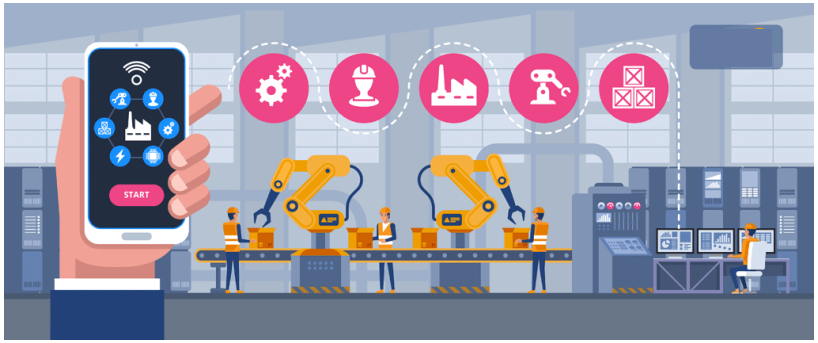
2021 Industry Report:

Industrial Internet of Things



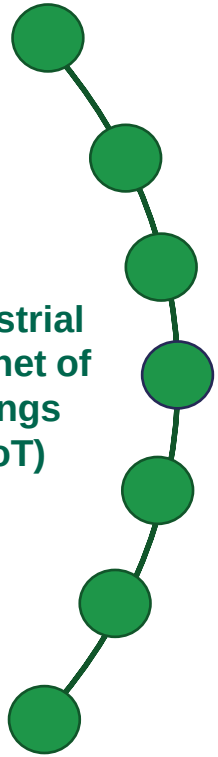
Andrew Bright
Managing Director

WOODSIDE CAPITAL PARTNERS
WCP

Introduction

- This report on the Industrial Internet of Things (IIoT) provides an overview of the market, its drivers, the industry structure, start-ups as well as established players
- It is intended to be used by start-ups and growth-stage companies, VC & PE investors as well as Corporate Development teams and provides key information to assist those developing & implementing IIoT strategies
- This report covers in some detail:
  - IIoT smart sensors
  - IIoT gateways & networks,
  - IIoT platforms
  - IIoT data analytics
- 66 start-ups & growth-stage companies from the above sectors are profiled in detail towards the back of this report
- Follow-up reports are foreseen to cover additional IIoT topics:
  - Industrial cyber security
  - Industrial service robots & drones
  - Industrial augmented / virtual reality
  - Mobile workforce management
- The author, Andrew Bright, is a Managing Director at Woodside Capital Partners, a former Group VP of Corporate Development, and a former Head of Engineering for a leading Industrial Automation player

Key Take-Aways

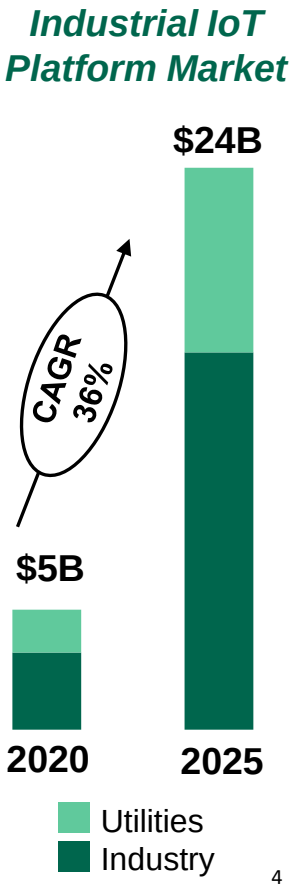


Industrial Internet of Things (IIoT)

- The sectors represented in this report are growing with a CAGR >30% and will be worth >$100B by 2025
- COVID is accelerating the growth of IIoT as more plants need to be monitored & optimized remotely
- Key technology enablers include: lower cost sensors & data storage as well as big data maturity
- Top 3 IIoT analytics use cases are predictive maintenance, quality assurance & process optimization
- Big tech, industrial giants, system integrators and AI specialists are all vying to become leaders in IIoT
- Numerous start-ups & growth-stage companies are actively shaping and participating in the IIoT sector
- Many Corporates are making acquisitions in the IIoT sector to close portfolio & capability gaps

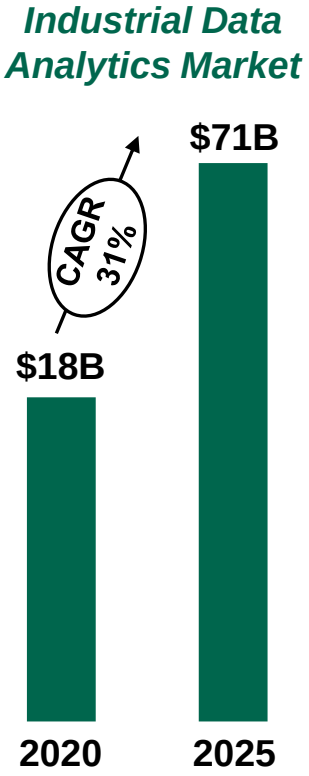
Industrial Internet of Things (IIoT): Executive Summary (1/2)

- The IIoT platform market is growing with a CAGR of ≈36% and is expected to grow from ≈$5B in 2020 to ≈$24B in 2025
- Prior to COVID, quality, process & OPEX optimization were key business drivers of Industrial IoT adoption, now in addition safety, remote worker enablement and information transparency are key drivers
- Key customer concerns that are restraining IIoT growth include: uncertain return on investment, fear of vendor lock-in as well as cyber security and data privacy concerns
- Too many IIoT projects get stuck in pilot purgatory, 85% of pilots reportedly last longer than 1 year
- IIoT has the potential to disrupt the entire PLC / DCS / SCADA based traditional automation stack
- A new IIoT stack is emerging, Hardware, (sensors, gateways, edge compute), Connectivity, Back-end Software, Analytics Applications and Cyber Security are the key building blocks
- Industrial Gateways & Routers are used to connect a variety of field and edge devices to a variety of communication networks, the market is worth ≈$700M and growing with a CAGR of ≈12%, Cradlepoint (recently acquired by Ericsson) , CISCO and Sierra Wireless are the largest players
- The Industrial Internet Consortium is emerging as the world's strongest leading Industrial IoT alliance
- Big-Tech companies (Google, Microsoft, Amazon) as well as Industrial giants (Siemens, Hitachi, GE) are all seeking to become leading IIoT platform providers
- 4 key industry characteristics that increase the likelihood of IoT adoption: moveable equipment, remote high-value assets, key component suppliers, measurement products



Industrial Internet of Things (IIoT): : Executive Summary (2/2)

- The IIoT analytics market will be worth ≈$18B in 2020, it is growing with a CAGR of ≈31% and is expected to reach a value of ≈$71B in 2025
- A broader range of companies are seeking to lead in IIoT analytics s: hardware players (Cisco, Intel), system integrators (Accenture, Tata), industrial giants (Samsung, Honeywell), Big-Tech (Tencent, Oracle), AI specialists Palantir, Splunk)
- The industries which most use data analytics are: oil, gas & chemicals, transport, and metals & mining
- Most industrial companies are attempting a 'Digital Transformation' most are attempting to transform portfolio, processes & culture (although not always in that order)
- Industrial companies typically begin by adding digital features (e.g. sensors) to their existing products, the goal is often to move towards co-creating innovative digital services together with key customers
- Many corporates have been actively making IIoT investments & acquisitions to accelerate their digital transformations, common rationale includes the need to add new digital features, capabilities and expertise
- Industrial IoT projects & offerings should comprehensively address Cyber Security, advanced features which are increasingly requested include: security at the edge, threat identification & protection
- Many start-ups and growth-stage companies are actively shaping and participating in the IIoT sector, this report highlights a selection of 66, spanning: smart sensors, gateways & networks, IIoT platforms and IIoT Data Analytics
- 16 of these start-ups raised equity funding in 2020; a total of $500M, 2 have been acquired & 1 filed for an IPO
- This report is not exhaustive, if you represent a start-up or growth firm which you feel should have been included, please contact me at andrew.bright@woodsidecap.com & I will get you featured in an upcoming WCP report



WCP: The Leading Corporate Finance Advisor for Tech Companies

Deeply Experienced

20th year; $10B+ in transaction value; 200+ engagements from straightforward to very complex

Sector Expertise

15 bankers – backgrounds from top investment banks, strategic acquirers & entrepreneurs/CEOs

Ultra-Personalized Service

Sell-side advisory, buy-side advisory, strategic partnerships, private placements

Exceptional Track Record

Global relationships with active corporate executives, investors, and thought leaders

Global Network

Offices in Palo Alto (HQ) and London

Recent Engagements

- Valencell – Capital Raise
- Canopa – Sale of Company
- Movidius – Capital Raise
- Sonion
- Huawei
- Bosch
- TeleMed2U – Sale of Company
- HTS – Debt Capital
- BIONX – Capital Raise
- Z-Power
- ekahau – Sale of Company
- Arista
- TagArray – Sale of Company
- Maxim Integrated
- InVisage – Sale of Company
- Apple

WCP Has Sold Companies To

Microsoft, Apple, Google, Cisco, Amazon, Facebook, Salesforce, Oracle, VMware, Intel, IBM, Honda, Red Hat, Autodesk, Ericsson, GE

and many more

WCP Has Completed Advisory Assignments For

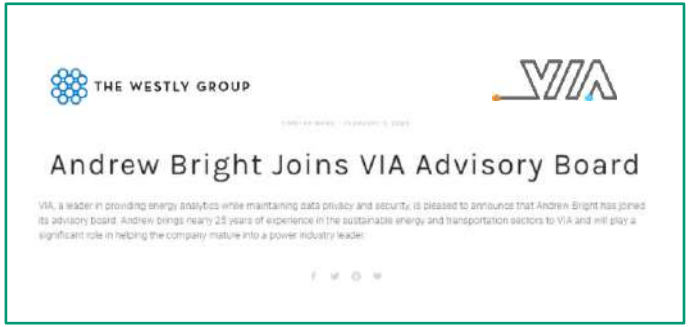
KPCB, USVP, Sequoia, BV, Foundation Capital, Trinity, Greycroft, Partech, DFJ, August Capital, Intel Capital, Mayfield, Canaan Partners, Menlo, NEA, Venrock

and many more

About the Author: Andrew Bright, WCP, Managing Director

Andrew is a Managing Director at Woodside Capital Partners, providing Corporate Finance advisory to advanced technology companies seeking liquidity events and capital raises

- Andrew brings 25 years of experience in industrial automation, sustainable energy and transport
- He spent 12 years as a Group VP at ABB where he became an expert in industrial automation, strategy development & implementation, M&A, digital transformation & start-up investing, most recently at ABB he was Head of Corporate Development at ABB Power Grids & played a leading role in the Division's $11B sale to Hitachi
- At ABB Andrew also was Head of Technology for ABB's Power Generation Business, the global leader in the automation of power plants. He led a global team of more than 200 engineers.
- Prior to ABB Andrew was a Principal Consultant, responsible for deploying high-technology solutions into the aerospace, defense, rail, marine & power generation industries
- Andrew recently spent 3 years in the heart of the Silicon Valley and is well connected to the start-up Venture Capital & Accelerator eco-system. He continues to mentor and advise several start-ups. In the summer of 20210 he returned to Switzerland to lead a new WCP Zurich based European office
- Andrew has a Masters in Engineering Science from the University of Oxford, and graduated top-of-his MBA class at the University of St Gallen, Switzerland



Industrial IoT is arguably the most important sub-sector of IoT

7 key Internet of Things segments have been identified, 2 of these are closely associated with the Industrial Internet of Things (IIoT):

There are few companies today from, food & clothing to industrial equipment that do not have a digitalization strategy

A key pillar of most digitalization strategies involves IoT

Consumer goods, buildings, cars, cities and factories are all being connected to the internet at an ever-increasing rate, in ever more interesting ways

Traditional manufacturers, big technology companies and start-ups are all competing for a slice of the action

IIoT is closely linked with both the Fourth Industrial Revolution and Industry 4.0

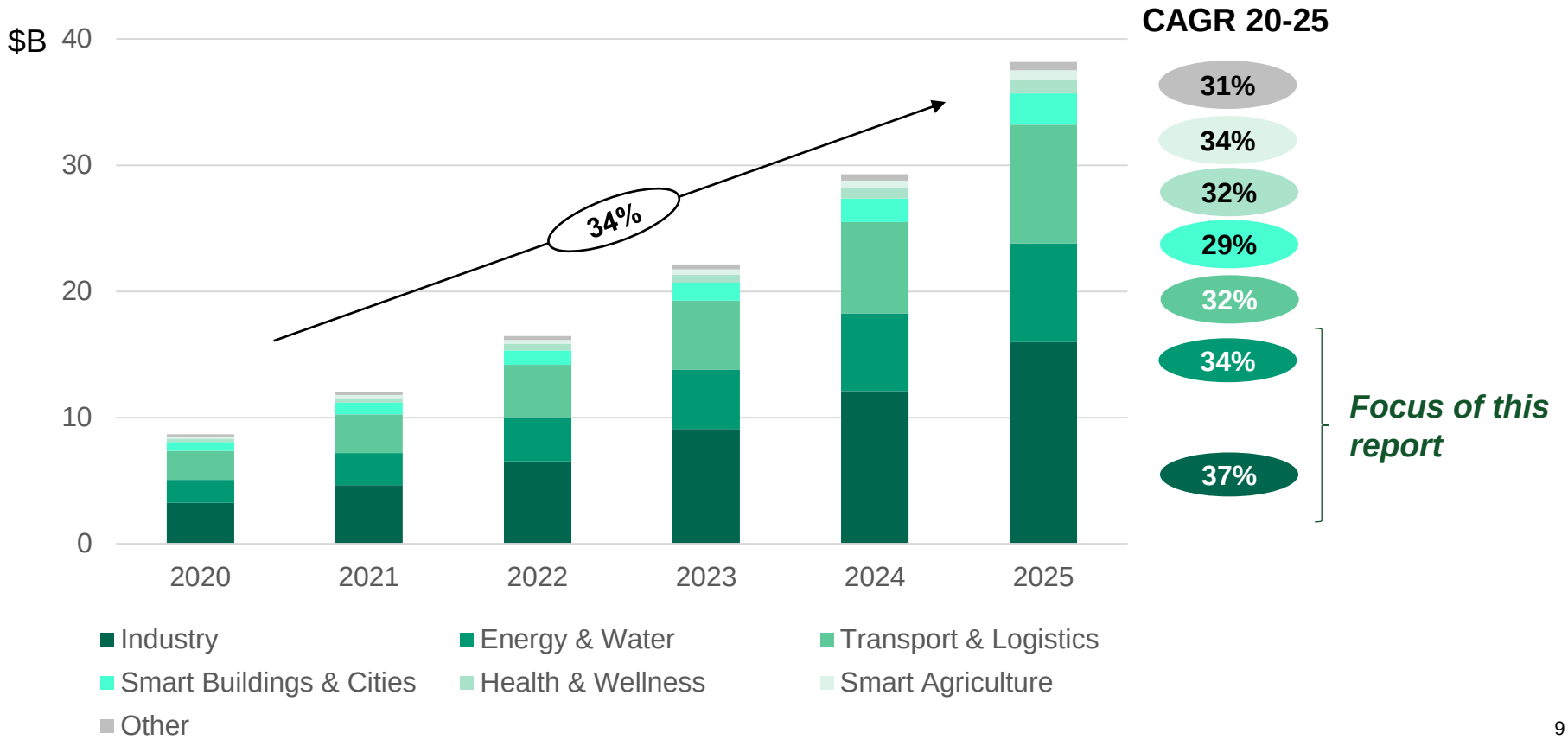
This report will focus on IoT applications for energy, water process & discrete industries

