

IoT Community

IoT Innovation in Pharma

Areas of Innovation Included:

- Manufacturing Automation
- Cold Chain Logistics
- IoT Smart Packaging
- Supply Chain Management
- Connected Care

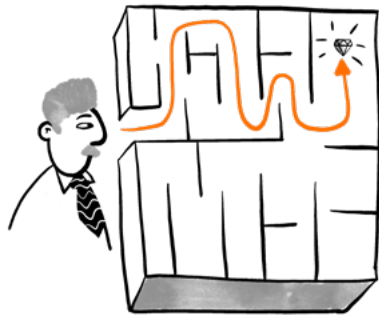


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(Corporate Gold Member of the IoT Community)

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Manufacturing Automation

“Manufacturing Automation” refers to the utilization of hardware and software to automate manufacturing processes.

It can include sensor technology, robotics, CAD and CAM technologies, and industrial automation, among others.

By implementing automation, manufacturing plants can increase production capacity while, at the same time, provide cost and time efficiency.

From the Valuer platform:

Average funding of the
Manufacturing Automation companies

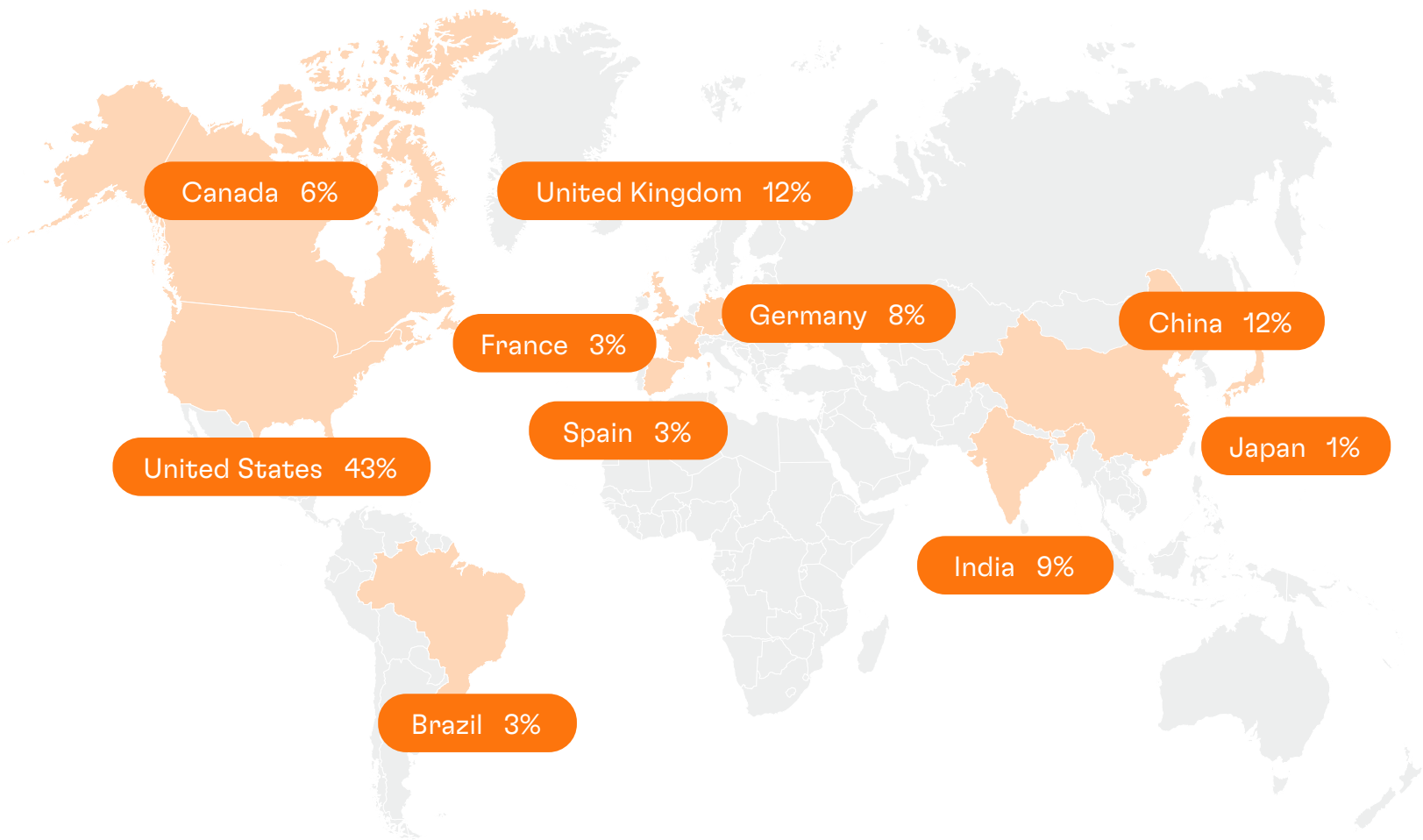
\$10,782,598 USD

Technology Trends:

[i](#) Click on the tech trends to learn more

- **3D printing in pharma:** Extrusion molding printing (EMP) and drop on powder (DOP) are some common 3D printing techniques utilized in the industry for developing diverse pharmaceuticals.
- **Warehouse robotics:** Specialized robotic systems used for automating mundane manufacturing tasks such as sorting, transportation, and picking.

10 countries with the most Manufacturing Automation companies on the Valuer platform:





Company Highlight:

Phizzle

Corporate Gold Member of the IoT Community

Year of inception:
2005

Company stage:
Growth/Expansion

Team size:
27

Location:
San Francisco, CA, United States

Funding:
18,200,000 USD

Website:
phizzle.com

Phizzle has developed the EDGMaker – a SaaS-based IoT solution that remotely controls and operates multiple types and vendors of scientific Lab instruments from a unified cloud-based platform. Powered by a patent-pending software stack, the product conducts fully digitized testing and compliance tasks to reduce human errors and labor.

The company’s main objective is to enable more scalable IoT deployments by leveraging a software stack that allows low-wattage edge devices to deliver server-grade performance. Phizzle was founded in 2005 and employs a team of 27 members, operating from the headquarters in San Francisco, California.

Customers:

This company has not disclosed information for its client list.

Business Model

The company’s business model is centered around the following characteristics:

- Phizzle operates on a B2B model, targeting customers primarily in the pharmaceutical manufacturing industry, with plans to expand across other verticals, including manufacturing, cleanrooms, transportation infrastructure, food production, and smart cities.
- The EDGMaker Digital Air Series caters to customers whose work must align with different regulatory requirements, namely healthcare cleanrooms and sterile compounding pharmacies in hospitals.
- In terms of revenue model, Phizzle deploys a platform, including a programmed UI, in a Kubernetes cluster designed for high availability based on a microservice architecture. The Phizzle

platform can be run on-premise or in the cloud and is charged based on a monthly recurring license.

- In addition, Phizzle sells device agents for scientific instruments that automate and operate different scientific instruments. The agents have been designed to connect multi-vendor, multi-model instruments onto one common platform, the Phizzle EDGMaker. Phizzle charges a monthly recurring license fee for each scientific instrument connected to the EDGMaker platform using their device agents. Additionally, data can be collected in existing business systems through an open API.

Value Proposition

The company communicates the following as its main value propositions:

- The SaaS-based solution can remotely operate multiple instruments and systems from a single, cloud-based user interface, enabling synchronized control and data integration from various heterogeneous devices into an automated workflow.
- The product features central control and a user-friendly human interface that functions independently from the facility’s building management system. Such an agnostic approach to capturing and logging data from various devices enables the end-user to integrate the software

system within their existing production process.

- Key benefits include ensured compliance and safety, end-to-end network security, reduced OPEX, and an intuitive user interface that delivers actionable insight for greater performance.
- To accelerate the market penetration, the company has partnered with high-profile partners, including Intel and Cisco; together, they will pilot customers and expand the product visibility and its ROI capabilities.

Product Portfolio

Phizzle’s offering encompasses an IoT solution that operates multi-vendor, multi-device lab instruments remotely. The product was designed to enable pharma manufacturers to digitalize data, enhance device automation and integrate multiple systems into a single-control user interface. By capturing data directly from instruments and integrating the results with databases, the EDGMaker aims to reduce the reliance on paper while maintaining method compliance and enabling two-way communication with LIMS, ERP, EM, and more. Such capabilities suit pharma manufacturing applications, improve indoor air quality, and monitor cleanrooms across ISO classifications.

