

2022 COGNEX ANNUAL REPORT PRESENTS

# VISION TREK



**Boldly going where machine vision has not gone before!**

**"VISION TREK"** STARRING **ROBERT J. WILLETT** PRESIDENT, CHIEF EXECUTIVE OFFICER & DIRECTOR

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This Annual Report is a parody and not a real movie poster.



# Captain's Log: Stardate 2022



The starship Cognex embarked on its 2022 vision expedition with stellar expectations. Our mission was to exceed the record revenue we beamed back to Starfleet Headquarters in 2021, which was an exceptional year led by astronomical growth in logistics. As we set a course for the outer reaches of the machine vision galaxy, demand for Cognex products was cosmic. However, hostile forces that would make Khan himself shudder soon tested our courage and resilience.

The two most challenging encounters during our quest were a fire at our primary contract manufacturer, and the decision by a few large logistics customers to reduce their spending plans after two years of heavy investment.

We also confronted a volatile macroeconomic backdrop that presented the following supernovae and blackholes:

- Ongoing component and labor shortages and wage inflation led manufacturers to re-evaluate and delay automation investments in the industries we serve.
- Elevated premiums to buy scarce components through brokers, which negatively impacted gross margins.
- A strong U.S. dollar lowered our reported revenue.

Cognex 2022 Revenue by Industry (percentage rounded to the nearest 5%)



Automotive: 25%  
Consumer Electronics: 20%  
Logistics: 20%  
Medical-Related: 10%  
Other: 25%

In the face of this turbulence, Cognoids (as we call our crew) demonstrated resolve and an ability to move at warp speed. We quickly recovered from the fire due to strong teamwork, long-standing relationships with our suppliers, and a relentless focus on our customers. Cognoids raised the bar for technological excellence, writing a new chapter for machine vision through innovations including Edge Learning™—an example-based method that deploys pre-trained deep-learning models in hardware that is easy to program and operate. We'll conquer teleportation eventually. Understanding the impact shore leave can have on morale, we also came together at celebrations worldwide to commemorate our company's 40th anniversary and toast our four decades of machine vision leadership.

Code-1-Alpha-Zero I Flying Through a Fire Cloud No, it was not a holodeck simulation. In June, a major fire really did occur at our primary contract manufacturer's plant where most Cognex products are assembled.

While no one was injured, and our manufacturing equipment was largely unaffected, a significant portion of our component inventory was destroyed. This included strategic supply and other chips that were already difficult to acquire because of global shortages.

Rather than retreating to the spacedock, crew members immediately executed a "Cognex Maneuver" by responding with perseverance, creativity, and excellence:

- We worked together, across our entire starship, to repurpose a supply chain war room established following the COVID-19 outbreak. This allowed us to gain visibility into order backlog, reach customers to share our expected recovery schedule and updated fulfillment times, and redesign products to lessen dependence on the kinds of components lost.
- We leveraged our strong supplier relationships, which were built upon years of close partnership and our reliable business growth, and their belief in our promising future. This resulted in vendors prioritizing Cognex in the face of an already challenging supply backdrop.
- Our strong balance sheet enabled us to make quick decisions on component purchases and pay above-market prices for essential parts when necessary (thankfully, we never had to pay in Latinum). At all times, our "customer first" mindset was foremost on our minds, even when it meant paying high prices for components or communicating bad news that we had to prematurely end the life of some products and refer customers elsewhere.

Because of fast actions and clear communications across our flight decks, we were producing again just three weeks after the fire and were at full-scale production in less than three months. By the four-month mark, delivery times were back to normal for most Cognex products. Cognoids' "move fast" behavior in the face of this setback resulted in the isolation of the business disruption to the third quarter. We are grateful to report this challenge is now in our starship's rear sensors.

## A Lush and Fertile Planet

After reporting dilithium-fueled growth from logistics of approximately 65% in 2021, we navigated a slowdown during the second half of 2022. A few large e-commerce customers who invested heavily following the pandemic paused investment to absorb excess capacity. These large customers deferred capital investment in fulfillment capabilities, and prioritized productivity and process improvement to reduce costs and improve worker safety.

Despite lower spending by this small but significant subset of customers, the remainder of our revenue from planet logistics grew in 2022. We embarked on probing missions and were able to find new life and civilizations of e-commerce and omnichannel retailers in the Americas, as well as European and Asian logistics customers who are early in their automation voyages.

With humanoid operations currently inhabiting most of the planet, we believe logistics will be our fastest growing end market as we venture further into other planetary quadrants. We remain confident we can gain share and grow this element of our revenue by 30% annually over the long term. We are encouraged by new applications in logistics fulfillment as well as further penetration of logistics segments, such as parcel and post, where we have a small presence

today, but we are developing superior solutions that will position us well for future growth.