Key IoT Segments

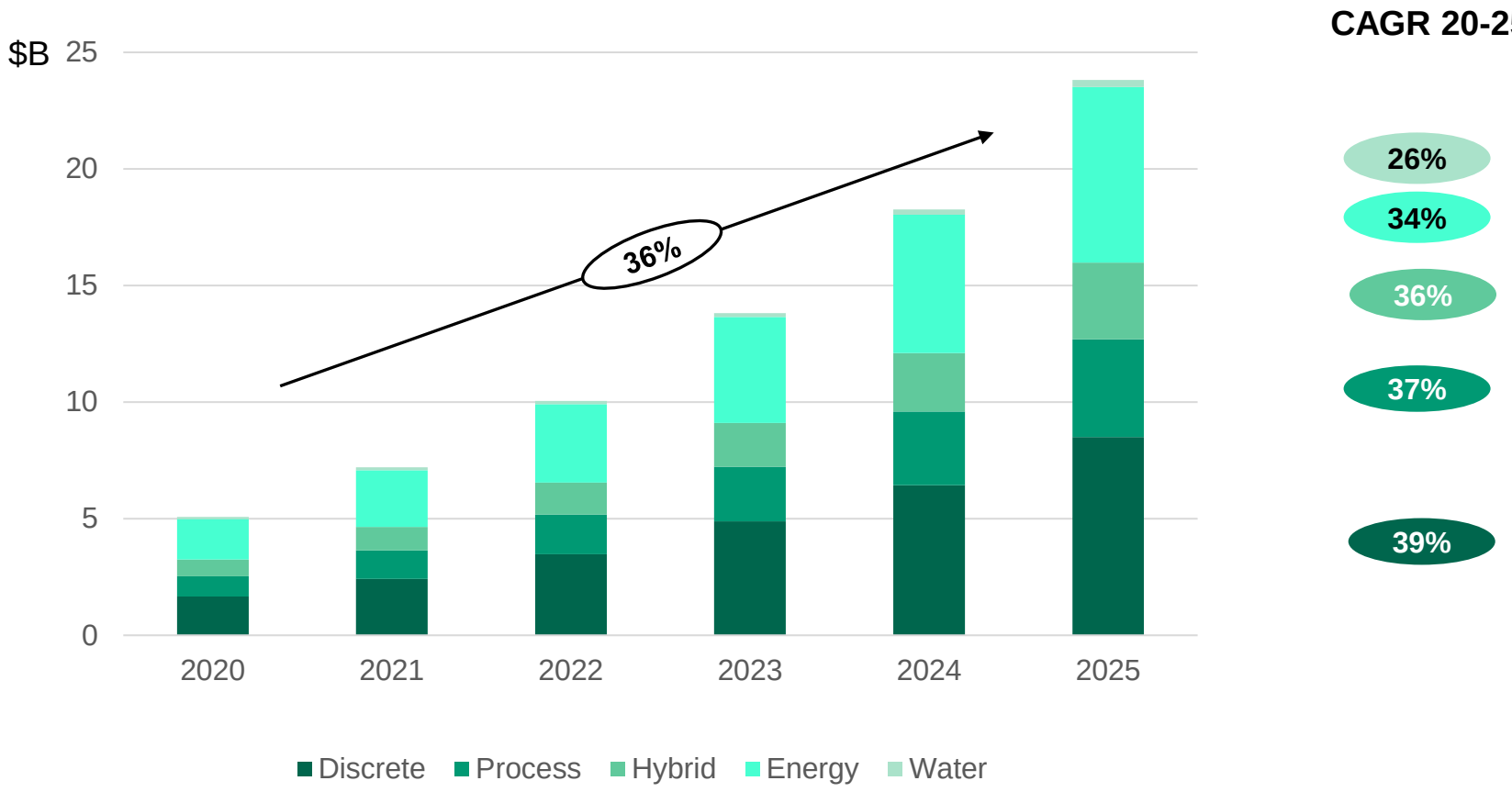
- **Consumer products**
- **Healthcare & wellness**
- **Finance & insurance**
- **Smart buildings & cities**
- **Transport**
- **Energy & water**
- **Process & discrete industries**

Focus of this report

Global IoT Platform Market Size



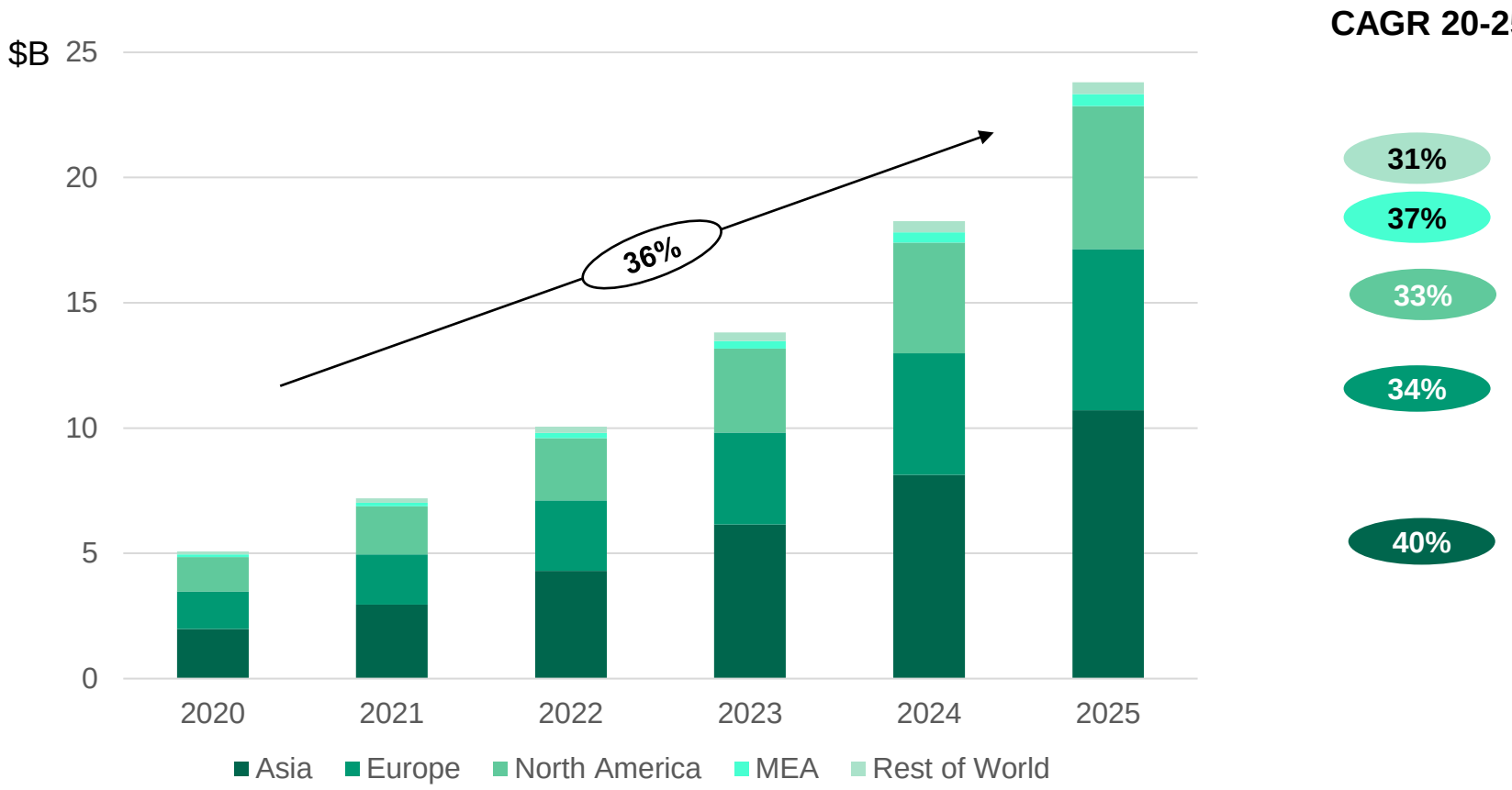
Global Industrial IoT Platform Market Size by Sector



CAGR 20-25

- 26%
- 34%
- 36%
- 37%
- 39%

Global Industrial IoT Platform Market Size by Geographic Region



CAGR 20-25

- 31%
- 37%
- 33%
- 34%
- 40%

5 key categories of IIoT Platforms

IIoT Platform Categories	*Key Functions*
Application Enablement	Tools for developers to rapidly create, test, and seamlessly deploy an IIoT application May include tools for: digital twin, rules engine processes, Integrated Development Environment (IDE), enterprise app integration, IIoT application marketplace
Cloud Back-end	Core offerings: data ingest, storage, analytics & visualization via Infrastructure-as-a-Service Advanced offerings: security (access control), mobile services (API gateways, management tools (configuration tracking, monitoring), DEV/OPS, (containers, build & test), enterprise apps
Device Management	Ensures devices for new IIoT deployments are consistently & correctly configured Monitors & updates the connectivity of devices and their firmware (e.g. security patches) Edge application life-cycle management
Telco Communication Connectivity Platform	Facilitates connectivity orchestration, management, provisioning and billing for connected IoT devices typically outside of factory environments Able to provide seam-less connectivity via a variety of communication technologies
Industrial Data Connectivity Platform	Provides data acquisition from any connected part of the industrial automation system Software Development Kits (SDKs) easily enable devices to be connected to the Application Enablement Platform

6 Key Drivers of IIoT Adoption

6 business level drives of IIoT adoption are identifiable:

- IIoT is an enabler for step-change improvements in process, employee and contractor safety. Compliance with regulatory reporting requirements can be automated.
- Processes are standardized, deviations are easily identified, process & products are more often & more thoroughly inspected.
- With continuous condition monitoring & predictive analytics, breakdowns can be identified & rectified before they occur
- As product life-times shorten & delivery lead times reduce, factories must become more flexible, faster to commission & re-tool
- As the workforce ages & experienced workers retire, valuable knowledge is lost, IoT applications can capture this knowledge
- The COVID pandemic has increased the need for remote working and for information to be immediately & readily available

Key IIoT Drivers

Safety & regulatory compliance

Quality & process optimization

Increased uptime & lower maintenance costs

Commissioning & set-up speed & flexibility

Aging workforce, knowledge capture

Remote working & information transparency

5 Key Technology Enablers of IIoT Adoption

5 technology enablers IIoT of adoption are identifiable:

- Economies of scale, often arising from their use in consumer goods have lowered the cost of sensors, as well as their footprint and power requirements
- A large variety of short-long range, low-high bandwidth, low-normal latency, standards-based and proprietary communications protocols are now available
- The cost per Giga Byte of data storage hardware is continually reducing
- Our ability to extract useful information & insights from big data is increasing, often driven by advancements in machine learning & AI
- Industry is getting to used to cloud versions of enterprise IT software, they are slowly getting used to the idea of using cloud for operational applications (OT)

Key IIoT Technology Enablers

Lower cost & smaller footprint sensors

Long-range, low power communications

Lower data storage costs

Big data analytics maturity

Cloud computing availability & acceptance

5 key customer concerns that are restraining IIoT market growth

IIoT providers can unlock growth by addressing one-or-more of theses customer concerns

- Both the costs and benefits of IIoT deployments can be difficult to quantify in advance. Business cases are difficult to develop and get approved
- A World Economic Forum report found that >70% of IIoT deployments get stuck at the pilot phase, only 15% move to commercial deployment after <1 year
- Some equipment & process types have low maintenance & high reliability, Customers fear that adding digital hardware will add a new weak link into the process
- Customers struggle to balance the benefits of purchasing a turnkey solution from a single vendor, with the benefits of being able to switch vendors for service & upgrades
- Customers do not want to increase OT cyber security risks. They are also reluctant to let confidential data go off-premise

Key customer restraints on IIoT market growth

Uncertain return on investment

IIoT deployments struck in pilot purgatory

Reduced equipment & process reliability

Fear of vendor lock-in

Cyber security & data privacy concerns

A typical IIoT Deployment Project involves 4 Key Stages

Pre-Selection

Typically a team of technical experts uses desk-top analysis to pre-select 2 to 10 providers from a universe of up to 50 providers

Key assessment criteria include:

- *Functionality*
- *Previous relationship*
- *Partnerships*

Proof of Concept

Up to 10 providers invited to demonstrate the capabilities of their IIoT solutions, normally over a few days

Sometimes a second-round of POC[1] assessment, where 2-3 providers are assessed over weeks

Additional key assessment criteria include:

- *Security*
- *Scalability*
- *Usability*
- *Expected cost*

Pilot

Following the POC assessments, the technical team recommends a winner

Most often the final decision on IIoT provider is taken by the CEO, usually with management team support

Most companies then deploy a pilot IIoT project with the winning IIoT provider

85% of pilots last longer than 1 a year – a common problem is that Return on Investment is challenging to prove