The lab instruments that Phizzle supports can be categorized into:

1. Particle Counters - supporting brands such as AeroTrak, MetOne, Climet, and Lasair;
2. pH Meters - supporting brands such as Mettler Toledo, and
3. Balances - supporting brands such as Mettler Toledo, Kern Son.

EDGMaker

The vision behind Phizzle’s EDGMaker is to strengthen the reliability of automated IoT devices to perform in mission-critical environments. The company harnesses regenerative engineering to achieve such performance—an approach that enables pharma manufacturers to automate edge devices, essentially leading to significant OPEX savings. Empowered by self-optimizing, edge computing-designated IoT software, the EDGMaker tackles technical challenges associated with low-power and high-power data surges on edge. Namely, this attains automation and digitization of thousands of different lab devices, which cannot be achieved using traditional edge architectures.

Featured Benefits

The flagship product grants benefits in four key areas:

- Compliance and safety
- Network security
- Actionable insight and smart decision-making
- OPEX savings

By employing trackable and scalable reporting for each platform-connected device, the EDGMaker saves resources on reporting and compliance checks, which decreases the likelihood of human error. Furthermore, the product utilizes a proprietary software stack with built-in TLS encryption, and Kafka and Kubernetes tools. It is integrated with Cisco’s Digital Network Architecture (DNA), enabling the system to support enhanced data integrity and protection. In addition, the software harnesses machine learning to categorize and order overlapping interests, which empowers the system with capabilities to implement real-time operational insights and prioritize essential functions during a crisis in a manner suitable for mission-critical environments. Another notable benefit of the product is that it can automate manual tasks and edge maintenance operations, enabling manufacturing enterprises to significantly reduce OPEX expenditures and reduce the hours spent in engineering.

The company has also developed a self-service demo to demonstrate the all-encompassing list of EDGMaker’s digital tools and its ROI capabilities. The demo encompasses a feature walkthrough for three application areas:

- Automation discovery for pharmaceutical instrumentation
- Collecting scientific data at the IoT Edge
- Optimizing workflows with closed-loop automation

Market Opportunities

The company targets the global Industrial Internet-of-Things (IIoT) market.

- According to Grand View Research, the global industrial Internet-of-Things (IIoT) market will reach \$1.11 trillion by 2028, growing at a CAGR of 22.8% between 2021 and 2028.
- The market growth is attributed to the increased adoption of automation, predictive maintenance, and efficient supply chain management across industries.

- Moreover, Machine-to-Machine (M2M) communication and its increasing adoption across automotive, utilities, home automation, healthcare, and security will propel the adoption of IIoT further.
- Key market players include ABB, GE, IBM, Intel, Rockwell Automation, Siemens AG, and Microsoft.

Achievements

To date, the company has achieved the following milestones:

- In 2021, Phizzle was named a “Silver Partner” in the HPE Technology Partner Program.
- The company was listed among the “Ten Hottest IoT Startups of 2020” and “Ten Coolest IoT Startups of 2020” by CRN.
- Phizzle was also recognized as a ‘Representative vendor in the edge architecture’ at Gartner’s IT Infrastructure, Operations & Cloud Strategies Conference in 2019.



Executive Team

Ben Davis

Co-Founder & CEO

Experience:

- Co-Founder & VP of Global Licensing at Pixiem
- District Sales Manager at Integrated Development Enterprise
- Account Executive at EMC Corporation, Inc.
- Territory Account Manager at Parametric Technology
- Authorized Xerox Agent at Britt Business Systems

Academic Background:

- BA in Business from Walsh University

Ryan Brady

CTO

Experience:

- System Architect at Phizzle
- Forensic 3D Animator and Technical Director at High Impact
- Lab System Administrator at the University of Colorado Denver
- Video Producer at The Guerrilla Group

Academic Background:

- BA in 3D Animation from the University of Colorado Denver

Cold Chain Logistics

“Cold Chain Logistics” involves transporting and distributing temperature-sensitive goods and products across the supply chain.

It is used in the food, healthcare, and pharmaceutical industries to track and monitor conditions such as temperature and humidity in coolers, storage units, and warehouses.

The goods are transported through thermal and refrigerated packaging methods, including cold storage, cooling systems, cold transport, cold processing, and cold distribution.

From the Valuer platform:

Average funding of the Cold Chain Logistics companies

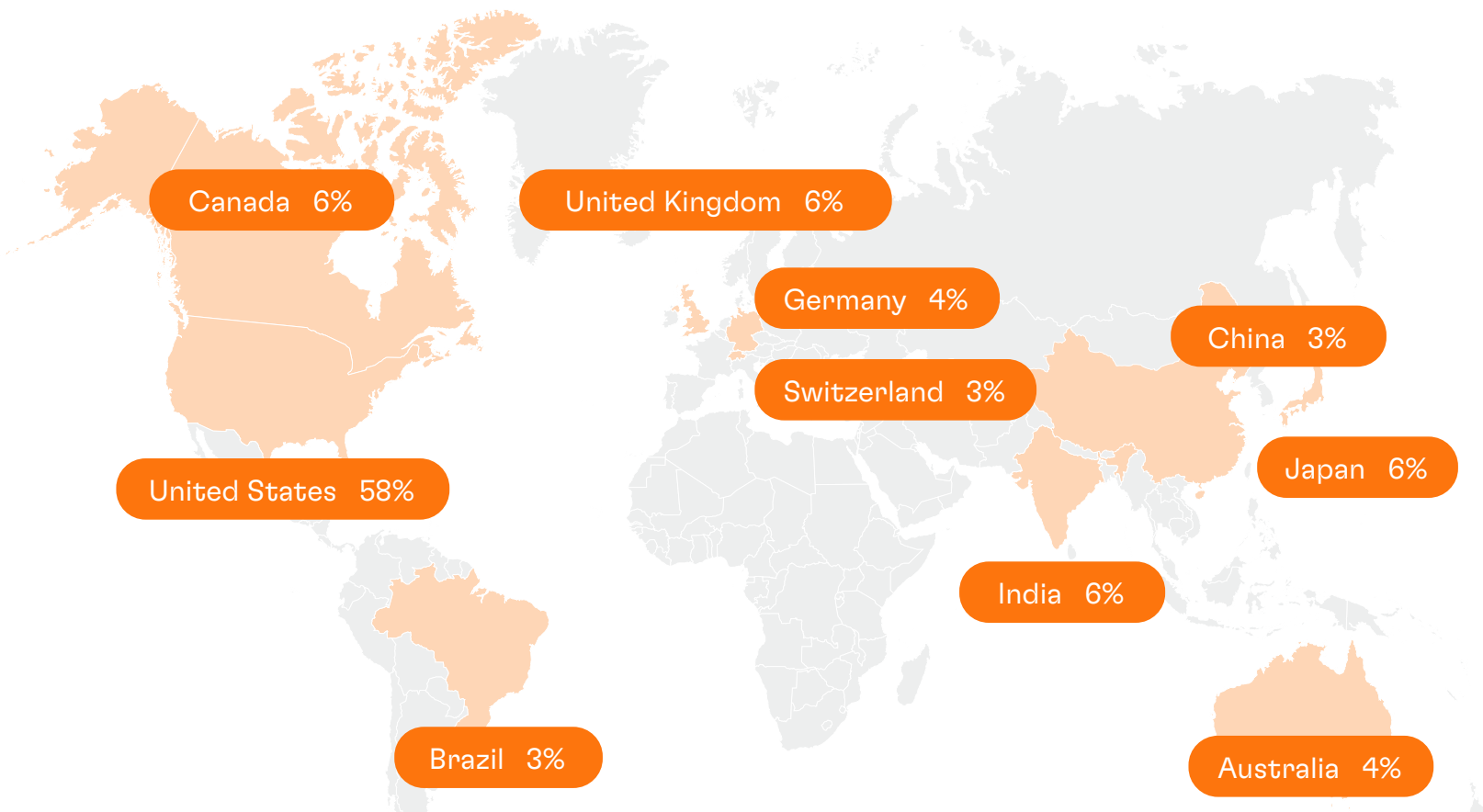
\$7,881,548 USD

Technology Trends:

[i](#) Click on the tech trends to learn more

- **Data loggers:** Small electronic devices installed in the storage rooms or transportation vehicles to map data on industry standards compliance like temperature and humidity.
- **Active packaging:** Adding a protective layer in/on the packaging to protect pharmaceuticals from oxygen and/or moisture, keep the prescribed temperature, and reduce potential damages.
- **Pharmacovigilance:** A set of activities that ensure drug safety compliance, including detection, assessment, understanding, and prevention of adverse effects or issues.