## Our Tractor Beam Continues to Bring in New Revenue

While we steer through the meteor shower in logistics, we are excited by the need for machine vision in other key end markets we serve, which is supported by several long-term trends:

- With the world's labor shortage and the cost of labor rising faster than productivity, companies are looking to automation enabled by machine vision to bridge this gap.
- Quality is important to manufacturers; our products help improve our customers' quality by measuring, understanding, and improving their production processes.
- Advancements in our deep learning technology and optics are creating new use cases and greater productivity gains for our customers.
- Companies are diversifying their supply chains and relocating production to lessen risk and be closer to their end customers, resulting in a need for more machine vision solutions.

We believe these trends will expand our estimated \$6.5 billion served market for years to come. Based on our pipeline of new products, focus on high-growth end markets, and the strength of our reputation with leading manufacturers, our target is to grow Cognex revenue by 15% compounded annually over the long term. Despite the near-term challenges, we have positioned Cognex to remain the envy of our entire galaxy.

## Automotive

Yes, human development of shuttle pods still lags behind the rest of the Alpha quadrant. Even so, our revenue from automotive grew in 2022 due to the ongoing global transition to electric vehicles (EVs). This transition led to heightened EV battery production as well as new model introductions across both electric and traditional vehicles. Complemented by the technology we acquired in our purchase of SAC Sirius Advanced Cybernetics GmbH, our deep learning technology enables critical steps for ensuring the safety and performance of EV batteries through defect detection and assembly inspection. Asia's major EV battery manufacturers, that together produce more than 90% of the world's EV batteries, are already Cognex customers. We expect more growth as battery production accelerates in Europe and America.

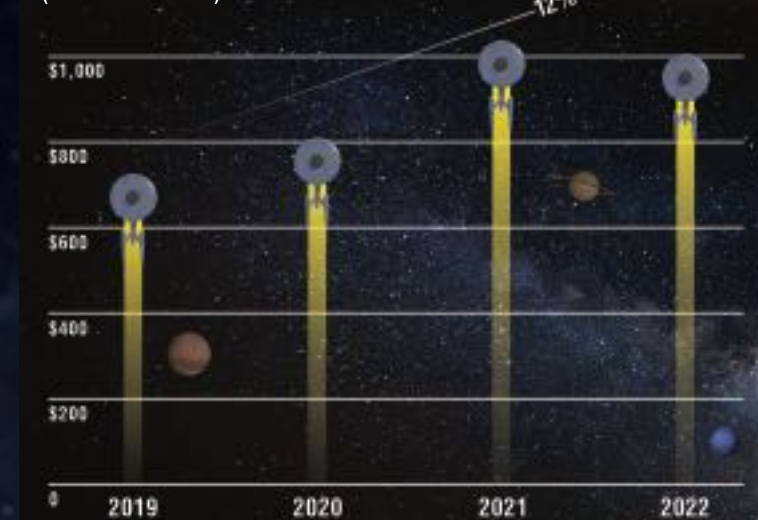
## Consumer Electronics

After-action reports of consumer electronics revenue in 2022 reflected growth in the premium segment of the smartphone market and additional technology introductions where precision manufacturing, rapid ramping of output, and product quality are most prized. Our close relationships with the world's largest and most sophisticated electronics companies position us to play a key role as they create and produce on a planetary scale new devices that are increasingly complex and difficult to manufacture. We will also offer our friendship and aid to inhabitants of new worlds we discover while voyaging deeper into the consumer electronics sector.

## Boldly Going Where Machine Vision Has Not Gone Before

Our success is sustained by routinely expanding the frontiers of machine vision technology. An example is Edge Learning™, a proprietary new technology from Cognex that utilizes pre-trained deep-learning models. Edge Learning™ meaningfully lowers the cost to implement deep learning, as it requires just a few examples rather than the large sets of image data traditionally associated with deep learning. When deployed in smart cameras that are easy to program and operate, such as the Cognex In-Sight® 2800, small and mid-sized manufacturers can access our advanced machine vision tools without requiring a vision expert for installation or operation. You can travel 10,000 light years but you still won't find another company in our market currently offering this technology.

Cognex 4-year Revenue History (dollars in millions)



## It Takes a Crew to Live Long and Prosper

At Cognex, our Prime Directive—Work Hard, Play Hard, Move Fast—inspires everything we do. We are united by a few principles:

- We expect excellence and push each other to solve our customers' most challenging problems. Call it the Cognex Mind Meld.
- We regularly recognize and celebrate the behaviors that uphold our company values.
- We cultivate an environment of collaboration and trust.
- We prioritize hiring for cultural fit, which is key to our strong retention throughout the years.
- We are quirky and different—some of us may even be Vulcan—and we are proud of that.