Commercial Deployment

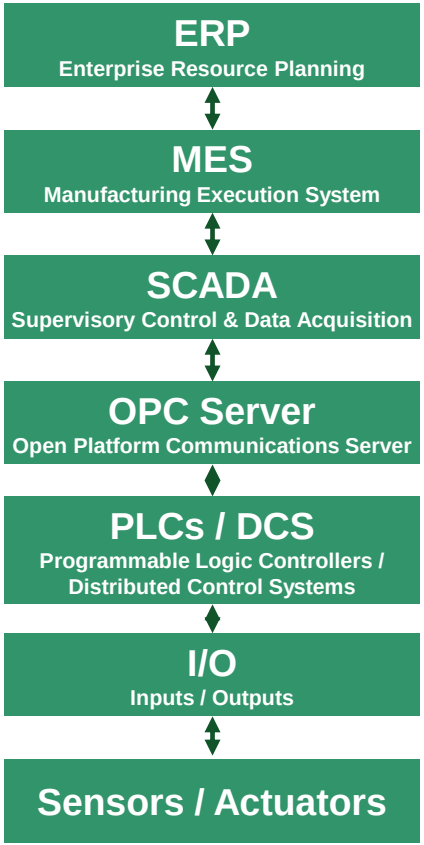
Selecting specific factories / sites to act as Lighthouses and lead commercial IIoT deployments is a proven method of escaping pilot purgatory

Key success factors include empowering and enabling local employees, who are often best placed to identify IIoT use cases with high returns

[1] Proof of Concept

IIoT has the potential to disrupt the entire industrial automation stack

Traditional Industrial Automation Stack



Key Communication Protocols

Profinet, Profibus, Modbus

Hart, MMS, Goose, IO-Link

Area addressed by IIoT

1 ***Merging of functionality and shift to the cloud***

2 ***Disintermediation***

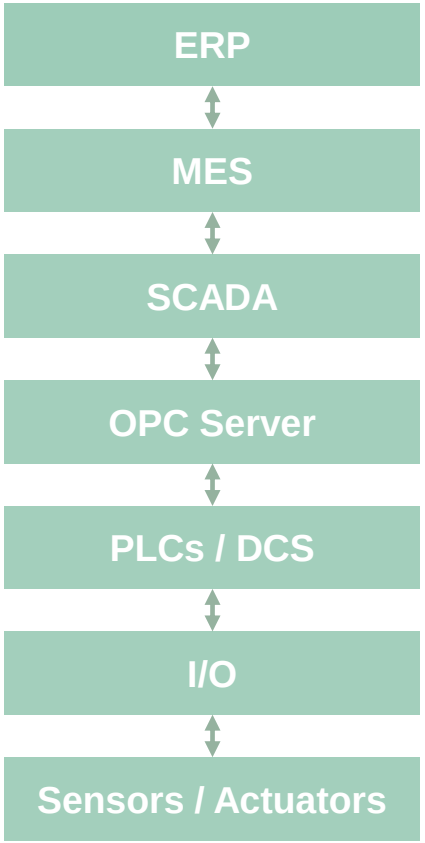
3 ***Direct connection to the cloud or via gateways & routers***

4 ***Edge compute & analytics***

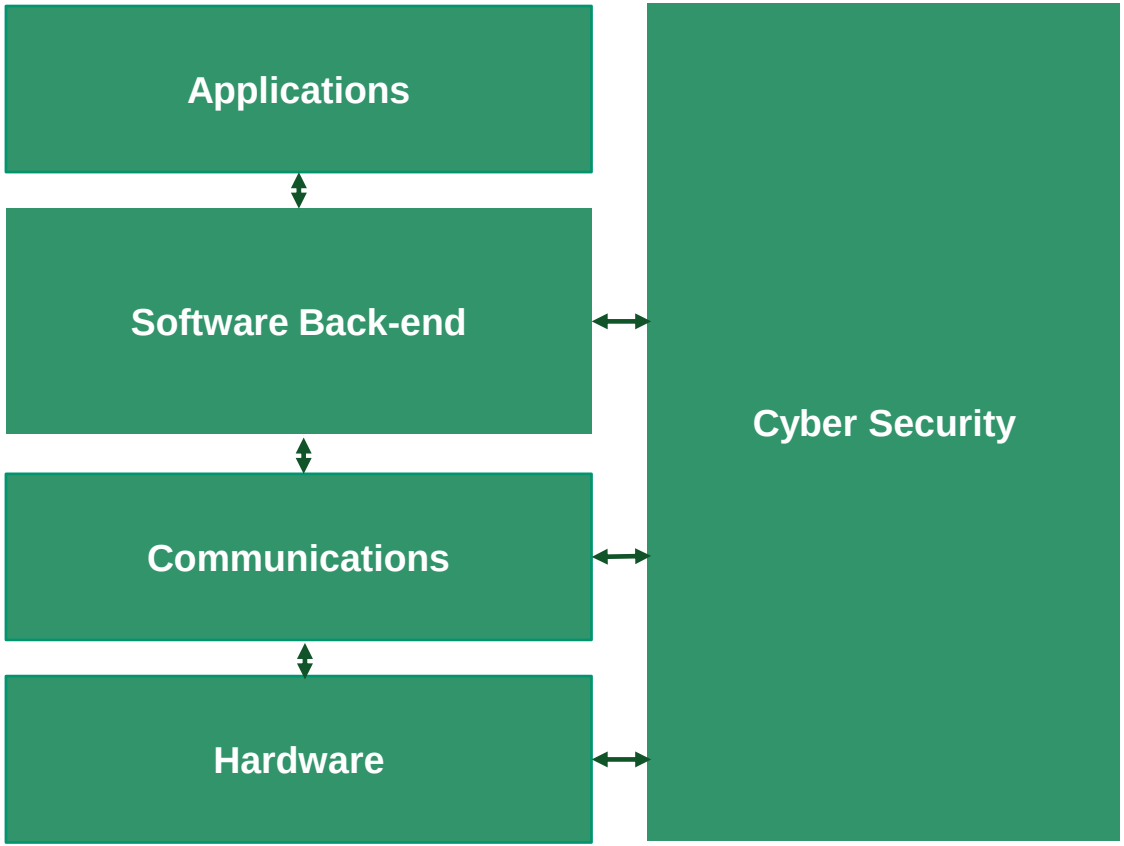
X ***Key Disruption Thrusts***

Disruption is ongoing and a new IIoT stack in emerging

Traditional Industrial Automation Stack

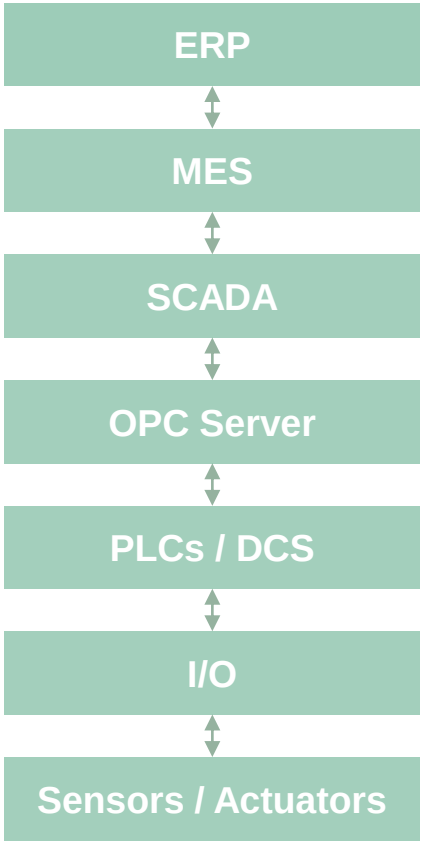


Key Building Blocks of the Emerging IIoT Stack

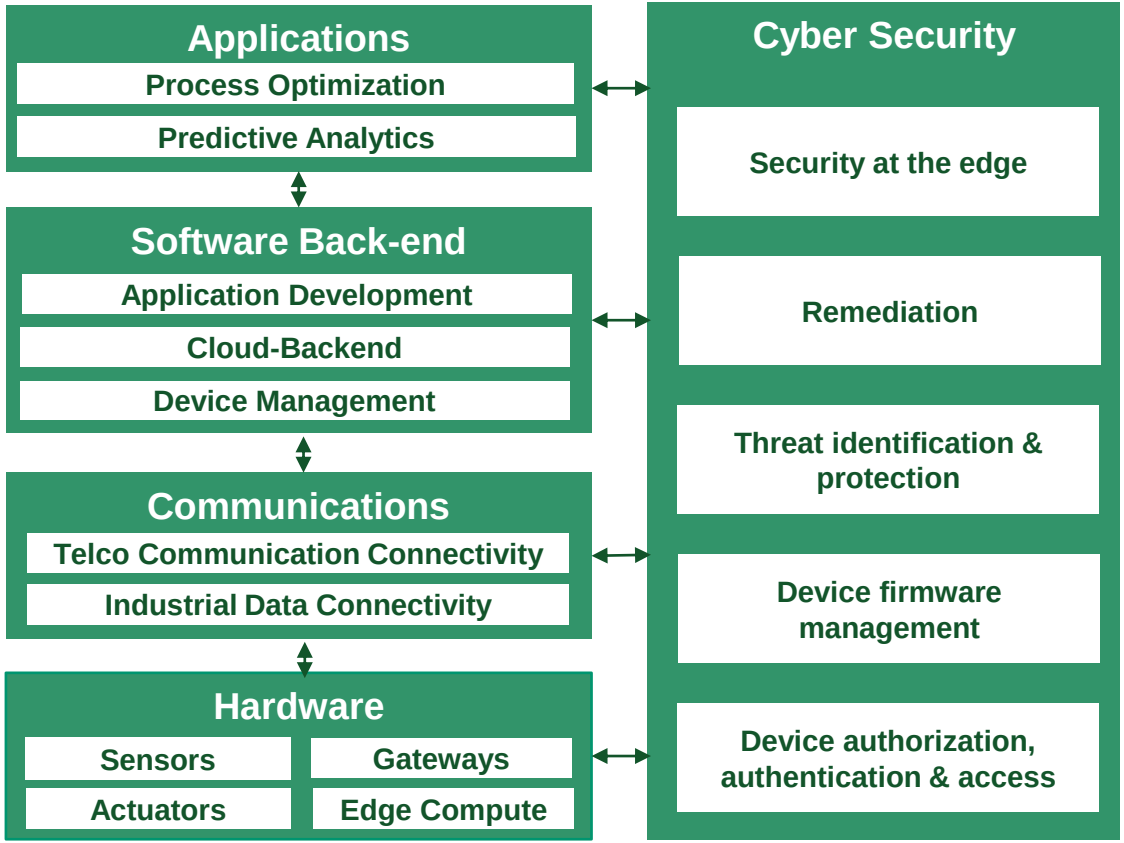


Detailed building blocks of the new IIoT are increasingly recognizable

Traditional Industrial Automation Stack



Key Building Blocks of the Emerging IIoT Stack



Gateways and Routers are key hardware components in the IIoT stack

Definitions

Gateway*:* used to connect a variety of field or edge devices to communication networks. Forwards & processes data. Supports a variety of communication protocols.

Router: Forward data packets from one network to another. Only supports one communication protocol.

Key Functions

Industrialized for use in harsh environments

Cloud integration protocols are supported

Data processing & edge analytics increasingly required

Application Programmable Interface (API) Management

Key Drivers

Network edge increasingly in focus

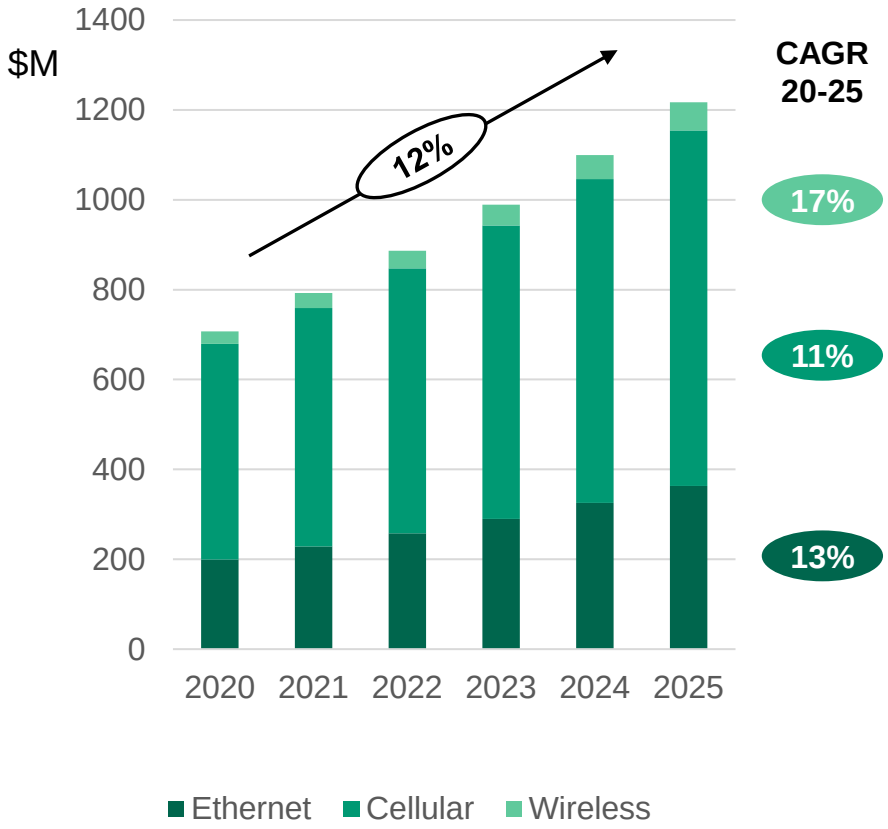
Edge computing application growth

Incremental edge processing capabilities, especially: AI, Machine Vision, Video Analytics

