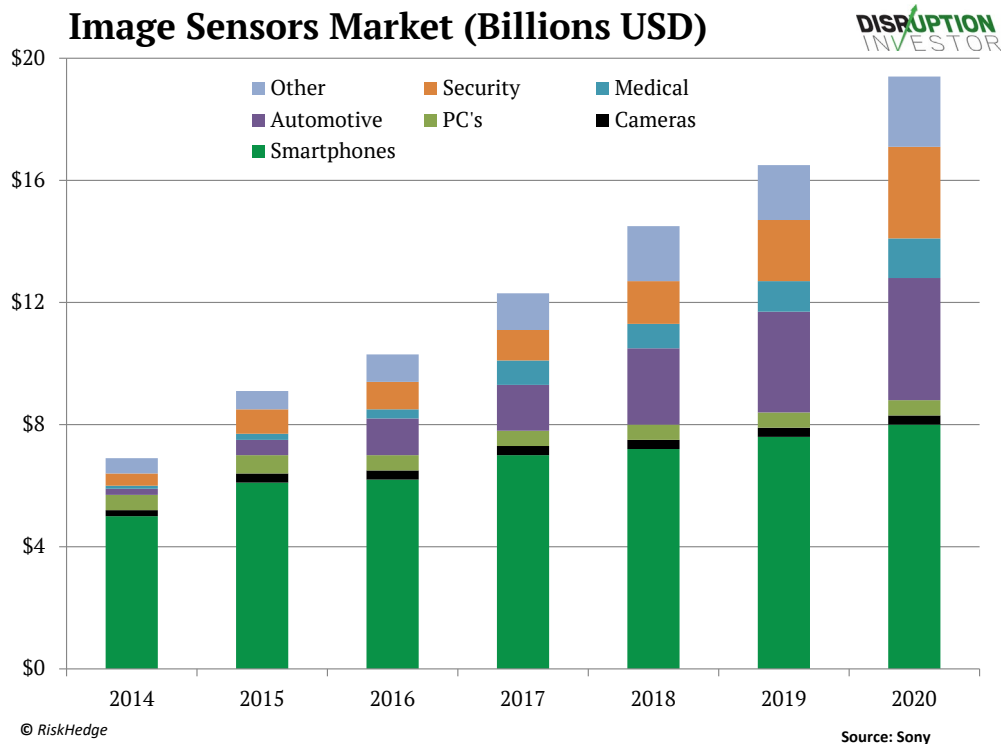


Image sensor sales are expected to hit \$33.6 billion/year by 2025 as they ride this new wave of growth.

## Cameras with brains

Remember, image sensors give cameras a set of “eyes.” These tiny chips allow machines to convert what they see in the real world into digital photographs.

But having a set of eyes isn’t the same as being able to “see.”

As I said, computers have never been able to master vision. Even in 2012, the world’s best image-recognition computer was still laughably bad at recognizing images.

But Alex Krizhevsky’s “big breakthrough” changed everything. AlexNet marked the first time in history a machine could identify objects better than a human.

Now that we have computer vision, image sensors have become more important than ever.

**Think about what computer vision does... it transforms every camera lens into a pair of eyes that can understand what it sees.**

Image sensors are no longer simply cameras that take photos. With computer vision, they’re eyeballs that allow machines to “see.”

Images become a whole new input for computers—like numbers or text. Our cameras are the new keyboards. Every image and YouTube video can be searched and analyzed for the first time ever.

Here’s the thing... teaching a computer to identify static images is just the first baby step in this disruptive megatrend. Once you teach a machine to see dogs... you can teach it to see pedestrians and cyclists—which is crucial for self-driving cars.

Now image sensors are flooding into everything from cars... to medical devices... to grocery stores... and we are on the cusp of a computer vision boom.

Take Waymo’s driverless cars for example. Each robotaxi is fitted with 29 cutting-edge image sensors. This allows the cars centralized “brain” to see stop signs from over 1,600 feet away!

Amazon is using computer vision to create checkout-free grocery stores. In Amazon Go stores, cameras equipped with sensors recognize shoppers. They understand when shoppers pick up items or put them back, which allows them to walk out without checking out.