10 countries with the most Cold Chain Logistics companies on the Valuer platform:





Company Highlight:

CubeWorks

Year of inception:
2013

Company stage:
Growth/Expansion

Team size:
10

Location:
Ann Arbor, MI, United States

Funding:
5,500,000 USD

Website:
cubeworks.io

CubeWorks is a technology company specialized in developing millimeter-scale smart sensing solutions. Their proprietary and ultra-low-power CubiSens platform enables ubiquitous wireless sensing, smart processing, and energy harvesting capabilities in different micro-scale form factors.

CubeWorks was founded by pioneering researchers at the University of Michigan, and the company uses core technology stemming from more than a decade of ultra-low-power VLSI circuit research that enables ultra-low power wireless sensors with unprecedented form factors and battery life. Headquartered in Ann Arbor (MI), CubeWorks employs a team of ten members.

Customers:



AstraZeneca



Roche



Mayo Clinic



The National
Institutes of Health

Business Model

- The company’s business model is centered around the following characteristics:
- CubeWorks operates on a B2B model, catering to clients in the biopharma, research, production, and logistics industries.
 - Some of the company’s most notable clients include AstraZeneca, Roche, UC San Diego, Mayo Clinic, UCLA, and the National Institutes of Health (NIH).

- The company’s main revenues are based on direct sales, with the quotes being tailored according to the number of sensors needed for the application.

Value Proposition

- The company communicates the following as its main value propositions:
- With its sensors, CubeWorks aims to fill the market gap in terms of sensor size, developing micro-scale sensor products that are easy to use, versatile, and durable.
 - According to the company, its integrated circuit (IC) designs and techniques use 1,000 times less power than commercially available components and solutions.

- Another benefit of CubeWorks’ sensors is its computer-on-a-chip technology, which allows its products to intelligently manage sensing functionalities and use advanced wireless protocols to transmit data up to 200 meters in distance.

Product Portfolio

CubeWorks developed the CubiSens platform, a portfolio of ultra-low-power and smart wireless sensors. The sensors measure millimeters in scale, with up to 200-meters of wireless range and a battery life of up to seven years. Additionally, they are applied with waterproof epoxy. The company's portfolio consists of four sensors:

1. CubiSens™ XT1
2. CubiSens™ AH110
3. CubiSens™ TS110
4. CubiSens™ TC110

CubiSens™ XT1

The company's most recent product, the CubiSens XT1, is a tiny temperature tracker that can be attached to shipments of biopharmaceuticals and individual vials and syringes, providing temperature history for a product's lifetime. Data from the XT1 is available instantaneously through the XTScan App, enabling pharmaceutical manufacturers and logistics providers to ensure temperature compliance and authenticate products. In conjunction with IoT hardware and infrastructure, CubeWorks plans to launch a cloud-based SaaS platform for supply chain management and optimization in the coming period. With the cloud database and comprehensive AI-driven data analytics, the company will provide end-to-end real-time tracking of biopharmaceuticals for complete visibility of the supply chain.

2. CubiSens™ AH110

CubiSens AH110 is the first sensor in CubeWorks' lineup, serving as the company's most versatile option. The sensor can monitor temperature, humidity, and continuous motion. Humidity and temperature can be measured with $\pm 1.5\%$ RH and 0.1°C accuracy, respectively, while the motion detection is based on a 3-axis accelerometer. The sensor's

measurement interval is customizable, with a configurable alarm trigger count and motion alarm muting preventing unnecessary battery drainage in high-vibration environments. The AH110 is promoted as a discreet, low-maintenance wireless sensor, automatically alerting customers for metrics such as dangerous environmental levels and unauthorized movement.

3. CubiSens™ TS110

The TS110 is an ultra-small implantable wireless temperature sensor that can monitor, log, and transmit temperature data in real time. It is encapsulated in a biocompatible epoxy, making it ideal for in-vivo studies for animal models, requiring minimal incision for implantation. Going into its specifics, the TS110 measures $7.5 \times 7.5 \times 4.2$ mm, has a temperature accuracy of $\pm 0.1^\circ\text{C}$, can transmit data to a gateway up to 100 meters, and has more than one year of battery life.

4. CubiSens™ TC110

Depicted as the world's smallest sensor, the TC110 is a configurable and rechargeable smart temperature logger ideal for continuous biological and reagent process monitoring. Because it is encapsulated in a biocompatible epoxy, it can be directly immersed in fluid samples, delivering rapid, direct, and accurate measurements. The sensor can measure temperature with 0.05°C resolution at up to 1 sample/sec with 1% timing accuracy between 0°C and 105°C . Even though the sensor is tiny, up to 8,000 data samples can be stored on the TC110, each available for download to a base station. The sensor's battery life varies from 2.4 hours to 5 weeks depending on the sampling rate and the ambient operating temperature, and the TC110 is rechargeable for up to one year.

Market Opportunities

The company targets the global market for smart sensors.

- According to Markets and Markets, the smart sensors market was valued at \$45.8 billion in 2022 and is expected to reach \$104.5 billion by 2027.
- This CAGR of 17.9% during the forecast period is accredited to the surging demand for smart sensors in IoT-based devices and consumer electronics, the high demand for smart sensors by automotive manufacturers to deliver enhanced safety and comfort, and the accelerated use of wireless technology to monitor and control security devices equipped with smart sensors.
- Some notable players in the market include Analog Devices, Infineon Technologies, STMicroelectronics, Siemens AG, NXP Semiconductors, and Robert Bosch GmbH.

Achievements

To date, the company has achieved the following milestones:

- For the 2021/2022 edition, CubeWorks was listed in Renaissance Venture Capital's Hotlist of Tech Companies.
- In 2022, the company was also featured in "Top Startups to Watch" by Purpose Jobs.
- The year before, in 2021, the web portal BestStartup.us. listed the company in "Best Michigan-based Electronics Companies and Startups."
- The National Science Foundation awarded CubeWorks in 2016 for the SBIR Phase II: Millimeter-Scale Wireless Sensor Node for Intracranial Pressure Monitoring project.



Executive Team 1/2

Gyouho Kim, PhD
CEO

Experience:

- Assistant Research Scientist at the University of Michigan
- Research Fellow at the University of Michigan
- Research Summer Intern at IBM
- Interim Engineering Intern at Qualcomm

Academic Background:

- PhD in Electrical Engineering and Computer Science from the University of Michigan
- BS in Electrical Engineering and Computer Science from the University of Michigan

ZhiYoong Foo, PhD
CTO & COO

Experience:

- Research Fellow at University of Michigan
- Research and Development Intern at ARM

Academic Background:

- PhD in Electrical and Electronics Engineering from the University of Michigan
- MSc in Electrical and Electronics Engineering from the University of Michigan
- BS in Electrical and Electronics Engineering from the University of Michigan



Executive Team 2/2

David Blaauw, PhD
Chief Scientist

Experience:

- Kensall D. Wise Collegiate Professor of Electrical Engineering and Computer Science at the University of Michigan
- Director, Michigan Integrated Circuits Lab
- IEEE Fellow
- Involved with the launch of successful startups Ambiq Micro and Mythic
- Manager at Motorola

Academic Background:

- PhD in Computer Science from the University of Illinois
- BS in Physics and Computer Science from Duke University

IoT Smart Packaging

“IoT Smart Packaging” refers to packaging systems with embedded sensor technology. The sensors provide data-based insights in terms of extending shelf life, monitoring product freshness, providing information on quality, and improving product safety.

This type of packaging can be used in various industries requiring strict quality parameters, such as food production and pharmaceuticals.