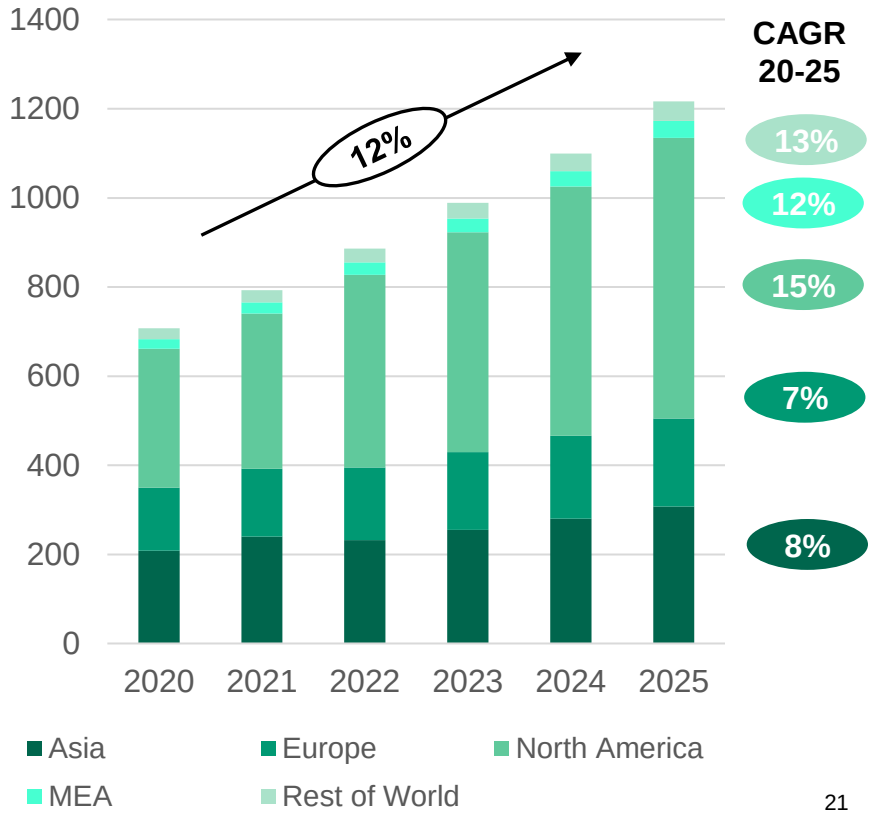
Selected major Gateway & Router players

Global Industrial IoT Gateways and Routers Market Size

By Network Type

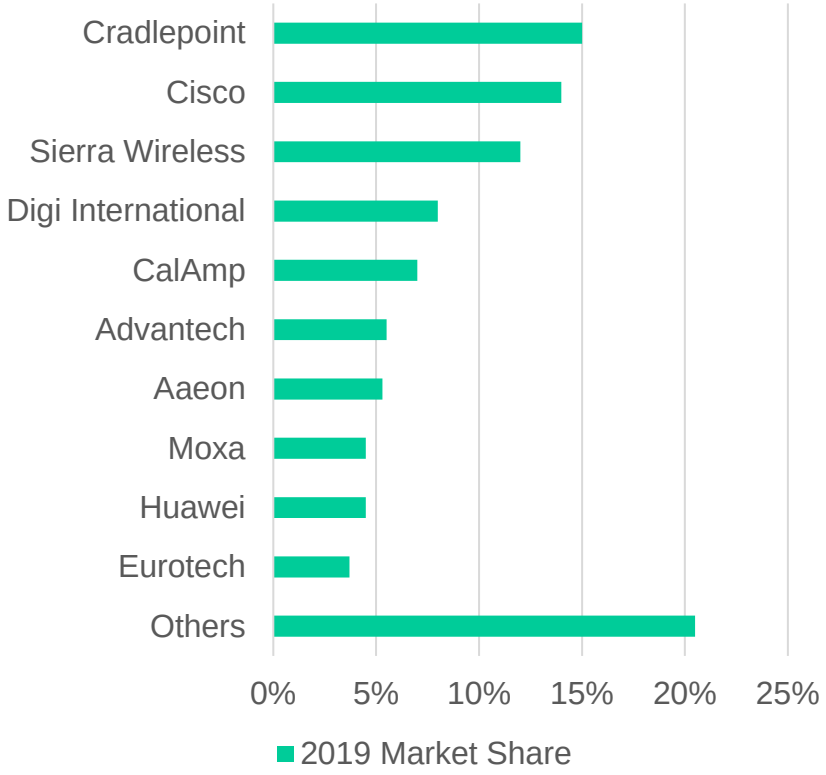


By Region

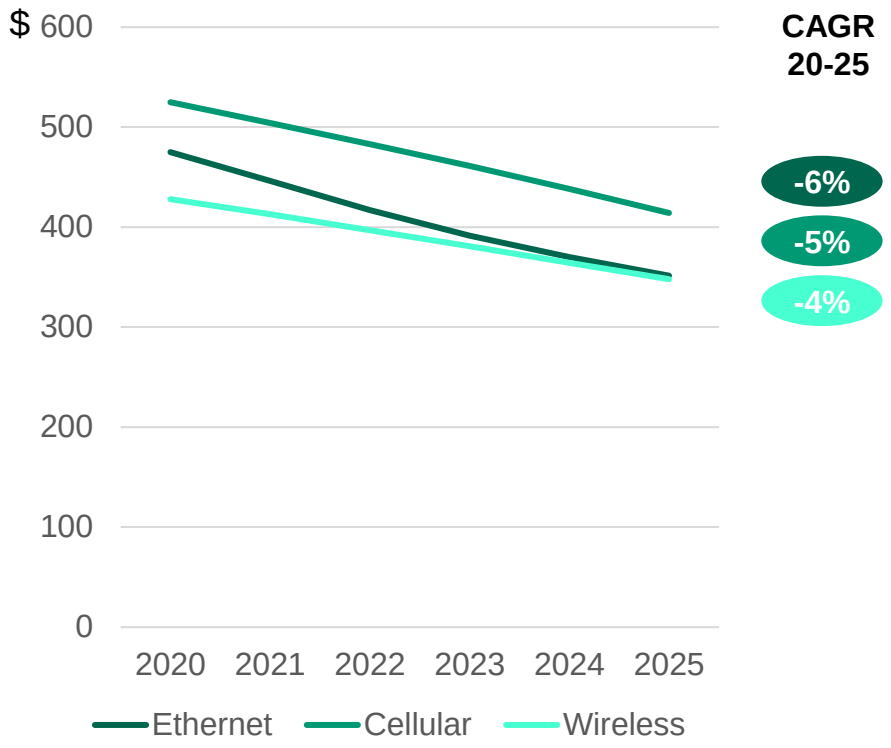


Global Industrial IoT Gateways and Routers Key Competitors & Price Erosion

Key Competitors



Average Selling Price



Opportunities, threats & high growth industrial segments for gateways & routers

Key Opportunities for Vendors

Partner with **IIoT platform** vendors

Participate more broadly in the IIoT eco-system

Move from products **to solutions**

Proactively **address cyber security** concerns

Support a **broader range of protocols**

Offer increasing **edge compute functionality**

Add **Time Sensitivity Networking (TSN)** to enable real time control of devices

Key Threats for Vendors

IIoT cloud providers descending to the edge

Devices that **connect directly to** the cloud

High Growth Industrial Segments

Power: Transmission & Distribution

Transportation & Logistics

Smart Cities

Oil, Gas & Chemicals

Industrial Machinery

The Industrial Internet Consortium is emerging as the strongest IIoT alliance

Our mission is to deliver transformative business value to organizations, industry & society by accelerating adoption of a trustworthy internet of things.

industrial internet CONSORTIUM

MITRE · DELL EMC · Microsoft · HUAWEI · PURDUE UNIVERSITY · rti · GE

Current Steering Committee Member Organizations

A selection of the Industrial Internet Consortium's Partners

Wi SUN Alliance · NIST National Institute of Standards and Technology U.S. Department of Commerce · EDGE X FOUNDRY · OPC FOUNDATION · Robot Revolution & Industrial IoT Initiative ロボット革命・産業IoTイニシアティブ協議会 · IoT Acceleration Consortium · LF EDGE · OSGi Alliance · MULTEFIRE · Edge Computing CONSORTIUM · TRUSTED IoT ALLIANCE · CAICT 中国信息通信研究院 · NEMA National Electrical Manufacturers Association · AECC AUTOMOTIVE EDGE COMPUTING CONSORTIUM · OpenFog OpenFogConsortium.org · one M2M · AVNU alliance avnu.org · PLATTFORM INDUSTRIE 4.0 · OGC Making location count. www.opengeospatial.org · GLOBALPLATFORM THE STANDARD FOR SECURE DIGITAL SERVICES AND DEVICES · 工业互联网产业联盟 Alliance of Industrial Internet · digital twin CONSORTIUM · Linaro · IVI Industrial Value Chain Initiative

The Industrial Internet Consortium's has established liaisons with over 40 IoT alliances and standard's organizations

Large[1] IoT Platform Providers with an Industrial focus

Technology Players

These companies are seeking to strengthen their presence in industrial verticals

Industry Focused Technology Players

These companies are seeking to expand their position in the industrial digital value chain

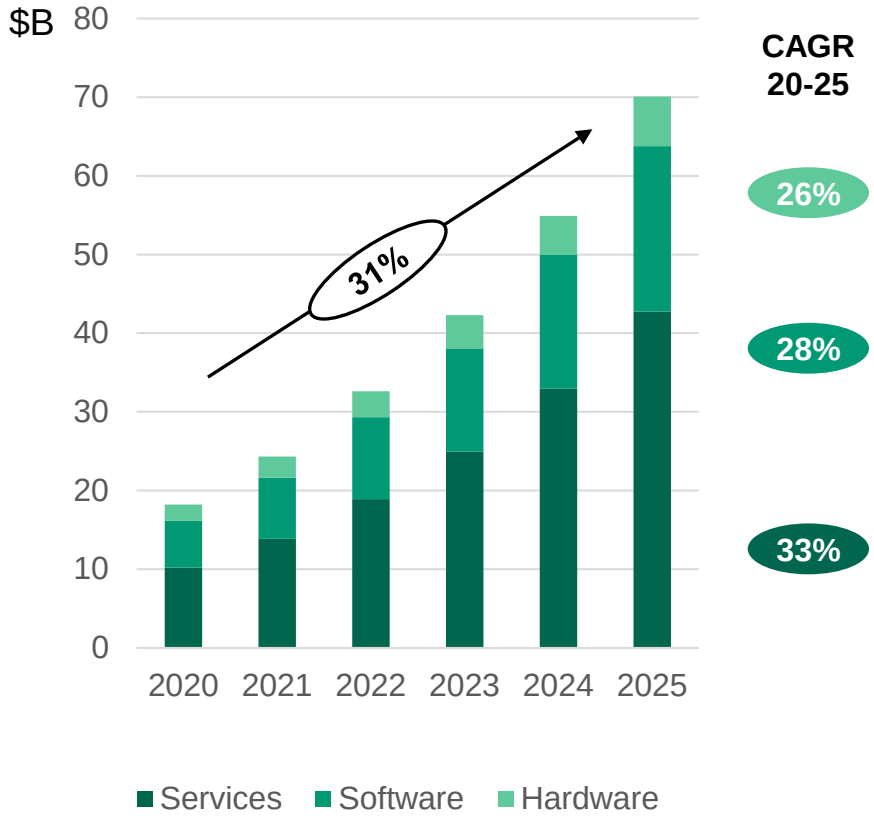
Industrial Players

These industrial companies are seeking to add new digital products & services

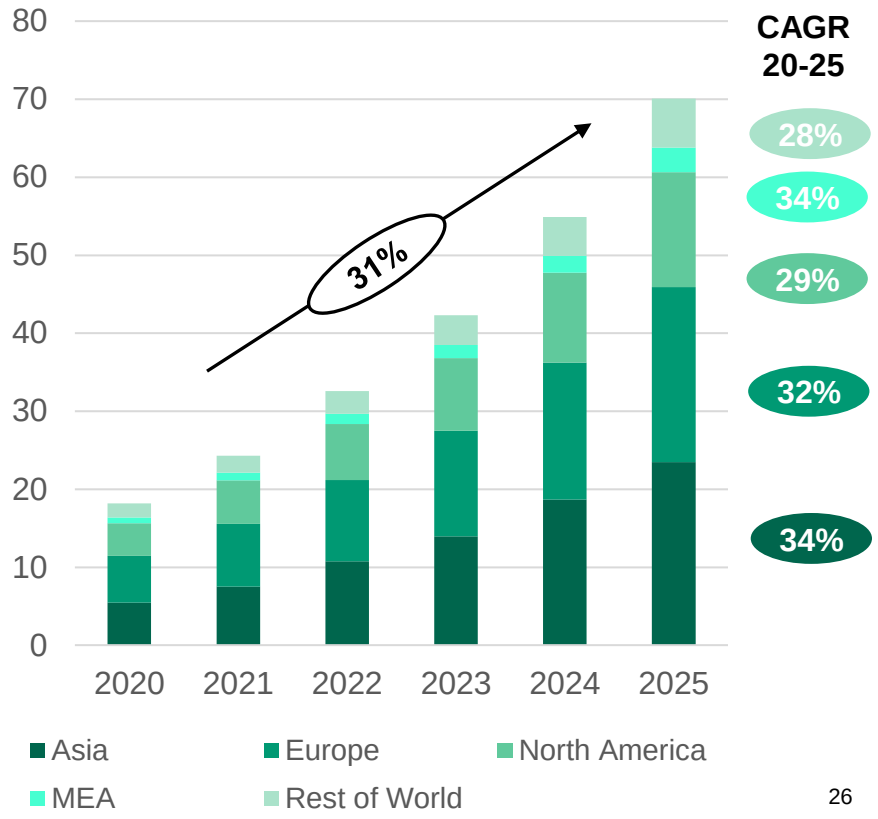
[1] Providers with more than 200 employees are targeted here