[Computer vision is also leading to mind-blowing breakthroughs in medicine.](#)

In 2018, researchers from the US and Europe taught a computer to diagnose skin cancer more accurately than leading doctors. In short, they showed the computer more than 100,000 images of potentially cancerous skin lesions. The machine had an error rate of just 5%, versus 14% for a team of 58 dermatologists.

*The powerful combination of computer vision and image sensors has handed machines a new superpower.*

Image sensors will soon be in practically every computer in the world—just like almost every machine is hooked up to the internet.

As demand for image sensors soars, a “hall of fame” disruptor stands to make billions.

## **Reinvented: A “hall of fame” disruptor**

Nobutoshi Kihara just wanted to listen to Beethoven’s symphonies during his long intercontinental plane trips without lugging around a giant tape player.

Kihara was the co-founder of Japanese electronics giant **Sony (SONY)**. So in 1978 he had some of its engineers build a prototype. Kihara’s idea led to the creation of one of the most successful products in history—the Sony Walkman.

In 1979, Walkman’s were flying off the shelves for \$200 a piece—over \$700 in today’s money. In fact, when they went on sale at Bloomingdale’s in New York City, the waiting list stretched to two months.

The Walkman was the first real portable music player. Boomboxes had been around for a while, but the handheld tape player changed how we listened to music, forever.

In fact, Sony was the king of making stuff we all wanted for decades.

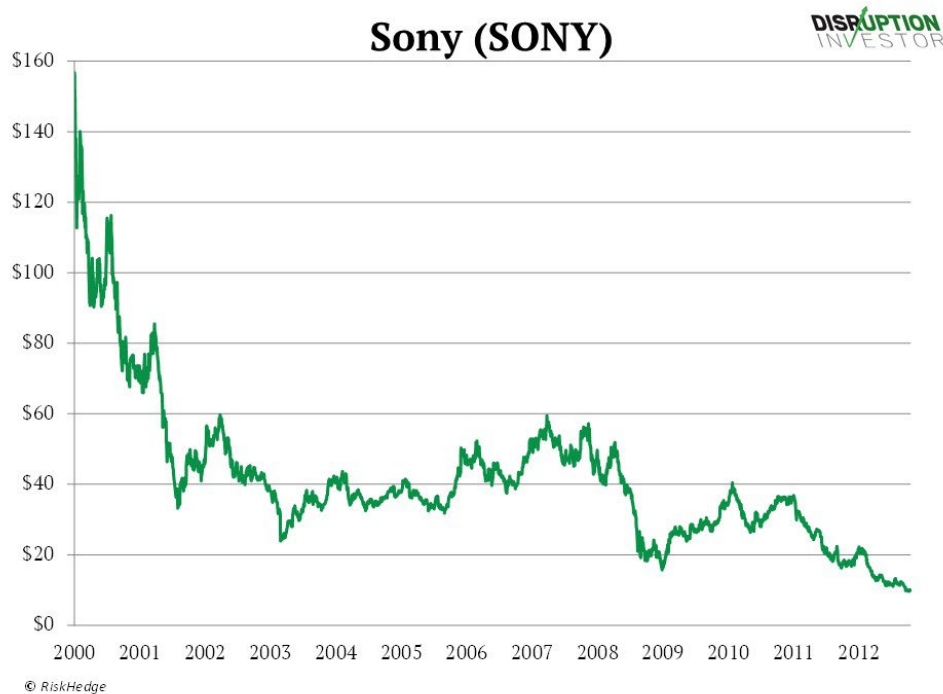
Millions of ‘90s kids begged Santa for a Sony PlayStation video game console. Time magazine ranks the original PlayStation as the #1 bestselling product of all time.

Sony was also the mastermind inventor behind CD players... color TVs... HD camcorders... floppy disks... transistor radios... and tape recorders.

Its stock soared 500% in the ‘90s as it dominated TVs... video games... and portable music players.

But then Sony ran out of big new ideas. It had a series of flops, like blue-ray DVDs. And its Walkman was disrupted by Apple’s iPod.