We prioritize culture in everything we do, from our Ministers of Culture (who foster the Play Hard spirit in our global offices) to our ReCOgnition program (which celebrates employees who exemplify our company values) to Cognex Cares (an employee-led initiative that empowers Cognoids to give back and volunteer in their local communities).

This ethos supports our culture by attracting smart, hardworking people who want to collaborate, do great work, and inspire each other. This leads to retention of top talent. The crew manifest is filled with accomplished engineers eager to work with our customers, who are among the most sophisticated engineering and manufacturing companies in the world.

This fuels our revenue growth, which in turn enables further investment in culture and our continued success.

## To Preserve and Enhance Vision

Despite intergalactic turbulence in 2022, we believe we have done some of our best work and positioned ourselves well for future voyages. We continue to invest in our engineering and sales teams; there are large trends that are in our favor; our machine vision products are central to the future of manufacturing; and we have an armament of competitive advantages.

We remain passionate about solving our customers' most complex manufacturing challenges and strengthening our reputation as the foremost machine vision company in the cosmos.

*David Willett*

To Preserve and Enhance Vision!  
Captain Robert J. Willett, commanding officer

# These are the voyages of the starship Cognex



CAPTAIN... THE RECOGNITION PROTOCOL HAS BEEN ACTIVATED! THE CREW IS STANDING BY FOR YOUR ORDERS!

ALL ENGINES FULL SPEED AHEAD! MAKE IT SO, SHEILA!

## Attention all Decks

Since Cognex's founding more than 40 years ago, we have invested consistently to helm a ship where Cognoids are inspired to think differently and lean on each other to solve tough problems. Our Chief Culture Officer leads a global team of Cognoids we call the Ministers of Culture (MOC) who are entrusted to preserve and enhance our unique culture.

## Surviving a Supernova

Deflector shields could not stop the June fire at our contract manufacturer's plant. This was a serious situation that destroyed a significant portion of our component inventory, impacting many Cognex products. Cognex's culture shined during this challenging time as Cognoids companywide stopped up to man their battle stations and support customers and source supply.

## Edge of the Universe

Every starfleet captain knows the importance of running a good systems check. With Cognex's Edge Intelligence™ (EI) data analytics software platform, customers can measure the performance of their Cognex devices and conduct full device management—all within a no-code, easy-to-deploy solution. Traction for EI has been particularly strong in logistics, where a high volume of Cognex devices can be deployed in very complex environments. We intend to extend EI across all Cognex products so more customers can be in command of their flight decks.



WHAT'S GOING ON DOWN THERE, PAUL?

IT APPEARS TERRANS HAVE EVOLVED SIGNIFICANTLY, AND SO HAVE THEIR VEHICLES! A HIGHLY LOGICAL DEVELOPMENT.

## COME IN STARSHIP COGNEX: WHAT CAN YOU REPORT, CAPTAIN?



...WILLETT TO COGCOMMAND: THE FIRE IS CONTAINED. RE-ENGAGING INNOVATION MODE.

DON'T WORRY JOERG, THE IN-SIGHT 2800 CAN'T READ YOUR MIND.

NOPE, IT'S ALL IN YOUR HEAD.

## TECHNOLOGICAL EDGE...



I'M PRETTY SURE IT CAN.

## Incoming Transmission

As the vast number of electronic parts orbiting automobiles continues to rise, Cognex is positioned to help. Innovations in safety, driver assist, and entertainment features are increasing the number of items to be placed, tracked, measured, and inspected by machine vision. And the transition from gas engines to electric is driving a multi-year investment in battery manufacturing equipment.

## Scan Me Up!

Cognex's In-Sight® 2800 smart cameras integrate proprietary Edge Learning™ technology, making powerful deep learning vision tools much simpler to use and train. That's right! We've taken a shrink ray to the massive image library and fan-cooled GPU previously required to operate deep learning. Now, manufacturers can quickly automate inspection tasks of varying complexity with as few as five images. Even a Klingon can use it!

## Ensuring a Class M Planet

Cognex is committed to ensuring our planet remains safe and inhabitable for humanoids and all other lifeforms. Our machine vision technology plays an important role in making manufacturing more efficient and reducing its environmental impact. In 2022, we published our first comprehensive sustainability report that demonstrates the strong progress we are making in communicating our ESG journey. We have much to be proud of, and more progress to make as we continue to focus on our sustainability goals.

A copy of the Annual Report on Form 10-K filed with the Securities and Exchange Commission is available free of charge upon written request to Cognex Investor Relations at One Vision Drive, Natick, MA 01760, or via online request at [www.cognex.com/investor](http://www.cognex.com/investor).

This report, including the CEO's letter, contains "forward-looking statements" within the meaning of the Securities Act of 1933 and the Securities Exchange Act of 1934. For further information, please see the section entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the Form 10-K. A discussion regarding risks associated with forward-looking statements is included under the heading "Forward-Looking Statements." All information in this report is subject to change without notice.

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