Global Industrial Data Analytics Market Size

By Offering Type

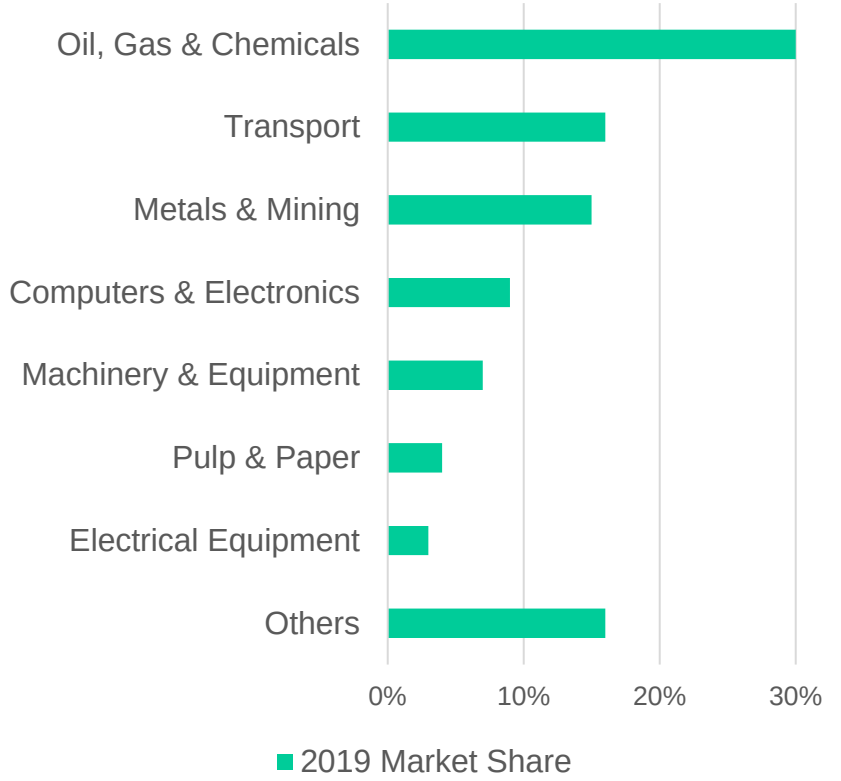


By Region

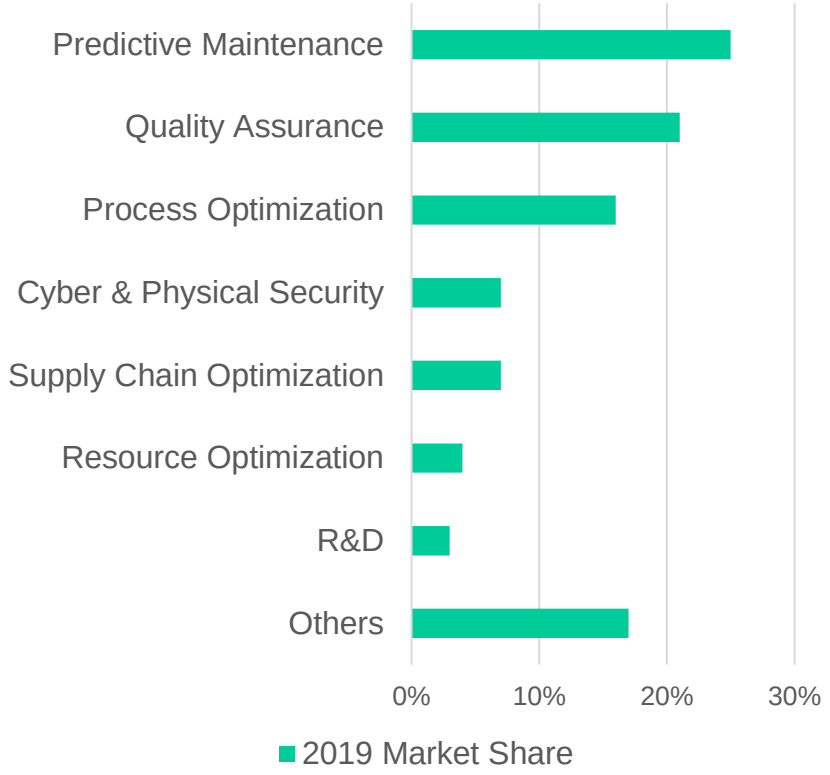


Global Industrial Data Analytics Market Share by Industry & Use Case

By Industry



By Use Case



4 leading use cases for AI based industrial data analytics

	1a Predictive Maintenance of Single Assets	1b Predictive Maintenance of Compete Plants / Factories	2a Automated Optical Quality Assurance	2b Automated Non-Optical Quality Assurance
Key Use Case	Predicting when & how a single asset will fail (e.g. by using vibration sensor data from a bearing)	Prioritising maintenance activities in a plant / factory	Using a camera & computer vision to identify incorrect assembly & component defects	Using a variety of sensor data to predict product quality
Industries with highest penetration	▪ Mining ▪ Oil, Gas & Chemical ▪ Electricity T&D	▪ Mining ▪ Oil, Gas & Chemical ▪ Automotive ▪ Power Generation	▪ Computers & electronics ▪ Automotive	▪ Electrical equipment ▪ Metals ▪ Machinery ▪ Automotive
Key Customer Value Propositions	▪ Lower maintenance costs ▪ Increased uptime of critical assets	▪ Lower maintenance costs ▪ Increased plant uptime	▪ Quality Improvement ▪ Lower inspection & warranty costs ▪ Regulatory compliance	▪ Quality Improvement ▪ Lower inspection & warranty costs ▪ Regulatory compliance

Large[1] Industrial IoT AI Analytics Providers (1/2)

IoT Hardware Players

These companies are seeking to produce hardware that is optimized for AI analytics

IoT System Integrators

These companies are seeking to provide customized AI analytics solutions to their clients

Industrial Players

These companies are seeking to add AI analytics offerings to their traditional offerings

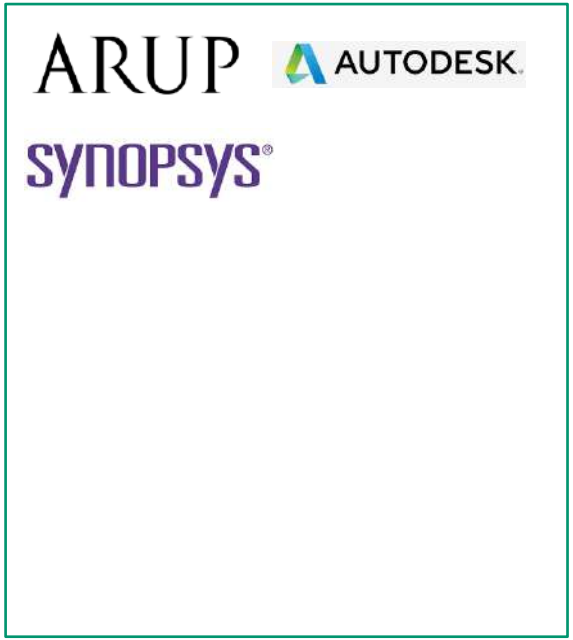
[1] Providers with more than 200 employees are targeted here

Large[1] Industrial IoT AI Analytics Providers (2/2)

Big Tech Players

These companies are seeking to strengthen their presence in industrial verticals

Industrial Design Specialists



These companies are seeking to improve their design software with AI

AI Specialists

These companies are seeking to apply their AI expertise to a broad array of industrial sectors

[1] Providers with more than 200 employees are targeted here

Most Industrial Companies are attempting a ‘Digital Transformation’

Typical 3 Pillars of the Digital Transformation of an Industrial Company	Digitalization of Offered Product & Services	Digitalization of Internal Processes (Enterprise & Operational)	Cultural & skills shift to(wards) Digital
How is each Pillar typically advanced?	▪ In-house development ▪ Partnering with digitally native companies (established or start-ups) ▪ M&A	▪ Purchase / lease of Enterprise Software ▪ Partner with external consultants or system integrators to improve digitalize operations ▪ Trial / pilot in-house digital solutions	▪ Recruitment from digitally native companies, ▪ Training ▪ New Chief Digital Officer led organizations
Key Challenges	▪ Lack of speed & agility ▪ Finding the right customer value proposition	▪ No willing system integration risk takers ▪ Robust & defensible business case	▪ Organization rejects incoming digital culture ▪ Shift is far too slow

Most Industrial Companies are adding digital products & services

Digitalization of Offered Product & Services

Enabler 1

- **What: Digital Twin**
- How: In-house development, partnerships, acquisitions
- Why: To enable efficient development & delivery of new digital services

3 key strategic thrusts

- **What: Co-create new digital offerings together with key customers**
- How: Collaborate to enable new customer revenues streams &/or significant efficiency gains, in-house development or adjacency acquisition
- Why: To position as a clear leader, via continuous customer-led innovation

- **What: develop & add a series of apps that deliver value to the customer**
- How: In-house + partners for IoT platform, in house + acquisition for data analytics
- Why: Products + apps provides differentiation versus software-only players

- **What: digitalize products e.g. by adding smart sensors**
- How: work with vendors or via acquisitions
- Why: To add differentiation versus low-cost competitors

Enabler 2

- **What: Cyber Security & communications**
- How: Partnerships or acquisitions
- Why: To meet regulatory & customer requirements, to mitigate risk of security breaches

5 key reasons Corporates are making Industrial IoT acquisitions

To add new features & functionality to an existing product line	▪ Corporate buyer uses start-up's technology to add a new software module, or new hardware functionality ▪ Aim is to increase the competitiveness of the current portfolio
To fill a portfolio white spot	▪ Corporate buyer is missing a product, that is often needed to be supplied as part of a broader customer solution ▪ Aim is to rapidly grow the acquired company, whilst better satisfying existing customer's needs
To vertically integrate a strategic supplier or proven SI partner	▪ To bring in-house a strategic supplier to reduce supply risk and increase own value add and margin ▪ Or to bring in-house a proven strategic System Integration (SI) partner, to secure access to rare key skills and improve customer intimacy
To add capabilities & expertise in a strategic high growth area	▪ To strengthen the buyer's human resources and/or offering in a segment that has been deemed strategic and/or high growth ▪ Acquisition's are typically much faster than individual hiring, training & in-house development
To enter an adjacent segment with a technology that disrupts the incumbents	▪ A Corporate may not be present or barely present in an adjacent attractive market segment ▪ The Corporate can enter and disrupt the incumbents with the acquisition of an innovative start-up

4 Recent Industrial IoT Related Acquisitions made by ABB

ABB (NYS: ABB) is a global industrial corporation, with a 130-year history, the firm specializes in electrification & automation products systems and services

Cylon

March 2020

Target Scope: IoT smart building solutions

Rationale: To enhance ABB's portfolio for the commercial buildings segment, particularly new innovations in energy-optimization and comfort.

B&R

Sept 2017

$2.4B

Target Scope: Products (e.g. PLCs, Industrial PLCs, software & services that enable the automation of discrete industries

Rationale: Sizable acquisition that complements ABB's already strong presence in both process industry automation as well as robotics

intrion
industrial automation

Sept 2018

Target Scope: System Integration for production end of line & packaging automation

Rationale: To strengthen ABB Robotics' presence & capabilities in non-automotive sectors

KEYMILE
because connectivity matters

July 2017

Target Scope: High reliability, low latency fiber-optic mission critical communications products

Rationale: To expand ABB's communications portfolio to enhance leadership position in high reliability communication networks for Power Grids

4 Recent Industrial IoT Related Acquisitions made by Siemens

SIEMENS

Siemens is a large industrial conglomerate, specializing in automation, electrification, energy & health. Its separately listed business units include Siemens Healthineers and Siemens Gamesa, which supply medical imaging equipment and wind turbines, respectively.

AIT Goehner

January 2020

Target Scope: A leading provider of vision-based quality & identification systems for a wide variety of industries

Rationale: To fill a white spot in Siemens portfolio as it strives to becomes a leader in the digitalization of industry

J2INNOVATIONS

June 2018

Target Scope: Open software platform for Building Automation and IoT

Rationale: The acquisition supports Siemens strategy to lead in the digitalization of buildings. Siemens can accelerate J2Innovations' international expansion

AIT

Jan 2020

Target Scope: Innovative software & services based on Microsoft .NET platforms which support plant & machine builders and factory operators to implement tailored solutions

Rationale: To expand Siemens Industrial IoT services offering

MultiMechanics

November 2019

Target Scope: virtual testing for software composite materials. Accurately predicts when and how composite materials can fail.

Rationale: Fills a white spot in Siemens comprehensive portfolio of industrial design software, which is in-turn a key pillar of Siemens leadership in Digital Twins

4 Recent Industrial IoT Related Acquisitions made by PTC

PTC (NAS: PTC) offers high-end computer-assisted design (Creo) and product lifecycle management (Windchill) software as well as IoT and AR industrial solutions.

Onshape

November 2019

≈$470M

Target Scope: SaaS 3D CAD platform that enables teamwork work via any web browser, phone, or tablet. The platform designs products and brings them to market faster

Rationale: Accelerates PTC's business model towards recurring revenues

Factora

April 2019

Target Scope: Manufacturing Execution Systems (MES) and Manufacturing Operations Management (MOM) solutions that increase efficiency improve quality & decrease variability

Rationale: Strengthens PTCs operational system integration (SI) expertise. Factora was already a strong System Integration partner of PTC.

twnkls

June 2019

Target Scope: Provider of customized AR apps and services built upon own proprietary collaborative AR

Rationale: To deepen PTC's expertise in AR technology & customer deployments. Twnkls experts will train the trainers

FRUSTUM

November 2018

≈$70M

Target Scope: Design and topology optimization platform, that accurately considers material layout and manufacturability.

Rationale: Add AI based generative design module to PTC's Creo design software

4 Recent Industrial IoT Related Acquisitions made by Accenture

Accenture (NYS: ACN) is leading global IT services firm that provides consulting, strategy, and technology and operational services. These services range from aiding enterprises with digital transformation, to procurement services, to software system integration.

August 2020

Target Scope: Provider of business improvement consultancy services. Specializes in information systems for product lifecycle management (PLM)

Rationale: Adds skills and capabilities in strategic high-growth areas

December 2019

Target Scope: Business process optimization solutions and services which help clients design and manufacture new products. A trusted partner for SAP and Dassault Systems

Rationale: Adds key skills and capabilities to Accenture's Industry X.0 division

May 2020

Target Scope: Specializes in designing and implementing industrial manufacturing execution systems MES), IIoT systems and shop-floor control systems

Rationale: To strengthen Accenture's offering and presence in digital manufacturing transformation services

October 2019

Target Scope: Strategic advisory, resource logistics, design, prototype development, engineering and support services for manufacturing firms.

Rationale: Expands Accenture Industry X.0's ability to innovate connected, IoT-enabled, experiences for clients from idea through to realization

4 Recent Industrial IoT Related Acquisitions made by Emerson

Emerson (NYS: EMR) is a multi-industrial conglomerate that operates two main businesses:

- **Automation Solutions – Manufacturing process automation**
- **Commercial & Residential Solutions – HVAC, refrigeration products, tools, compressors etc.**

OSI powering the future

August 2020

$1.6B

Target Scope: Supplier of SCADA based control systems mainly to the utility and oil & gas industries

Rationale: Complements Emerson's strong presence in DCS based control systems for large power plants & process industries

iSolutions Consulting

December 2018

Target Scope: Provider of IT/OT consulting services for upstream oil and gas, power and utilities, and other industries

Rationale: Add skills and expertise in a strategic growth area for Emerson

BIO-G

April 2019

Target Scope: Analytics software that provides data integration, modeling, simulation & scheduling, helping biomanufacturers increase facility capacity, flexibility & productivity

Rationale: Strengthens Emerson's position in the fast-growing Bio-manufacturing sector

Cooper ATKINS

January 2018

$250M

Target Scope: Cloud based temperature management and monitoring products designed to inspect the temperature of food

Rationale: The acquisition fills a white-spot in Emerson's portfolio, the consistent and safe control of food and other temperature-sensitive goods

4 Recent Industrial IoT Related Acquisitions made by Cisco

Cisco is the world's largest hardware & software supplier within the networking solutions sector

- **The infrastructure platforms group sells products for switching, routing, data center, & wireless**
- **The applications portfolio contains collaboration, analytics, and IoT products**
- **The security segment contains firewall and software-defined security products**

July 2020

Target Scope: Fluidmesh Networks provides wireless systems for security, industrial & mission-critical applications. Resilient backhaul systems.