From the Valuer platform:

Average funding of the IoT Smart Packaging companies

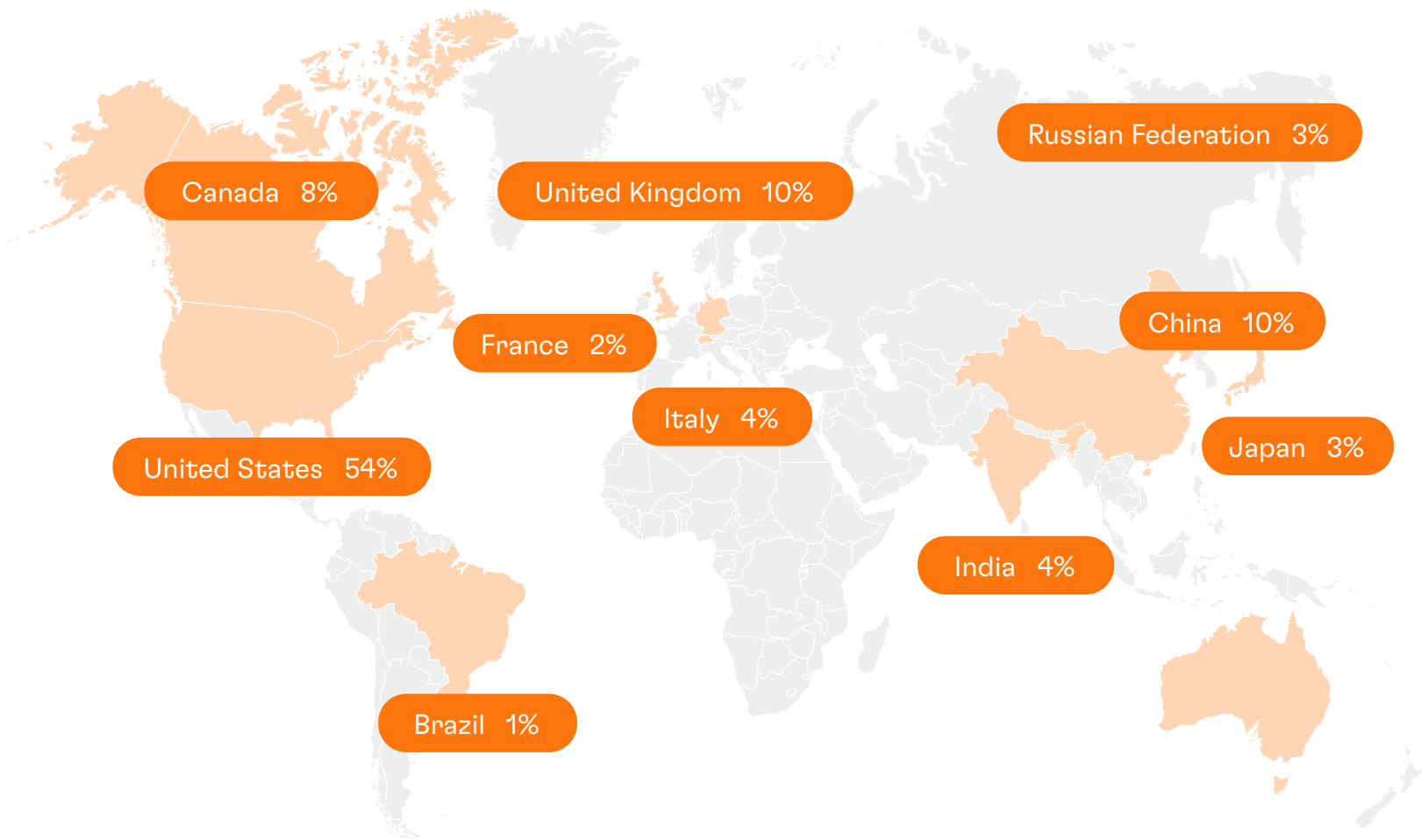
\$4,844,482 USD

Technology Trends:

[Click on the tech trends to learn more](#)

- **Radio-frequency identification (RFID):** A form of wireless communication used for item identification, which is often invisible to consumers, but helps the industry track and manage medications.
- **Printed electronics:** Thin film electronics that are usually lightweight, stretchable, flexible, and sometimes even biodegradable. They can be used in pharma for temper, dosage, and temperature detection, among others.

10 countries with the most IoT Smart Packaging companies on the Valuer platform:





Company Highlight:

ImpacX

Year of inception:
2015

Company stage:
Growth/Expansion

Team size:
27

Location:
Rehovot, Israel

Funding:
Public

Website:
impacx.io

ImpacX is an IoT company providing clients with an end-to-end platform for smart packaging. It enables brand developers to connect with the customers better and gain a data-backed understanding of when and how certain products are being used.

The company was initially established in 2015 under the Water.io brand to provide a tech-based solution for hydration. Realizing the potential of its technology, the company expanded the applications to the pharma, beauty, cleaning, and other industries. Headquartered in Rehovot, Israel, ImpacX operates with a team of 27 members.

Customers:



Bayer



Danone

Business Model

The company’s business model is centered around the following characteristics:

- ImpacX is a B2B company that targets several industries via its brands Water.io and Vitamins.io, focusing on pharma, beauty, and cleaning product manufacturers. The company is also starting to conduct D2C operations through the Water.io smart water bottle.

- Both brands are available via an annual subscription plan, with Vitamins.io also being offered through a 90-day pilot program at a fixed price of \$6,000 per 500 reusable containers.
- In October 2021, the company announced its trading in the TASE’s Software and Internet Subsector, with a total market cap of NIS 93 billion. This comes after a successful rebranding strategy taking place at the end of 2020.

Value Proposition

The company communicates the following as its main value propositions:

- ImpacX is focused on wellness products, with a vision of sustainability. To do so, they bring the customer, the product, and the brand together in an IoT-powered ecosystem comprising a sustainable bottle, a smartphone app, and a brand interface.
- The platform gathers insights about different user consumption patterns that enable pharma, beauty, and cleaning brands to tailor relevant, personalized experiences and develop targeted promotional campaigns.

- In the case of Water.io, ImpacX records a 20% increased consumption, an 80% adherence to bottle reminders as opposed to the industry’s 50%, and increased app use.
- Regarding Vitamin.io, the company states better overall compliance (73% compared to the industry average of 40%), 34% in customer retention, and a 23% increase in engagement compliance.

Product Portfolio

ImpacX promotes a new model of customer relations management based upon the data gathered through the Smart Packaging technology, which turns products into a major data source and provides brands with critical information on user behavior. Recent developments in the Internet of Things (IoT) and Smart Packaging sphere enabled the Internet of Packaging trend, allowing consumers to interact with the products in an intuitive, customized, and personalized way.

Riding this technology wave, ImpacX is providing an end-to-end solution comprising:

1. IoT sensors for smart packaging,
2. Smartphone app, and
3. Brand dashboard.

Based on this technology, ImpacX offers two brands:

1. Water.io - a smart reusable water bottle, and
2. Vitamin.io - a smart bottle for vitamin supplements.

ImpacX developed a patented smart packaging platform that transforms any bottle into a smart package, whether it contains liquid, powder, pills, or capsules. The company's platform includes sensors, a mobile app, a brand dashboard, cloud servers, and algorithms.

The ImpacX Technology

The smart packaging solutions are equipped with small, in-house developed IoT sensors that are either built-in or attached to existing bottle caps. The devices measure the contents in the packaging without touching the material

and interact with the consumer via light, vibrations, or alerts, connecting the package to any smart device.

The mobile application communicates with the smart packaging platform, building a user profile and gathering information from the environment to send to the company's servers. It enables brands to directly communicate with consumers to offer promotions, news, and location-based recommendations.

Servers and dashboards are another integral part of ImpacX's platform, used to collect and store information. Machine learning algorithms crunch the data and deliver it to customers, including intelligent reminders for hydration or supplement consumption and automatic reordering of the next product, which helps increase brand loyalty, customer engagement, and sales.

IoT-Enabled Products

ImpacX offers two products:

1. Water.io uses smart packaging to turn traditional water bottles into smart, Bluetooth-connected reusable bottles that blink for a hydration reminder and have a cap that measures liquid level. The mobile app coaches customers on wellness and pushes hydration-related notifications.
2. Vitamins.io is a product developed for pharmaceutical businesses that want to broaden the understanding of their customer base, increase sales, and turn toward more sustainable practices regarding plastic waste. Like Water.io, it converts standard packages into smart ones, using the mobile app for user assistance and leveraging a useful brand interface.