Its stock began a long slump in 2000 that saw it shed 92% of its value over the next 13 years:



**But after two decades lurking in the shadows, Sony is reinventing itself.**

Its gaming business is firing on all cylinders. Sony doesn't only make money from selling PlayStation consoles anymore. Over the past few years, its gaming business has transformed into a subscription service selling video games and "add-ons" through its online store.

In fact, the PlayStation store is the world's largest video game platform with 95 million monthly active users. This means Sony can make money from gamers long after it has sold them a console. And get this... since 2016 Sony's gaming profits have more than doubled.

Sony is also one of the world's three largest music labels. As you may know, the internet decapitated the music business. Illegal downloading, together with plunging CD sales, caused music studios' profits to collapse over 90%.

But labels are benefitting from the rapid rise in streaming services like Spotify and Apple Music. According to the Recording Industry Association of America, streaming now made up 83% of its studios' revenue in 2020.



## Sony's crown jewel

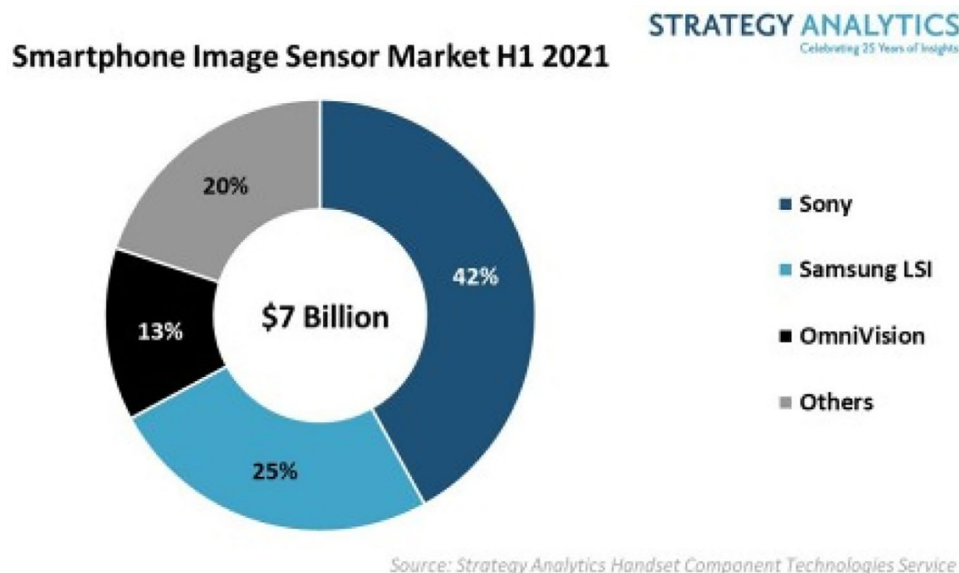
**Image sensors** are the driving force behind Sony's revival into a world-dominating disruptor.

Sony has been making sensors for decades. Its first product was an "electronic eye" installed on All Nippon Airways jumbo jets in 1980 to project images of landing and takeoff from the cockpit.

But for years, image sensors were such a small slice of Sony's business they were a rounding error. In fact, they got lumped in with the "other devices," which included batteries and tape recorders.

But the growth in sensor sales over the past three years has been nothing short of remarkable.

"The global smartphone Image sensor market in H1 2021 clocked a total revenue of \$7 billion," according to the Strategy Analytics Handset Component Technologies service report, and Sony accounts for 42% of it:



Source: Strategy Analytics

In fact, the head of Sony's imaging business recently told Bloomberg: *"We are having to apologize to customers because we just can't make enough."* And it's pumping billions of dollars into equipment to increase output.