Rationale: Fills a portfolio gap in high-growth segments: mission-critical & on-the-move assets

August 2019

Target Scope: end-to-end CRM, ERP and other customized software solutions leveraging data science & AI

Rationale: Add skills and expertise in a strategic growth area for Cisco

December 2019

Target Scope: Dedicated to building the lowest latency networking software, hardware and firmware products.

Rationale: Ultra low-latency functionality added to Cisco's Nexus portfolio of Data Center switches to make them more competitive in high-frequency trading & other mission-critical applications

January 2019

Target Scope: Sentryo provides device visibility and security solutions for industrial control system (ICS) networks

Rationale: Add new functionality & capabilities to CISCO's intent-based network architecture

Cyber Security advancement addresses a key IIoT customer concern

- ***Should prevent, protect, and respond to cyber security threats***
- ***Should continually improve protection and provide records for audit and compliance***

Advanced	**Security at the edge**	Mission-critical edge devices & application typically require embedded designed-in cyber security features
	Remediation	Automatically take affected devices offline, roll-back & bring back online in a timely manner Restore devices and networks to a previous known safe state
	Threat identification & protection	Continuous monitoring of devices & networks to identify security breaches & other departures from normal operations Analytics to understand the extent of actual and potential breaches
Basic	**Device firmware management**	Secure deployment & configuration of device firmware Updating firmware to address known or potential security vulnerabilities
	Device authorization, authentication & access	Secure authentication processes for up to millions of devices, access only given to the services each device is authorized to use

4 key industry characteristics that increase the likelihood if IIoT adoption

1 Moveable Equipment

Key IIoT use cases

Equipment location & use-tracking

Safe operations

Equipment condition

E*.g. Forklifts, trucks, lifts*

3 Key Component suppliers

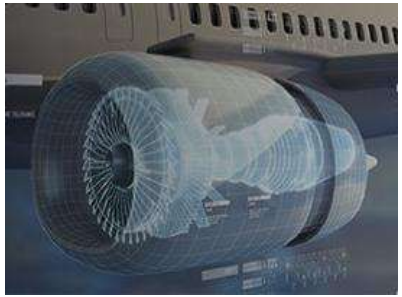
Enables tracking of installed base location & application

Facilitates direct access to the customer

Enables new services & recurring revenues

E*.g. Bearings, Gearboxes, Motors*

2 Remote High Value Assets



Fuel efficiency optimization

Condition monitoring & failure prognostics

Ensuring readiness of spares & maintenance crews

Asset-as-a-service business models

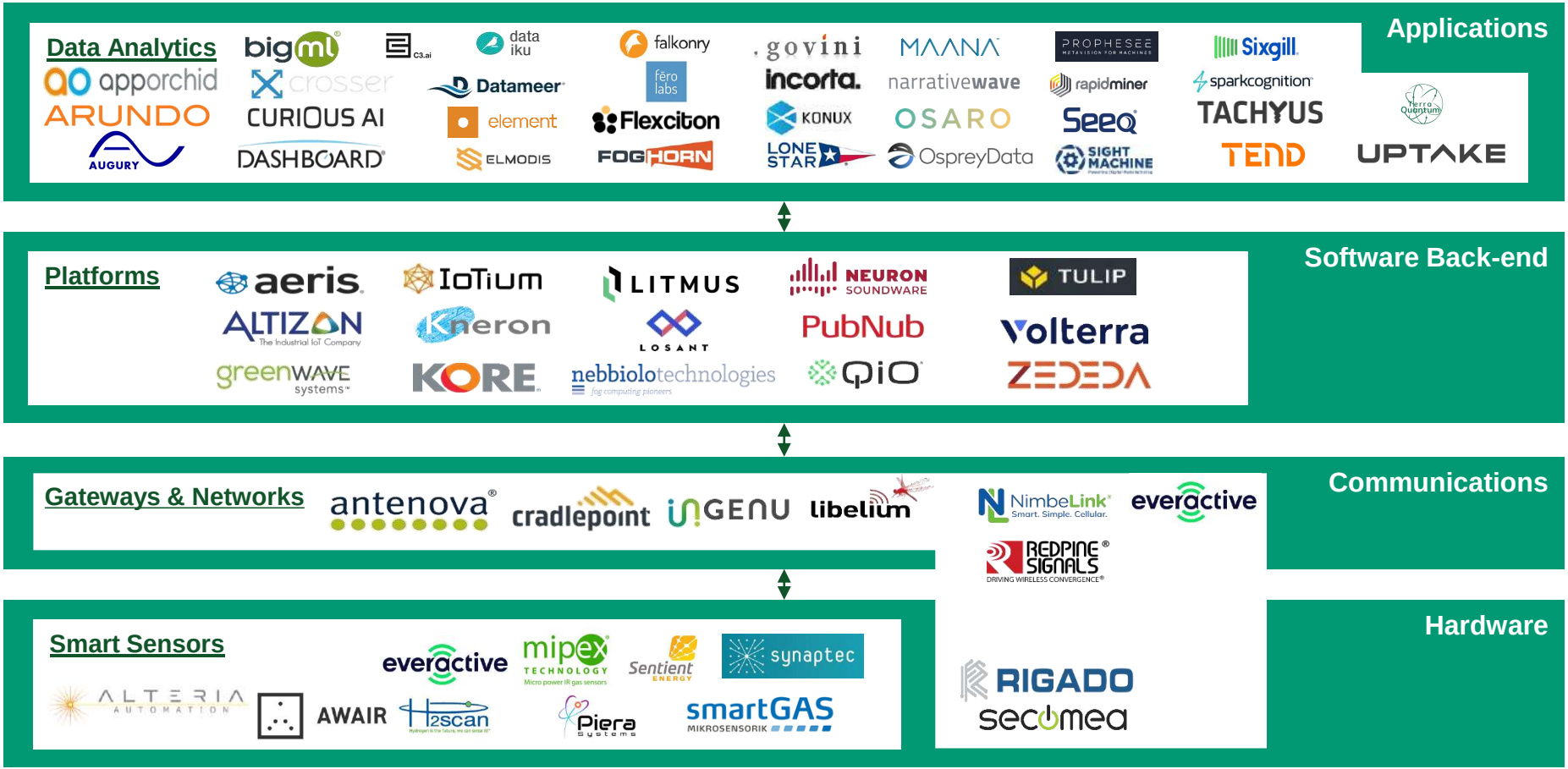
E*.g. Aircraft engines, oil platforms, wind turbines, ships*

4 Measurement Products

Data which was always collected – is now transferred to the cloud where additional value can be generated

E*.g. Sensors & monitoring devices*

The VC-backed Industrial IoT Companies featured in this report



9 Industrial IoT Smart Sensor Companies to Watch (1/1)

ALTERIA AUTOMATION	Wired & wireless industrial smart sensors, connectivity products & data acquisition nodes which enable predictive maintenance models for more effective operations	Piera Systems	Intelligent Particle Sensors (IPS), which use a breakthrough approach for detecting & measuring the quantity and size of particles suspended in any medium, initially air
AWAIR	Indoor air monitoring devices that analyze indoor air quality including, temperature, humidity, carbon dioxide, volatile organic compounds and dust	Acquired by Koch Sentient ENERGY	Intelligent sensing platform which combines easily deployable intelligent sensors with powerful analytics that enable power utilities to detect faults & pre-empt problems
everactive	Battery-less, wireless IoT sensing solutions that provide insights into the health of industrial assets	smartGAS MIKROSENSORIK	Gas sensors characterized by low detection limits, low drift, a wide temperature range, low O&M costs, enabling customers to use them for process control & emission measurement
H2scan Hydrogen is the future, we can sense it!	H_2 sensing technology systems that measure H_2 concentration in oil and mixed gas environments. Key applications: transformers, oil, gas & chemical processes, fuel cells	synaptec	Sensors and a fiber optic network that measure voltage, current, temperature and vibrations at multiple locations to reduce downtime in electrical networks
mipex TECHNOLOGY Micro power IR gas sensors	Infrared optical combustible gas sensors used in gas analyzing equipment to improve & secure plant safety		

8 Industrial IoT Gateways & Network Companies to Watch (1/1)

antenova®	Antenna modules for wireless M2M, IoT and consumer electronic devices. High efficiency, low power consumption and reliable performance	REDPINE SIGNALS® DRIVING WIRELESS CONVERGENCE®	Communications networking equipment for industrial, commercial, medical and home automation applications
Acquired by Ericsson cradlepoint	Wireless edge solutions that unlock the power of LTE and 5G cellular networks for organizations' people, places, and things	RIGADO	Large-scale solutions that use the Bluetooth Low Energy (BLE) protocol, thereby helping companies reduce the time, cost and risk of IoT product development.
INGENU	Machine-exclusive wireless networks that focus on machine to machine (M2M) communication by allowing devices to become Internet of Things (IoT) devices	secomea	Firewall/VPN and remote device management solutions that are easy to install, setup and use. Effective & secure industry communication solutions.
libelium	Modular easily deployable wireless sensors that deliver reliable services via IoT and Smart Cities technologies		
NimbeLink® Smart. Simple. Cellular.	Cellular products & solutions that make connecting IoT devices to cellular networks easy, significantly reducing costs and time-to-market		

10 Industrial IoT Platform Companies to Watch (1/2)

aeris	Developer of an end-to-end machine-to-machine communication platform designed to manage thousands of disparate end points and devices	KORE	Provider of global machine-to-machine (M2M) network connectivity services Enables customers to activate, deactivate, locate, & manage all their global devices
ALTIZON The Industrial IoT Company	Developer of a big data-focused platform, focused on the industrial internet Enables the digital transformation of industry	LITMUS	IoT edge and cloud software platform designed to bridge the gap between field or factory data and business applications
greenWAVE systems™	The IoT software platform enables machine-to-machine network architects and service providers to monetize their networks Software Defined Mobile & Fixed Networks	LOSANT	Enterprise IoT platform, teams can quickly & securely build real-time data applications Powerful data collection, aggregation & visualization
IoTium	Secure edge-cloud infrastructure, ensures that any machine, using any protocol, can be instantly and securely connected to any application residing in a data center	nebbiolotechnologies fog computing pioneers	Cloud-based fog computing platform, inserts a new functionality layer in the industrial automation pyramid between production machines and process control
Kneron	Integrated circuit & software platform, upon which real-time artificial intelligence applications may be readily deployed No cloud connection needed	NEURON SOUNDWARE	An audio diagnostic technology platform, which uses sounds, other parameters & probabilistic methods to monitor & assess machine health

5 more Industrial IoT Platform Companies to Watch (2/2)

PubNub	Cloud-based software platform that enables customers to build, scale and manage real-time IoT device applications
QiO	Software platform, focused on open-source technologies, that enables, big-data, IoT and mobility applications, to deliver analytics, collaboration and prediction
TULIP	Manufacturing application development platform that integrates industrial IoT technologies with legacy factory machines to capture & analyze real-time production data
Volterra	Edge computing platform designed to solve problems that require low-latency computing Helps to deploy, connect, secure & operate applications across multi-cloud and edge sites
ZEDEDA	Integrated circuit & software platform, upon which real-time artificial intelligence applications may be readily deployed No cloud connection needed

10 Industrial IoT Data Analytics Companies to Watch (1/4)

apporchid	Software development application that uses AI and natural language processing to extract value from unstructured and diverse IoT data	crosser	Fog computing streaming analytics and integration software for any edge, on-premise or cloud architecture
ARUNDO	Cloud based software that connects live data to machine learning models and model outputs to business decisions for improved asset reliability and performance	CURIOUS AI	Developer of industrial process prediction, optimization and control tools designed to help businesses boost their productivity
AUGURY	Augury combines artificial intelligence and the Internet of Things to make machines more reliable, reduce their environmental impact, and enhance human productivity	DASHBOARD	IoT-enabled remote flow monitoring system which shows real-time pipeline data Provides end-to-end continuous monitoring of industrial processes and infrastructure
bigml	Machine learning software that distills predictive patterns from data into real-life intelligent applications which are easily accessible	data iku	Cloud-based end-to-end advanced analytics tool that combines data science & machine learning with collaborative features Enables self-service analytics
Filed for IPO C3.ai	Cloud-based software uses machine learning to expedite the integration & analysis of disparate enterprise data into a unified cloud-based data image	Datameer	Software platform that makes big data analytics easy for everyone Point-&-click analytics, drag & drop visualization

10 more Industrial IoT Data Analytics Companies to Watch (2/4)

element	Industrial analytics software which makes it easy to manage and integrate large volumes of data from a variety of diverse industrial sources
FOGHORN	Edge intelligence software that delivers real-time industrial-grade analytics to resource-constrained edge devices. Easily integrated with IoT cloud platforms (e.g. AWS, Azure)
ELMODIS	Provider of hardware and software-based machine diagnostics and monitoring system designed to detect industrial machinery malfunctions
.govini	Data science platform that combines strategic intelligence with the attributes of machine-scaling and advanced AI based queries to deliver decision grade information
falkonry	AI based automatic pattern recognition software which translates industrial operational data into operating conditions without the need for programming
incorta.	Real-time analytics platform which consolidates the most essential data pipeline tools, data science and data enrichment tools, into a true self-service data experience
fēro labs	Automated machine learning platform which performs industrial data analytics Predicts the quality of production materials used for production as well as machine failure
KONUX	IoT-based software which helps industrial companies unlock a new level of asset performance through real-time data fusion and analytics
Flexciton	Industrial planning software which optimally schedules wafers across the whole fab Advanced optimization is used to select the best schedule from millions of options
LONE STAR	Decision analysis & advanced analytics software for transportation, logistics, aerospace, defense & other industrial markets Enhances the decision-making of its users

10 more Industrial IoT Data Analytics Companies to Watch (3/4)

MAANA	The Maana Knowledge Platform organizes industrial data & human expertise into digital knowledge for better decisions across the industrial value chain (e.g. well to pump)	rapidminer	Brings AI to the enterprise via an open & extensible data science platform. Unifies the data lifecycle from data prep to machine learning to predictive model deployment
narrativewave	Next-generation SaaS providing self-service data analytics to automate decisions for business users without the need for software developers or data scientists	Seeq	Analytics software that collects time-series data, events & signals, as well as contextual data generated by manufacturing teams to accelerate industrial process analytics
OSARO	AI industrial automation software enables robots to perform diverse tasks in diverse environments, accelerating the transition from static robotic systems to dynamic solutions	SIGHT MACHINE Powering Digital Manufacturing	Digital manufacturing platform that addresses in real-time the critical quality & productivity challenges throughout a manufacturing enterprise
OspreyData	Platform providing predictive insights into the behavior of complex mechanical systems. A leader in helping upstream O&G improve operations by leveraging the digital oilfield	Sixgill	Cloud based universal sensor data services platform which acquires sensor data from any emitter & provides dynamic sensor data intelligence enabling an appropriate response
PROPHESEE METAVISION FOR MACHINES	Neuromorphic vision system, that improves efficiency & intelligence of video processing, enabling clients to detect & analyze high-speed transient visual events in real-time	sparkcognition	AI based machine learning software analyzes complex data in the fields of defense tech, IIoT and finance and provides valuable insights