Market Opportunities

The company targets the global smart packaging market.

- According to a report by Allied Market Research, the global smart packaging market is expected to grow at a CAGR of 5.5% between 2021 and 2030. Valued at \$22.3 billion in 2020, it is expected to reach \$38.7 billion by 2030.
- The key market drivers for the forecasted period are expected to be rooted in the changing lifestyle of customers. These changes are to be based upon four aspects of food packaging including convenience, communication and marketing, containment, and protection and preservation.

- Major players in this growing market are projected to be 3M, Avery Dennison Corporation, Ball Corporation, BASF SE, Crown, International Paper, R.R. Donnelley & Sons Company.

Achievements

To date, the company has achieved the following milestones:

- In 2020, ImpacX was selected a finalist in the “Best Closure” category at the World BEVERAGE Innovation Awards.
- The company was also selected a finalist in the “Startup” Category at Nutra Ingredients Awards 2020.
- ImpacX won Best Cap/Closure at Innobev Awards 2018.

- In 2017, the company won the Special IPA Jury Award.
- That same year, ImpacX was selected a finalist in the “Best Technology Innovation” category at the World BEVERAGE Innovation Awards.



Executive Team 1/2

Kobi Bentkovski

Co-Founder & CEO

Experience:

- Co-Founder and VP of R&D at MTeye Security LTD
- Director of R&D at MTI Computers and Software Services LTD
- Senior Engineer at Smart Link
- Development Engineer and Team Leader at Israeli Military Intelligence - Unit 8200

Academic Background:

- Executive MBA from Ben-Gurion University of the Negev
- MSc in Electrical Engineering from Tel Aviv University
- BSc in Electrical Engineering from Tel Aviv University

Yoav Hoshen

Co-Founder & VP Sales and Business Development

Experience:

- Co-Founder and Co-CEO at Superb Reality
- Founder and Strategy and Business Development Consultant at Hoshen.biz
- Co-Founder, Board Member, and Senior VP of Business Development at Beyond Verbal Communication
- Senior VP of Sales and Business Development at PointGrab
- Board Member and VP of Business Development and Sales at EPOS Technologies
- Director of Marketing at Converse Technology and Orsus Solutions

Academic Background:

- LLB in Law from Tel Aviv University



Executive Team 2/2

Nimrod Kaplan

Co-Founder & CTO

Experience:

- Owner at XOBOXO Ltd
- CTO and Advisor at Backed Inc.
- CTO and COO at ezbob
- VP of R&D and Product Manager at Investment Technology Group, Inc.
- Development Manager at Alexandria
- Software Engineer at Amdocs and FCT Solutions

Academic Background:

- BSc in Computer Science and Statistics from Bar-Ilan University

Iftah Akram

CMO

Experience:

- Head of Marketing at AposHealth
- Founder and CEO at META4
- Head of Media at Allenby Concept House
- Creative Director at Bluedot Studio
- Account Strategist at Lemel Cohen Advertising

Academic Background:

- Bachelor's Degree in Business Management and Communication

Supply Chain Management

“Supply Chain Management” covers the process of managing the flow of goods and services.

It includes the transport and storage of raw materials, work-in-process inventory, and finished goods, closing the circle from the materials’ point of origin to the point of consumption.

It is streamlined by deploying novel technologies, for instance, data collection and processing, automation, and other tools for forecasting demand more accurately.

From the Valuer platform:

Average funding of the Supply Chain Management companies

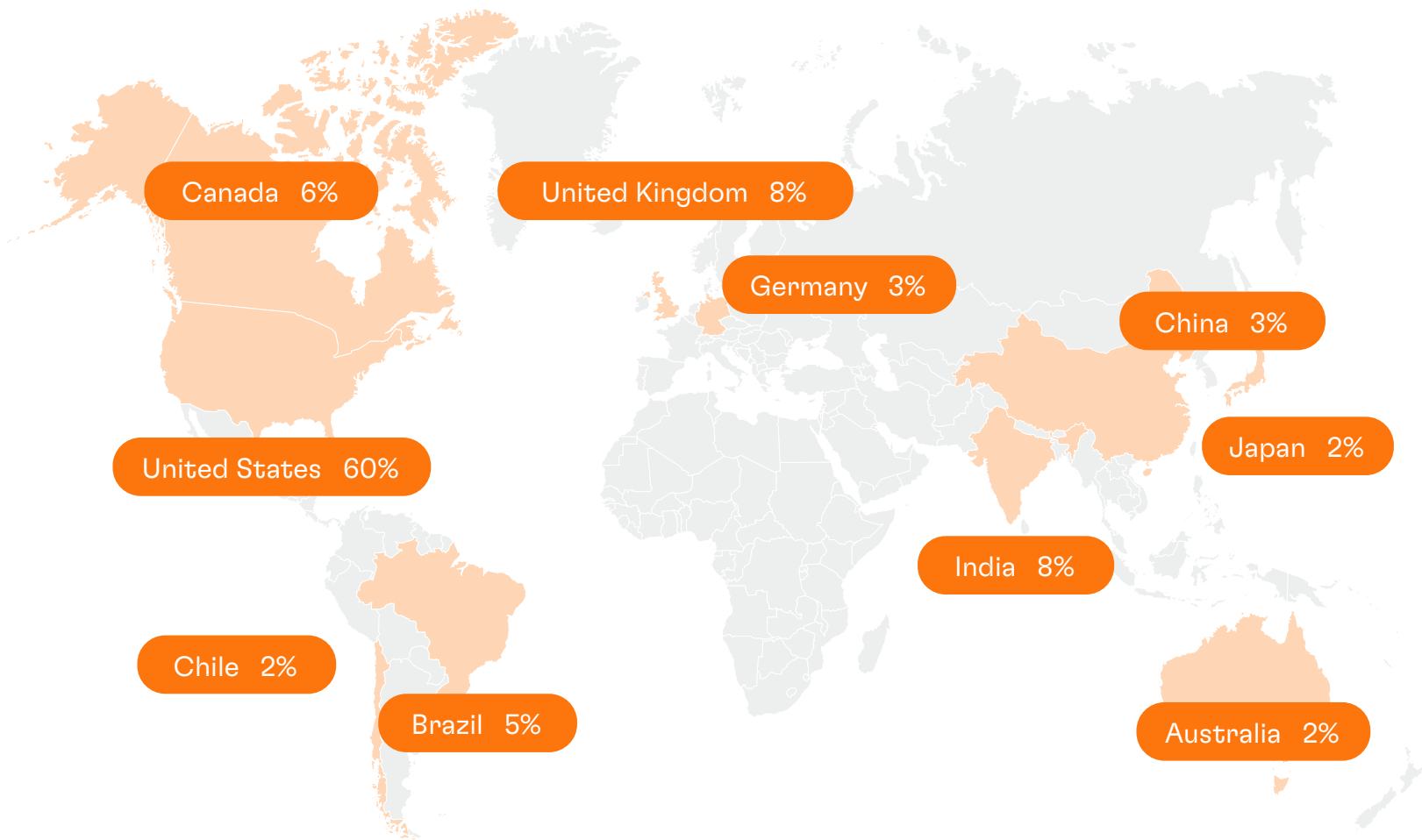
\$8,896,131 USD

Technology Trends:

[Click on the tech trends to learn more](#)

- **Manufacturing Execution Systems (MES):** Software solutions that enable effective interconnectedness between different manufacturing systems/departments covering operations, quality, maintenance, and inventory processes.
- **Transportation Management Systems (TMS):** Software solutions that help the industry optimize the physical movements of pharmaceuticals and enhance the planning, procurement, and logistics management.

10 countries with the most Supply Chain Management companies on the Valuer platform:





Company Highlight:

Wiliot

Year of inception:
2017

Location:
Tel Aviv, Israel

Company stage:
Growth/Expansion

Funding:
269,000,000 USD

Team size:
118

Website:
wiliot.com

Wiliot developed a SaaS solution consisting of a cloud platform and IoT-powered tagging stamps to empower wholesalers with intelligence by connecting them to the Internet and transforming how their products are made, distributed, sold, used, and recycled. By providing real-time insight into the products’ timeline, the company seeks to enable a new level of visibility to products in the wholesale channel, reduce the environmental footprint, and help clients increase their sales margin.