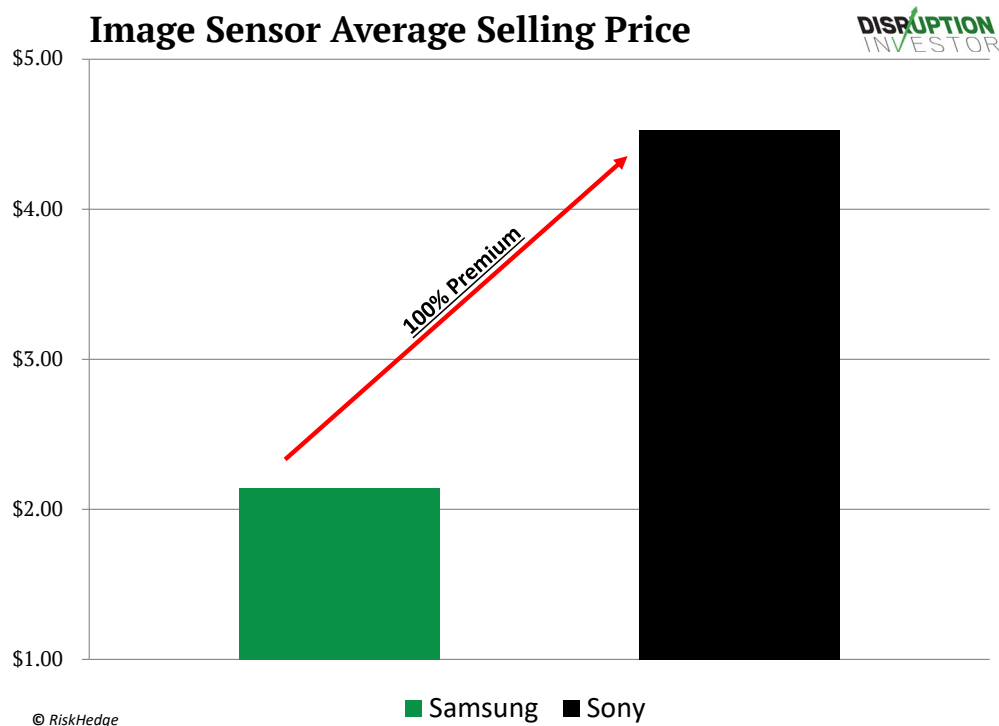
The battle among smartphone firms to make better cameras has been a boon for Sony. It's been the exclusive maker of image sensors for every iPhone since 2010.



Here's the thing... the iPhone 4 had a single 5-megapixel camera. The newest iPhone Pro is kitted out with three 12-megapixel cameras.

Higher-resolution cameras need larger and bigger image sensors—which Sony can charge more for. So as cameras continue to improve, Sony sensor sales will keep soaring.

And when it comes to quality, Sony is in a league of its own. Its image sensors are so far ahead, it charges 2X as much as its closest competitor.



And now Sony is developing a new type of sensor that will supercharge computer vision.

### **Sony's DepthSense sensor enables cameras to see the world in 3D.**

It works by sending out invisible laser pulses and measures how long they take to bounce back off objects. This helps cameras take clearer photos by precisely selecting where to focus, and what background to blur out.

**And in computer vision terms, Sony's 3D sensors will give machines "superhuman" vision.**

The world's largest automaker, Toyota, is already using these sensors in its self-driving cars. The sensors help the car create 3D maps of roads in real time, allowing it to see roads and obstacles at 1.5 times the distance compared to existing sensors.

Sony's 3D sensors are also inside the new Apple iPad Pro for augmented reality applications. And it will be in the new iPhone to construct a more accurate map of your face.

## **3X profits are on the table**

Sony's image sensor wing is firing on all cylinders, and my research suggests the growth is only getting started. The smartphone market will continue to be a huge growth driver for sales as Apple and others race to build better cameras.

But remember, these days sensors aren't only inside cameras. Thanks to the computer vision boom, they're in cars... security cameras... medical devices... drones... grocery stores... and factories.

As the world's premier imaging company, Sony's sensors will be the "eyes" of practically every computer vision device in the world. This will cause Sony's imaging business to double in size many times over the coming years.

When you tack on the rejuvenated gaming and music businesses, you can see Sony's profits have shot up 300% since 2015.

In short, Sony is once again becoming a force to be reckoned with. And investors have sniffed out a disruptor on the rise. Since bottoming in 2012, Sony's stock has shot up over 900%.

Right now, Sony's world-class imaging business is flying under the radar.

But as the computer vision boom takes off, I expect the stock to attract a lot of hype. And with image sensors becoming a larger part of Sony's business, it could easily soar 300%+ in the coming years.

### **Action to take:**

**Buy Sony Corp. (SONY) shares at current market prices. Plan to hold for three to four years.**

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