3 more Industrial IoT Data Analytics Companies to Watch (4/4)

TACHYUS	Oil & gas production optimization software, allows reservoir & production engineers to use historical production data to build predictive models of flow in a producing field
TEND	Predictive analytics platform that facilitates the remote maintenance & monitoring of industrial robots. Alerts are sent when maintenance is needed, or an alarm is triggered
Terra Quantum	Geospatial AI analytics for remote sensing data gathered by satellites, enables corporations & governments to conduct geological surveys & in an effective manner
UPTAKE	Predictive analytics platform that collects & interprets sensor data & converts insights into workflow integrated actions, making industry more reliable, productive, safe & secure

15 companies raised equity in 2020, 2 have been acquired,1 has filed for an IPO

apporchid	$2.5M of later-stage VC funding raised in Nov 2020
AUGURY	$55M of Series D funding raised in Oct 2020
AWAIR	$4M of Series B funding raised in June 2020
C3.ai	$150M raised via PIPE in Nov 2020 Launch of IPO announced on 30 Nov 2020
cradlepoint	Ericsson completed acquisition in Nov 2020 for ≈$1.1B
data iku	$100M of Series D funding raised in Aug 2020
ELEMENT ANALYTICS	$18M of Series 2 funding raised in June 2020
everactive	$35M of Series C funding raised in Sept 2020
fero labs	$2.7M of later-stage VC funding raised in July 2020
FOGHORN	$25.0M of Series C funding raised in Feb 2020
H2scan	$13.5M of Series E funding raised in January 2020
Kneron	$40M of Series A2 funding raised in January 2020
MAANA	$6M of later stage funding raised in Nov 2020
narrativewave	Undisclosed amount of Series A funding raised in Sept 2020
rapidminer	$8M of Series D funding raised in Sept 2020
SeeQ	$28M of Series B funding raised in Sept 2020
Sentient ENERGY	Acquired by Koch Industries for an undisclosed amount in March 2020
Terra Quantum	$7.5M of Series A funding raised in Nov 2020

Company Profiles

Smart Sensors

Company Overview: Alteria Automation

ALTERIA AUTOMATION

www.alteriaautomation.com

Business Overview

Cost effective Smart Sensors, Connectivity Products and Data analysis servers to deliver predictive maintenance solutions

Industrial IoT smart sensors featuring pre-processing technology, provide real-time quality data for predictive maintenance

Wired or wireless real-time connectivity products for industrial applications, Node and Gateway products.

Local or in the cloud database server solutions, with advanced data analysis and Artificial Intelligence modules, to build predictive maintenance models

Key Differentiators

- Very broad portfolio of industrial smart sensors, including acoustic energy, vibration, thermal energy, lubrication, current draw, voltage, gas, air quality, environmental, inertial, corrosion

Key People

- **Co-Founder & CTO – Jose Vigil**
- **Co-Founder & Partner – Minguez Alfonso**
- **Co-Founder & Partner – Mario Alfonso**

Key Achievements

- Completed Digital Attraxion Acceleration program in Belgium
- Received Sensor Innovation award at Chemplast 2018 Expo
- Finalist at Repsol Innovation awards – led to cooperation with Repsol in Oil & Gas sector

HQ & Geographical Presence

HQ: Alcobendas, Spain

Additional Offices:

Sectors Served & Key Applications

- Industry
- Transportation
- Aerospace

Headline Financials

- $175k.of seed funding raised in March 2019

Key Investors

- Hatcher+
- Quake Capital
- Ances Open Innovation
- BIND 4.0

Company Overview: Awair

AWAIR **www.getawair.com**

Business Overview

Developer of an indoor air monitoring device designed to track elements of air to improve air quality and purity

Indoor air monitoring device helps to analyze and control indoor air and measures the indoor air quality by reading five data points in the air including temperature, humidity, carbon dioxide, volatile organic compounds and dust,

Enables users to optimize air quality for good health

The Awair Dashboard makes it easy to track real-time changes in your building, manage your devices, and share valuable insights with building occupants.

Key Differentiators

- Centralized control with actionable insight of data gathered
- Easy automation and integration with current systems
- Share insights and create alerts when conditions become unhealthy

Key Achievements

- Clio Award for Product Design 2016 Winner
- Webby 2016 Mobile Sites & Apps Nominee

Key People

- **CEO - Ronald Ro**
- CTO – Kevin Cho
- CMO – Nicholas Barnes
- VP of Design – Bosung Kim

HQ & Geographical Presence

HQ: San Francisco, CA, USA

Additional Offices:

- Seoul, South Korea

Sectors Served & Key Applications

- Electronics (B2C)
  - Clean Tech
  - Industrials
  - Mobile
- Environmental Services (B2B)

Headline Financials

- $20.5M raised to date
- $10M of Series B funding raised in December 2018
- $4M of further Series B funding raised in June 2020
- ~20 employees

Key Investors

- Access Ventures (Asia)
- Emerson Ventures
- iRobot Ventures
- Nuovo Capital
- The Westly Group
- Altos Ventures

Company Overview: Everactive

www.everactive.com

Business Overview

Developer of battery-less, wireless IoT sensing solutions that provide insights into the health of industrial assets

Battery-less operation achieved by harvesting power from: indoor solar, thermal gradients, vibrations etc. Energy is stored for reliable operations.

A mix of standards compliant and proprietary radios enable ultra low power transmission and receipt with high data rates (Mbps) & over long distances (km+)

Flexible sensor hubs that incorporate a broad range of sensors (temperature, humidity, vibrations, acceleration etc.)

Specialized hardware-accelerated signal processing radically improves energy efficiency, which enables battery-less edge computing

Equipment health insights available continuously available anywhere in the cloud

Key Differentiators

- Sensors need neither wires nor batteries, this significantly reduces installation and maintenance costs
- Solutions enabled by proprietary ultra low power communications technology
- Full-stack solutions for a growing number of specific industrial applications
- Low barriers to scale, to plant and fleet

Key Achievements

- Gartner – Cool Vendor - 2019
- Frost & Sullivan – North American Industrial Internet of Things – New Product Innovation Award – 2019
- NetEvents innovation awards – Winner – Hot Start-Up IoT – 2019

Key People

- **CEO - Bob Nunn**
- Co-Founder & Co-CTO – Dr. Benton Calhoun
- Co-Founder & Co-CTO – Dr. David Wenzloff
- VP Operations – Paul MacMillan
- VP Engineering – Dr. Nathan Roberts
- Director BD & Partnerships – John Greenfield

HQ & Geographical Presence

HQ: Santa Clara, CA, USA

Additional Offices:

- Ann Arbor, MI, USA
- Charlottesville, VA, USA

Sectors Served & Key Applications

- Process Industries
  - Steam Trap Monitoring
- Discrete & Process Industries
  - Rotating Machinery Health Monitoring

Headline Financials

- $100M raised to date
- $42M of Series B funding raised in June 2019
- $35M of Series C funding raised in Sept 2020
- ≈80 employees

Key Investors

- 40 North Ventures
- ABB Technology Ventures
- Asahi Aasei
- Blue Bear Capital
- Fluke
- Future Fund IQT (In-Q-Tel)
- New Enterprise Associates
- OUP (Osage University Partners)
- Thai Oil Group

Company Overview: H2scan

www.h2scan.com

Business Overview

Manufacturer and seller of hydrogen sensing technology systems created to measure hydrogen concentration in oil and mixed gas environments

Hydrogen sensing technology systems provide monitoring and control functions for a range of applications such as transformers, control systems, safety monitoring, and alarm systems

The process hydrogen analyzers and hydrogen leak detectors standalone product lines are currently sold in over 50 countries helping utilities, nuclear power plants, petroleum, fuel cells, industrial hydrogen and petrochemical companies, and other industrial organizations meet safety, regulatory, and process control requirements when doing critical hydrogen monitoring

Key Differentiators

- Lowest total cost of ownership
- Low maintenance and longer calibration intervals,
- Simple system integration and installation,
- Tolerance to harsh background contaminants

Key Achievements

- In Sept 2010 H2Scan launched a new proprietary Automated Sensor Manufacturing (ASM) capability, a cutting-edge system that combines hardware and custom-built software to automatically track, calibrate and analyze sensors throughout the production process

Key People

- **CEO - Dennis Reid**
- CTO – James Litton
- VP, Operations – Jeff Khamnei
- VP, Sales – Michael Nofal
- VP, Tech & Engineering – Vikas Lakhotia

HQ & Geographical Presence

HQ: Valencia, CA, USA

Sectors Served & Key Applications

- Electronic Equipment and Instruments
  - Manufacturing
  - Oil and Gas
- Alternative Energy Equipment

Headline Financials

- $52.4M raised to date
- $13.5M of Series E funding raised in January 2020
- ~50 employees

Key Investors

- Altran Technologies
- RezVen Partners
- H5
- Ravinia Venture
- TGB Partners
- Tri-Strip Associates

Company Overview: Mipex Technology

www.mipex-tech.com

Business Overview

Manufacturer of Non-Dispersive Infra-Red (NDIR) combustible gas sensors for industrial safety services

Miniature optical sensors for the detection of Methane (CH4), Hydrocarbons (e.g. Propane, C3H8) and Carbon Dioxide

Ideal for use in stationary, wireless and portable gas analyzers

Key Differentiators

- Ultra-low power up to 1000 times more energy efficient than competitors' offerings
- Cutting edge digital components – for accurate and reliable gas detection in harsh environments
- In-house production of electronic and optical components for gas sensors, LEDs and photo receivers

Key People

- **CEO – Alexander Maksyutenko**

Key Achievements

- ATEX certified
- ETL certified
- IECEx certifiied

HQ & Geographical Presence

HQ: St Petersburg, Russia

Additional Offices:

- Distribution in the EU by Unitronic of Dusseldorf
- Distribution in China by Tangram of Beijing

Sectors Served & Key Applications

- Mining
- Oil & Gas
- Portable gas detection
- Fixed gas detectors

Headline Financials

- $6.8M raised to date
- $6.8M of early-stage VC funding raised in 2010

Key Investors

- Rusano

Company Overview: Piera Systems

www.pierasystems.com

Business Overview

Specializes in Accurate Air Quality Monitoring at low cost using Intelligent Particles Sensors and Particle Counting Integrated Circuits for applications in the Digital Health Industry

'What's In Your AIR?' is the underlying principle of Piera Systems. 'To Make Air Quality Measurement as accurate, simple, inexpensive and pervasive as Temperature enabling a major improvement in the health of all humans".

The family of 'Intelligent Particle Sensors (IPS)', utilizes a breakthrough custom processor optimized for measuring the smallest particles. IPS have superior accuracy over a wider range (PM0.1-PM10) & report particle size & count in real time at low power.

The Canāree Air Quality Monitors based on IPS sensors together with the SenseiAQ software deliver a real-time dashboard with Air Quality Index together with additional alerts including vape and smoke detection. The Canāree devices plug directly into wireless access points offering a low cost, easy to install AQM as a Service solution for Businesses.

Key Differentiators

- Next generation Intelligent Particle Sensors (IPS) which use a break-through approach for detecting & measuring the quantity & size of particles in air
- IPS are software-defined to detect a wide-range of particle sizes, allowing for a single sensor to be used for a wide range of applications
- Canaree IoT devices (PM and PRO) deliver a complete Air Quality Monitoring Service that can accurately report and classify sources of PM which negatively impact people's health

Key Achievements

- PSC-1 and IPS have been certified by KETI & are in production
- Evaluation Kits for IPS and Canāree PM available
- Piera is a member of the Edge-AI & Vision Alliance

Key People

- **CEO – Aaron Soh**
- CFO – James Pekarsky
- COO – Vin Ratford
- VP Sales – Howard Pakosh
- Technology Advisor – Andy Soh

HQ & Geographical Presence

HQ: Mississauga, Ontario, Canada

R&D: Korea, CA.

Sectors Served & Key Applications

- Air Quality Monitoring, Indoors and Outdoors
- Air Purifiers, HVAC systems
- Smart Spaces
- Industrial: Workplace monitoring and reporting
- Digital Health

Headline Financials

- $750k raised to date
- Seeking A-round Q1, 2021

Key Investors

Company Overview: SmartGas Mikrosensorik

smartGAS MIKROSENSORIK

www.smartgas.eu

Business Overview

Developer of gas sensors designed to offer gas analysis. The sensors are characterized by low detection limits, low drift, a wide temperature range and low operating and maintenance costs, enabling them to be used for process control and emission measurement.

Reliable, precise and cost-effective Non-Dispersive Infrared (NDIR) sensors for detecting gases

Gases: CO, CO2, C2H4, CH3BR, SF6, SO2, SO2F2, Biogases, Refrigerants

Key Differentiators

- High accuracy and cost-effective
- Sensors do not require wear parts of chemical reactants
- Sensors are environmentally friendly, durable and reliable

Key People

- **CEO – Jorg Ronde**
- Partner – Christian Stein
- VP Bus. Dev. – Volker Huelsekopf

Key Achievements

- JV with long-standing partner SIGAS Measurement Engineering Corp. in China
- New photoacoustic sensor for ethylene – primarily for fruit ripening applications

HQ & Geographical Presence

HQ: Heilbronn, Germany

Additional Offices:

- Also available via a global network of 9 distributors

Sectors Served & Key Applications

- Industrial Process measurement
- Gas safety
- Refrigeration & air-conditioning
- High voltage systems
- Food storage

Headline Financials

- The company raised an undisclosed amount of venture funding in 2007

Key Investors

- Zukunftsfonds Heilbronn (ZFHN)

Company Overview: Sentient Energy

www.sentient-energy.com

Koch Industries acquired Sentient Energy in March 2020, for an undisclosed amount

Business Overview

Developer of a grid analytics system designed to make the grid safe, reliable and solar-ready

Grid analytics system combines intelligent sensors easily deployable on any powerline with powerful management and analytical applications while leading the market with leading utility network providers

Sentient Energy is the premier Intelligent Sensing Platform Provider for power utilities. It combines intelligent sensors easily deployable on any powerline with powerful management and analytics applications enabling utilities to detect faults, preempt problems and deliver dependable power

Key Differentiators

- Powerful platform simplifies management of even the largest deployments
- Flexible deployment and data hosting gets you started quickly with minimal IT investment
- Optimize the flow of fault and other data to SCADA

Key People

- **CEO - James Keener**
- COO – Michael Bauer
- CTO – Konda Ankireddyapalli
- Chief Revenue Officer – Venkat Bahl
- VP, Engineering – Mark Sloan
- VP, Operations – George Asmus

Key Achievements

- 2016 Top 15 Smart Grid Companies to Watch by Smart Grid News
- 2016 Red Herring Top 100 North America Award
- 2016 Rising Star – Company by Platts Global Energy Awards.