Wiliot’s headquarters and R&D facilities are based in Caesarea, Israel, while the business development centers are located in the US (California) and Germany, with additional offices in Denmark, Ukraine, Australia, and Taiwan.

Customers:

This company has not disclosed information for its client list.

Business Model

The company’s business model is centered around the following characteristics:

- Wiliot operates on a B2B model, with technology applicable to several use cases, but focused on optimization of supply chains that use RTIs such as crates and pallets; the company targets wholesalers in pharma, healthcare, apparel, soft goods, and CPG production.
- Returnable transport items (RTI), including crates, bins, containers, and pallets, comprise another Wiliot application area, enabling circularity through inventory tracking, delivery monitoring, shelf-life extension, and waste reduction.
- The company generates revenue by offering cloud services that provide data from its IoT Pixel tags. Customers can also purchase the Wiliot kits - product bundles featuring annual or semi-annual access to the Wiliot cloud services, number of IoT Pixels, single/dual-band bridge devices, the Wiliot Community Forum & Support Portal, and automation platform.

Value Proposition

The company communicates the following as its main value propositions:

- Wiliot enables distribution and routing of inventory based on demand signal, thus allowing clients to avoid stockouts and surplus inventory while effectively reducing the capital employed within the supply chain.
- The main objective of the IoT solution is to provide uninterrupted traceability in distribution from manufacturing to the final retail location. The product also benefits pharma and perishable items as the Pixels measure the product temperature, thus ensuring freshness and increased longevity.
- Wiliot’s Pixels provide secure IDs to ensure that products are sold in legitimate channels and steer clear of gray markets.
- Since its inception, Wiliot has been backed by prominent investors such as Softbank, 83North, Verizon Ventures, Amazon, Grove Ventures, Maersk Growth, Merck Ventures, and Vintage Investment Partners.

Product Portfolio

Wiliot's portfolio encompasses a Sensing-as-a-Service platform that delivers connectivity and cloud intelligence for products and packaging. The platform combines cloud services and semiconductor technology powered by radiofrequency energy. The cloud-based platform utilizes machine learning and analyzes sensory data gathered via the IoT Pixels continually. The Pixels come with a minimalistic stamp-like design and ensure secure transmissions and encrypted data transfer; they can be read via Bluetooth connectivity.

Wiliot Cloud

Wiliot's cloud services feature a machine learning engine that learns to improve its algorithms and communicates insights for every unit within the inventory. It showcases data on when the product was manufactured, distributed, sold, owned, reused, and recycled. Each IoT Pixel comes with an enclosed chip representing the main data messenger. Namely, the chips send encrypted and authenticated packets through the air directly to the Cloud, which conducts decryption, authentication, access control, and smart-sensor processing.

Harnessing ML, Wiliot Cloud translates the raw sensory data into valuable insight, covering temperature, motion, inventory, and location parameters. The Cloud ensures that data remains secure, private, and authentic throughout all these processes and produces valuable information formatted as subscribable insights and events applications. Such operation allows the engine to continually improve its learning capabilities to identify trends, events, and activity exceptions.

As Wiliot Cloud and Wiliot IoT Pixels are complementary parts of the solution, they cannot be used independently.

Wiliot IoT Pixels

The company's IoT Pixels conduct the core sensing functionalities, such as temperature, tamper-detection, humidity, motion, and fill rate, among others. Their main benefit is empowering every product to act as a self-sensing smart device. Each Pixel contains a low-energy, wireless Bluetooth chip that carries the capacity to sense, compute and communicate. In addition to the chip, the small units include a self-power management system, several sensor interfaces, a security engine, and 1KB of non-volatile memory for programming and configuration. The devices come formatted as an adhesive label in the size of a postage stamp.

According to the company, Wiliot IoT Pixels entail low-cost production, making them highly scalable for big inventories. The production leverages the same manufacturing systems as High Frequency (HF) and Ultra-High Frequency (UHF) tags, which contributes to low cost, high throughput, and prompt production. Each IoT Pixel self-powers by harvesting radiofrequency energy from its surroundings and nano-Watt computing operations, and leverages Bluetooth-enabled devices like smartphones, access points, and smart speakers, to connect to the Internet.

Market Opportunities

The company targets the global asset tracking market.

- According to Research and Markets, the global asset tracking market is poised to grow from an estimated \$17.14 billion in 2020 to \$34.82 billion by 2026, registering a CAGR of 13.45% during the forecast period.
- The market is anticipated to sustain growth on account of the surging need for just-in-time shipments, owing to the e-commerce boom.
- In terms of region, North America is expected to hold the largest share of the market over the forecast period.
- Notable companies operating in this market include AT&T, GigaTrak, OnAsset Intelligence, Fleet Complete, Oracle Corporation, Verizon Wireless, Ubisense Group, etc.

Achievements

To date, the company has achieved the following milestones:

- It was recognized as a 2022 SXSW Innovation Awards finalist in the “Smart Cities, Transportation & Delivery” category.
- Additionally, the company won the “2022 North America Technology Innovation Leadership” and “2022 Europe Customer Value Leadership” awards by Frost and Sullivan.
- The company’s CEO was recognized among the “Most Influential Figures In the Chip Industry” by tech12.
- In 2021, Wiliot won the 2021 Food & Drug Administration (FDA) Challenge in the “New Era of Smarter Food Safety Traceability” category.
- It received the “The 2021 IoT Innovator award” by Compass Intelligence.
- Also, it was recognized among the “Most Promising Startups of 2019” by Globes.



Executive Team 1/2

Tal Tamir
CEO

Experience:

- VP of Product Management at Qualcomm
- CEO at Wilocity
- Director of Strategic Planning at Intel
- Director of PCDi at Conexant

Academic Background:

- MBA from Northwestern University - Kellogg School of Management
- MBA from Tel Aviv University
- BSc in Electrical Engineering from Technion - Israel Institute of Technology

Manish Bansal
CPO

Experience:

- Director of Product Management and Seller Services at Amazon
- Senior Software Engineer at Accenture
- Co-Founder and CEO at Ekema Softech
- Project Leader at INSEAD

Academic Background:

- MBA in Strategy and Finance from University of Michigan - Stephen M. Ross School of Business
- MSc in Economics from Birla Institute of Technology and Science, Pilani
- BE in Computer Science from Birla Institute of Technology and Science, Pilani



Executive Team 2/2

Tony Small

Chief Business Officer

Experience:

- Member at Canvas Ventures GTM Council (current)
- Advisor at Infinityy (current)
- Advisor at Stanford Institute for Innovation in Developing Economies- Stanford Seed (current)
- Chief Revenue Officer at Pro.com
- Chief Revenue Officer at Convoy Inc
- Senior Vice President, Group Vice President, VP and General Manager, and Director of Sales Strategy and Operations at Zillow Group
- Senior Manager at Amazon.com
- Program Manager for Microsoft Office at Microsoft Corporation

Academic Background:

- MBA from Stanford University Graduate School of Business
- BSc in Computer Science from Stanford University

Roe Zeiler

CFO

Experience:

- CFO at Blue dot
- CFO at Beamr
- Senior Manager at EY

Academic Background:

- Executive MBA from the Hebrew University of Jerusalem
- Bachelor's degree in Economics and Accounting from the University of Haifa

Connected Care

“Connected Care” is the digital communication between a patient and a healthcare provider enabled by smart devices in real time, related to the patients’ health conditions.

These devices are based on technologies such as telehealth, remote patient monitoring, and secure e-mail communication.

Through such technologies, patients can access personalized healthcare from any location and at any time, increasing access to healthcare professionals when needed.

From the Valuer platform:

Average funding of the
Connected Care companies

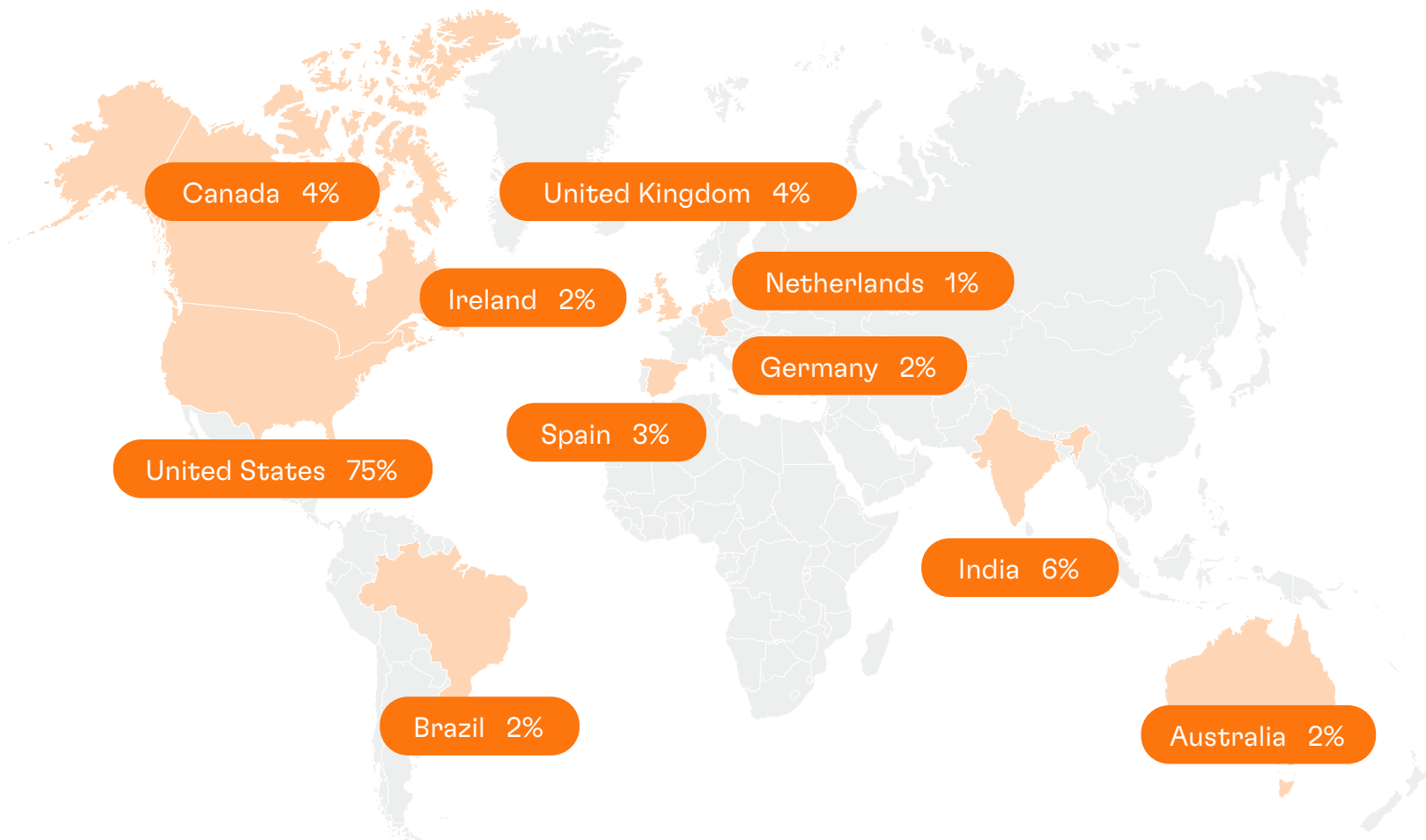
\$5,367,455 USD

Technology Trends:

[i](#) Click on the tech trends to learn more

- **Telemedicine:** The use of ICT to deliver healthcare-related services, such as evaluation, diagnosis, treatment, and prevention of disease and injuries remotely and/or from a distance.
- **Digital therapeutics:** Patient-focused, evidence-based software applications that help with disease treatment, prevention, and management.
- **Precision medicine:** A medical model that takes into account the patient’s individual differences with the goal to tailor disease prevention and treatment.

10 countries with the most Connected Care companies on the Valuer platform:





Company Highlight:

BrightInsight

Year of inception:
2017

Location:
San Jose, CA, United States

Company stage:
Growth/Expansion

Funding:
166,000,000 USD

Team size:
232

Website:
brightinsight.com

BrightInsight has developed a global platform for regulated digital healthcare products in the biopharma and MedTech industries. The company offers modular software solutions that help clients launch healthcare products, accelerate market time, and provide regulation and compliance consulting.

BrightInsight was founded in 2017 by Dr. Kal Patel and Ferry Tamtoro in San Jose (CA), and currently employs over 200 people. BrightInsight has worked with several notable healthcare organizations, including CSL Behring, UCB, AstraZeneca, and Sanofi.

Customers:



UCB



CSL Behring



AstraZeneca



Roche



Novo Nordisk

Business Model

The company’s business model is centered around the following characteristics:

- BrightInsight operates on a B2B model, targeting clients in the MedTech and biopharma industries that seek to develop digital solutions for patient diagnosis, patient selection, dose management, patient adherence, and disease management, among others.
- Via its platform and associated services, the company helps partners build and launch commercially regulated digital health products.
- BrightInsight generates revenue through a SaaS model, with varying quote-based fees depending on the scope and requirements of the client’s project.

Value Proposition

The company communicates the following as its main value propositions:

- BrightInsight helps clients build digital healthcare solutions and avoid developing projects from the ground up via its suite of software modules.
- Its solutions accelerate a product’s time to market while lowering production costs. The company claims that its pre-built solutions can cover 60-80% of the product requirements, speeding up deployment by 6-24 months.
- The BrightInsight platform is compliant with the latest security and privacy certifications, including HITRUST CSF® v9.3, HIPAA, GDPR, IEC 62304, ISO 13485, ISO/IEC 27001:2013, and other regulations.

The BrightInsight platform is compliant with the latest security and privacy certifications, including:

- The EU Medical Device Regulation;
- The Medical Device Single Audit Program (MDSAP);
- HDS (Hébergeur de Données de Santé);
- IEC 8230-1;
- IEC/ISO 62304:2015;
- ISO 13485:2016; ▪ ISO/IEC 27001:2013;
- HITRUST CSF;
- HIPAA;
- GDPR, and
- Privacy Shield.

Product Portfolio

BrightInsight's core product is the BrightInsight Platform, a pre-built digital health platform with an included quality management system aimed at clients in the MedTech and biopharma industries. The company also offers various digital health services, such as consulting, digital product building, product maintenance, and regulatory services.

BrightInsight Platform

The BrightInsight platform was developed to help healthcare companies build, scale, and maintain their regulated digital health products. It eliminates the need for "from scratch" development and implements data integration, management, and analytics features. The platform is pre-built with integrations for medical devices, electronic health records (EHRs), and other healthcare systems. It can perform data aggregation and advanced data processing to enable diagnosis, prevention, and treatment of clinical conditions, while simultaneously providing valuable insights and analytics to the client through the platform's dashboard. The BrightInsight Platform is ready for use in medical algorithms, Software-as-a-Medical-Device (SaaMD), apps, connected combination products, digital therapeutics, and diagnostics applications.

Pre-Built Applications

BrightInsight's pre-built applications provide clients with an accelerated time to market, greater flexibility, and ensure regulatory compliance and future-proofing. Clients can choose from a plethora of pre-built software components, such as portals and

apps, access to algorithm hosting and management, and support from BrightInsight for additional configuration and customization.

For the biopharma industry, BrightInsight outlines use-cases such as patient support and engagement apps, clinician and clinical trial portals, and algorithm hosting and management. Clients can employ powerful algorithms to develop apps for patient diagnosis and access tools that enable quick assignment of therapies to individual patients. The adherence and disease management aspect of BrightInsight's software modules also allow for dose management, patient adherence, and disease management functionalities, resulting in better treatment results and improved patients' health.

In the MedTech realm, BrightInsight supports remote device condition monitoring, remote device configuration and control, remote therapy management, and diagnostic workflow management.

Digital Health Services

In addition to the library of software modules available through the BrightInsight platform, the company also offers "a-la-carte" services for digital health solutions, such as consultation, digital health product development, product maintenance, and regulatory services. These are intended to help clients better understand their needs and develop the optimal solution for their scenario, keep the resulting product in working order and be up-to-date with changing medical, privacy, and security regulations.

Market Opportunities

The company targets the global market for digital health products.

- According to Allied Market Research, the global market for digital health products was valued at \$146 billion in 2020 and is projected to reach \$768 billion by 2030, growing at a CAGR of 17.9% between 2021 and 2030.
- The market growth is driven by the demand for remote monitoring services, the increased funding for mHealth startups from private and public agencies, the rising prevalence of chronic diseases, and the growing presence of technology in the healthcare sector.
- In 2020, North America held the largest market share, which is expected to continue during the forecast period. Furthermore, the Asia-Pacific region is expected to grow fastest, registering a CAGR of 28.1% from 2021 to 2030.
- Key market players include Allscripts Healthcare Solution, Cerner Corporation, Cisco Systems, eClinicalWorks, GE Healthcare, Honeywell International, Koninklijke Philips N.V., Mckesson Corporation, etc.

Achievements

To date, the company has achieved the following milestones:

- In 2021, it was named one of the 150 Most Innovative Digital Health Startups by CB Insights Digital Health.
- It was also featured in the Top Compliance Technology Solution Provider List by CIOReview, in 2021.
- The same year, it was named the Most Innovative Digital Health Platform by Global Brands Magazine.
- Silicon Review listed the company as one of the Top 50 Best Workplaces of the Year in 2020.
- LinkedIn named it one of the Top Startups of the Year in 2020.
- The company received the Global Entrepreneurial Company of the Year Award for Healthcare IoT solutions by Frost & Sullivan in 2020.
- In 2020, it became a part of the Digital Health 150 List by CB Insights.
- It was also awarded the 2019 Google Cloud Technology Partner of the Year Award for the Healthcare Industry for the second consecutive year.



Executive Team

Kal Patel, MD

Co-Founder & CEO

Experience:

- Senior Advisor for Digital Health at The Boston Consulting Group
- President of Flex Digital Health at Flex
- CCO and Advisor at Doctor On Demand
- Executive Director of Strategy and Corporate Development, Global Marketing Lead of Enbrel, Founder and Head of Amgen Digital Health at Amgen
- Senior Director and Head of Strategy and Planning at Novartis Pharmaceuticals

Academic Background:

- MBA from the University of Chicago
- Doctor of Medicine specializing in Medical Economics from the University of Chicago
- BA in Economics from the University of Chicago

Ferry Tamtoro

Co-Founder & CTO

Experience:

- CTO and VP of Digital Health at Flex
- Director of Digital Accelerator Labs and Digital Health Products at Amgen
- Product Manager of the Corporate Innovation Team at Walgreens
- Senior Manager at Baxter International
- Technical Project Manager at GE Healthcare

Academic Background:

- MBA in Marketing, Finance, Management and Strategy, and Entrepreneurship from Northwestern University
- BS in Electrical Engineering from the University of Wisconsin - Madison



About IoT Community

(Internet of Things Community)

The IoT Community is a privately held UK based and registered corporation, serving as the world's largest and longest standing CxO community of senior business leaders and IoT practitioners comprising 30,000+ members globally.

Founded in 2015, the function of the community is to focus on the adoption and application of IoT in commercial environments, seeking to understand and contribute to applying the technology or overcoming the wide variety of barriers, inhibitors, and technical and operational issues.

The IoT Community aims to be the place to be or place to come for IoT information and insights on the implementation and operation of IoT systems and applications. Their focus is on accelerating the adoption and implementation of IoT systems and applications, making these processes easier, widespread, and secure.

For more information, visit:



iotcommunity.net



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[@IoTChannel](https://twitter.com/IoTChannel)
[#IoTCommunity](https://twitter.com/IoTCommunity)



[IoT Community](https://www.linkedin.com/company/iotcommunity)



About Valuer

Valuer's vision is to fuel and foster the world's innovation by mapping global innovation activities. By combining data about startups and technologies, they identify and present patterns to forward-thinking companies, startups, universities, and investors alike. Clients can use Valuer to dive headfirst into identifying relevant companies and technologies.

The company organizes +20 mio data points to spot trends, discover new technologies, and map industries. They use AI and machine learning to analyze, cluster, and identify data, and human researchers to enrich that data. Clients can start at the macro level by exploring industries and technologies and then move on to identifying relevant companies. Or start at the micro, company level and from there understand the industry and how it associates.

Valuer is a one-stop shop for innovation and opportunity discovery. Visit valuer.ai to find new technologies and collaboration opportunities, uncover strategic suppliers or find and follow acquisition targets.

For more information, visit:



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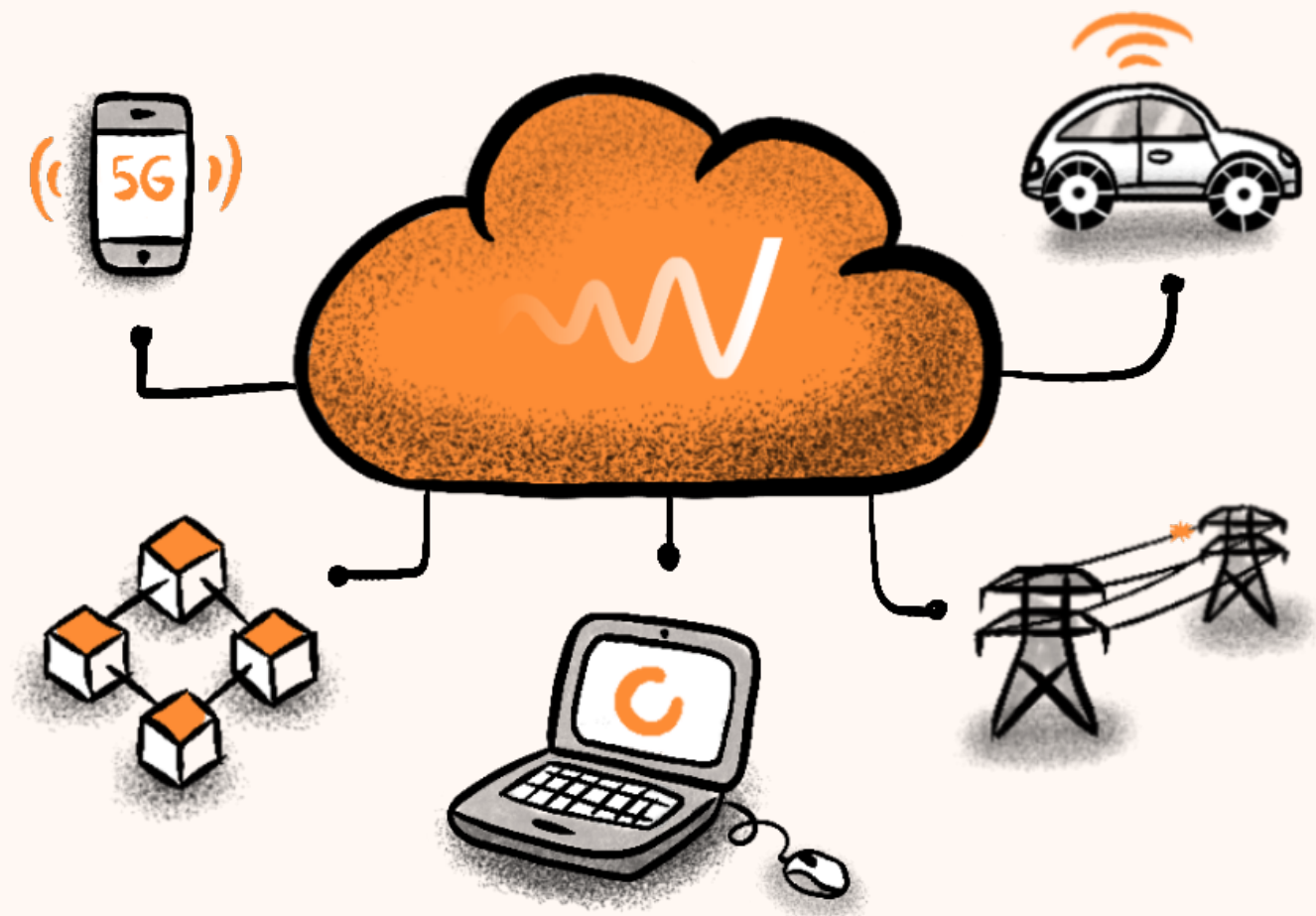
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