HQ & Geographical Presence

HQ: Burlingame, CA, USA

Additional Offices:

- Malaga, Spain
- Frisco, TX, USA

Sectors Served & Key Applications

- Distribution utilities
- Energy Infrastructure
  - Clean Tech
- Electronic Equipment and Instruments

Headline Financials

- $46.9M raised to date
- $15.0M of early-stage VC funding raised in April 2013
- Acquired by Koch in March 2020
- ~90 employees

Key Investors

- Koch

Company Overview: Synaptec

www.synapt.ec

Business Overview

Developer of instrumentation technology designed to reduce downtime and operating costs of electrical networks

The company uses sensors and a network of single optical fiber to measure voltage, current, temperature and vibrations over long distances at multiple locations

Synaptec radically enhances power system protection, monitoring and asset management using innovative light-speed technology easily deployed on existing infrastructure

Key Differentiators

- Passive sensor networks
- Interrogator
- Underlying technology

Key People

- **CEO - Philip Orr**
- Application Director – Campbell Booth
- Research & Development Director – Pawel Niewczas
- Advisory Board Member – Ian Marchant
- Advisory Board Member – John Marsh

Key Achievements

- 2018 AV-Test Award
- 2019 Founder and MD won Entrepreneur of the Year by University of Strathclyde

HQ & Geographical Presence

HQ: Scotland, United Kingdom

Sectors Served & Key Applications

- Electronic Equipment and Instruments
  - Clean Tech
  - TMT
- Other Energy Services
- Electric Utilities

Headline Financials

- $3.8M raised to date
- $3.3M of early-stage VC funding raised in April 2019

Key Investors

- Equity Gap
- Foresight Group
- Scottish Enterprise
- University of Strathclyde Endowment

Company Profiles

Industrial Gateways & Networks

WCP

Company Overview: Antenova

antenova®

www.antenova.com

Business Overview

Provider of antennae hardware and services for wireless products around the world.

RF antenna modules for wireless M2M, IoT and consumer electronic devices

Antennae provide the high efficiency, low power consumption and reliable performance required for wireless M2M, IoT applications

Useful for a wide arrange of networks including– GSM, CDMA, 3G, 4G, LTE, GPS, GLONASS, Beidou, Wi-Fi®, Bluetooth®, ZigBee®, ISM and NB-IoT

Key Differentiators

- Antennas are ideally suited for a broad range of wireless connectivity requirements
- Can provide extremely customized antennae for large scale projects

Key People

- **CEO – Paul Hill**
- Operations and Taiwan Director – Christy Lin
- Finance Director – Fiona Mckinnon
- Non-Executive Director – Aidan Paul

Key Achievements

- Hardware Award 2018 given at Embedded World Convention

HQ & Geographical Presence

HQ: Hatfield, UK

Additional Offices:

- London, UK
- Shanghai, China

Sectors Served & Key Applications

- Electronic Equipment and Instruments
  - Internet of Things
  - Industrials
- Electrical Equipment
  - Mobile

Headline Financials

- $42M raised to date
- $6.1M of Late Round VC funding raised in October 2008
- ≈36 employees

Key Investors

- Added Value Capital Partners
- Cambridge Gateway Fund
- Invesco
- Yasuda Enterprise Development
- Questor

Company Overview: Cradlepoint

www.cradlepoint.com

Ericsson completed the acquisition of Cradlepoint in Nov 2020 for ≈$1.1B

Business Overview

Developer of wireless edge solutions that unlock the power of LTE and 5G cellular networks for organizations' people, places, and things

Focus on the wireless WAN and 5G markets

Provider of cloud-based network products intended to connect people, places, and equipment over wired and wireless broadband connections.

The company's products include network management software and connectivity devices that utilize joint data, cloud, and security with intelligent networking, thereby enabling businesses to create, monitor, manage and maintain their distributed network running on different sources

Maintains 131 partnerships across Asia Pacific region

Key Differentiators

- Technology Alliance Program (TAP)' brings together "curated ecosystem partnerships" for wireless branch, mobile and Internet of Things (IoT) networking.

Key People

- **CEO – George Mulhern**
- COO – Val Heusinkveld
- CPO – Ian Pennell
- CSO – Mark Pugerude
- CMO – Todd Krautkremer

Key Achievements

- June 2012, 1st to launch enterprise-class LTE edge router
- Dec 19, over 20,000 customers and 1 million endpoints under subscription

HQ & Geographical Presence

HQ: Boise, ID, USA

Additional Offices:

- Los Gatos, CA
- Surrey, UK

Sectors Served & Key Applications

- Wireless Communication Equipment
  - Internet of Things
- Telecom Service Provider
  - Software as a Service

Headline Financials

- $170M raised to date
- 10.M of debt funding raised in
- ≈700 employees

Key Investors

- OVP Venture Partners
- Mercato
- Sorenson Capital
- TCV

Company Overview: Ingenu

www.ingenu.com

Business Overview

Provider of machine-exclusive wireless networks designed to offer increased coverage per access point

Machine-exclusive wireless networks focus on machine to machine (M2M) communication by allowing devices to become Internet of Things (IoT) devices

Enables clients to access smart metering, remote monitoring and data gathering

Key Differentiators

- Usage of common 2.4ghz band worldwide means companies can scale many times faster than on any other network
- Bandwidth choice also allows it to work anywhere on the planet, even places that usually lack infrastructure needed
- Only RPMA® provides the kind of connectivity 86% of IoT devices require

Key People

- **CEO & President - Alvaro Gazzolo**
- CTO & Cofounder – Ted Myers
- Director of Deployment – Bill Simpson
- Direct of Hardware Engineering – Denis Espey
- Senior VP Worldwide Sales – Francis Costello

Key Achievements

- Light Reading Leading Lights Award 2016 “Most Innovative IoT/M2M Strategy”
- Owler “Hot in San Diego” Award 2015
- M2M Innovation Product of the Year Award 2014

HQ & Geographical Presence

HQ: San Diego, CA, USA

Additional Offices:

- Scottsdale, AZ, USA

Sectors Served & Key Applications

- Wireless Communication and Equipment
  - Internet of things
  - TMT
- Other Communications and Network
  - Impact Investing

Headline Financials

- $107.5M Raised to date
- $26.4M raised through late-stage VC in April 2017
- $40M of debt funding raised in Feb 2020
- Debt funding raised in April 2020
- ≈30 employees

Key Investors

- Anduin Ventures
- Burch Creative Capital
- Foundation Capital
- Nimes Capital
- The Carbon Venture

Company Overview: Libelium

www.libelium.com

Business Overview

Developer of wireless sensors designed to deliver reliable services via Internet of Things (IoT) and Smart Cities technologies

Waspmote wireless sensor is modular and easy to deploy along with easy integration with third-party cloud systems

Broad product line and catalogue allow for device selection that fits specific needs of client

Intended for use by system integrators, engineering and consultancy companies but has extremely broad applications

Ultimate goal is to deliver reliable smart data services with minimum time to market.

Functioning in over 75 Countries

Key Differentiators

- Modular installation allows for usage in over 12 radically different fields
- Clients are assigned personal engineers to optimize sensors to your usage
- Hibernate mode allows it to conserve battery when not actively in use

Key People

- **CEO & Cofounder- Alicia Asín**
- CTO and Cofounder – David Gascón

Key Achievements

- Juan López de Peñalver Award for innovation and impact awarded by Spanish Royal Academy of Engineering in 2018
- 2nd Place EU Award for Woman Innovators given by the European Commission in 2018

HQ & Geographical Presence

HQ: Zaragoza, Spain

Sectors Served & Key Applications

- Electrical Equipment and Instruments
  - Cleantech
  - Internet of Things
- Other Information Technology
  - Industrials

Headline Financials

- $5.4M Revenue & $824K of EBIT in 2018
- ≈50 employees

Key Investors

- Not Available/Existent

Company Overview: NimbeLink

NimbeLink® Smart. Simple. Cellular.

www.nimbelink.com

Business Overview

NimbeLink is an IoT innovation company focused on creating cellular based products and solutions.

Primary focus is to make connecting to cellular networks easy, significantly reducing costs and time-to-market

Skywire embedded modems are already carrier certified, dramatically reducing design time & costs from your schedule when compared to using a module or chipset

Products include the latest LTE Technologies from LTE-M and NB-IoT to LTE CAT4 and are certified with all the major cellular carriers

NimbeLink Asset Tracking Solution is ideal for tracking remote, non-powered assets

Asset Tracking is highly integrated and utilizes precisely configured devices, network connectivity, and software

Key Differentiators

- Battery life is the longest in the industry
- Pin-compatible, allowing you to incorporate future cellular technologies without board-level changes
- Certified as an “End-Device” so further FCC or carrier certifications usually needed by client are unnecessary

Key Achievements

- NimbeLink Ranked 77 on Inc. 5000 Series: Midwest
- NimbeLink Ranked 269th Fastest Growing Company In North America On Deloitte’s 2019 Technology Fast 500™
- Inc. Magazine Recognizes Minnesota-Based NimbeLink as the 1033 Fastest Growing Privately Company in the U.S.

Key People

- **CEO & Cofounder – Scott Schwalbe**
- Cofounder & CTO – Kurt Larson
- CIO – John Young

HQ & Geographical Presence

HQ: Plymouth MN, USA

Additional Offices:

- Austin, TX, USA
- Des Moines, IA, USA

Sectors Served & Key Applications

- Wireless Communication Equipment
  - Internet of Things
- Electrical Equipment
  - Industrials

Headline Financials

- $4.8M raised to date
- $1.2M early-stage VC raised in October 2017
- Debt raised in April 2020
- ≈30 employees

Key Investors

- First Analysis

Company Overview: Redpine Signals

REDPINE SIGNALS®
DRIVING WIRELESS CONVERGENCE®

www.redpinesignals.com

Business Overview

Developer of communications networking equipment for industrial, commercial, medical and home automation applications

Product line includes internet-of-things (IoT) enabled microcontrollers, embedded connectivity modules, wired and wireless modems and more

Core competencies in mixed-signal and RF integration

Focus on high-quality, diversified markets positioning for sustainable growth

Key Differentiators

- Best emissions, immunity performance standards in the industry
- Typical ATE is about the size of a car while Red Pine Signal's is smaller than a shoe box
- Delivers faster switching times alongside Best-in-class noise immunity
- RF SoCs and modules Robust SW framework simplifies development and connectivity

Key People

- **CEO & Board Member – Venkat Matela**
- Founder – Kalpana Atluri
- VP Worldwide Sales – David Case

Key Achievements

- Most Respected Public Semiconductor Company Awarded by Semiconductor Alliance 2015, 2016, 2017, 2018, 2019

HQ & Geographical Presence

HQ: San Jose, CA, USA

Sectors Served & Key Applications

- Wireless Communications Equipment
  - Internet of Things
  - Manufacturing
  - TMT

Headline Financials

- Wireless solutions driving growth with >65% 2019 IoT revenue and 14% growth in FY19
- 225 employees

Key Investors

- Not Available

Company Overview: Rigado

RIGADO www.rigado.com

Business Overview

Rigado was one of the first to develop large-scale solutions with the Bluetooth Low Energy (BLE) protocol

Created pre-certified BLE modules for IoT designs – helping companies reduce the time, cost and risk of IoT product development

In 2016 Rigado merged with Rivetry, a Portland software company specializing in IoT applications

In 2017, Rigado launched their line of flexible IoT gateways and moved firmly into the fast-growing commercial IoT segment

Use to power applications such as asset tracking, sensing and monitoring, and smart building solutions

Key Differentiators

- Presto is the first plug-and-play IoT Direct Integration using Azure Digital Twins Cloud Backend
- Can run on Standard Bluetooth, Wirepas Mesh devices and Wi-Fi devices (2.4 & 5 Ghz)
- Simple Integration with AWS Greengrass
- OTA Updating Capability

Key Achievements

- 2017 OEN Entrepreneurial Achievement Award
- 2017 Rigado Named IoT Breakthrough Award Winner
- 2017 5 'Cool Vendors' In The Internet Of Things by Gartner

Key People

- **CEO – Sean Riley**
- COO – Greg Rau
- CTO – Justin Rigling
- CMO – Kevin Tate
- CFO – Ryan Brady
- VP of Sales – Russel Corvase

HQ & Geographical Presence

HQ: Portland, OR, USA

Additional Offices:

- London, United Kingdom
- Salem, OR, USA

Sectors Served & Key Applications

- Connectivity products
  - Internet of Things
- Electrical Equipment
  - B2C Electronics

Headline Financials

- $20.3M raised to date
- $15.0M Series VC funding A in June 2018
- Debt funding in April 2020
- 34 employees

Key Investors

- Alliance of Angels
- Big Basin Partners
- FusionX Ventures
- Oregon Venture Fund

Company Overview: Secomea

www.secomea.com

Business Overview

Developer of a line of firewall/VPN and remote device management solutions

Emphasis on making the solutions easy to install, setup and use

Provides industry communication solutions that are optimized to provide effective and secure data communication for a wide range of customers

Clients include parts suppliers, machine builders, system integrators, service providers and end-users,

Creating industrial communication solutions and office network security solutions

Key Differentiators

- SiteManager can monitor control and, if necessary, reprogram the installation for 24/7 power supply
- Builds on IT infrastructure for both service engineers and SiteManagers in form of a 2G/3G/4G module.
- Access by multiple users to multiple services on the same device (http, remote desktop, plc programming, HMI programming, SCADA systems, etc.)

Key Achievements

- Gazelle Award 2017 given by Dagbladet Børsen

Key People

- **CEO – Michael Ferdinandsen**
- CTO – Peter Handson

HQ & Geographical Presence

HQ: Herlev Denmark

Sectors Served & Key Applications

- Network management Software
  - Internet of Things
  - Cybersecurity
- Systems and Information Management

Headline Financials

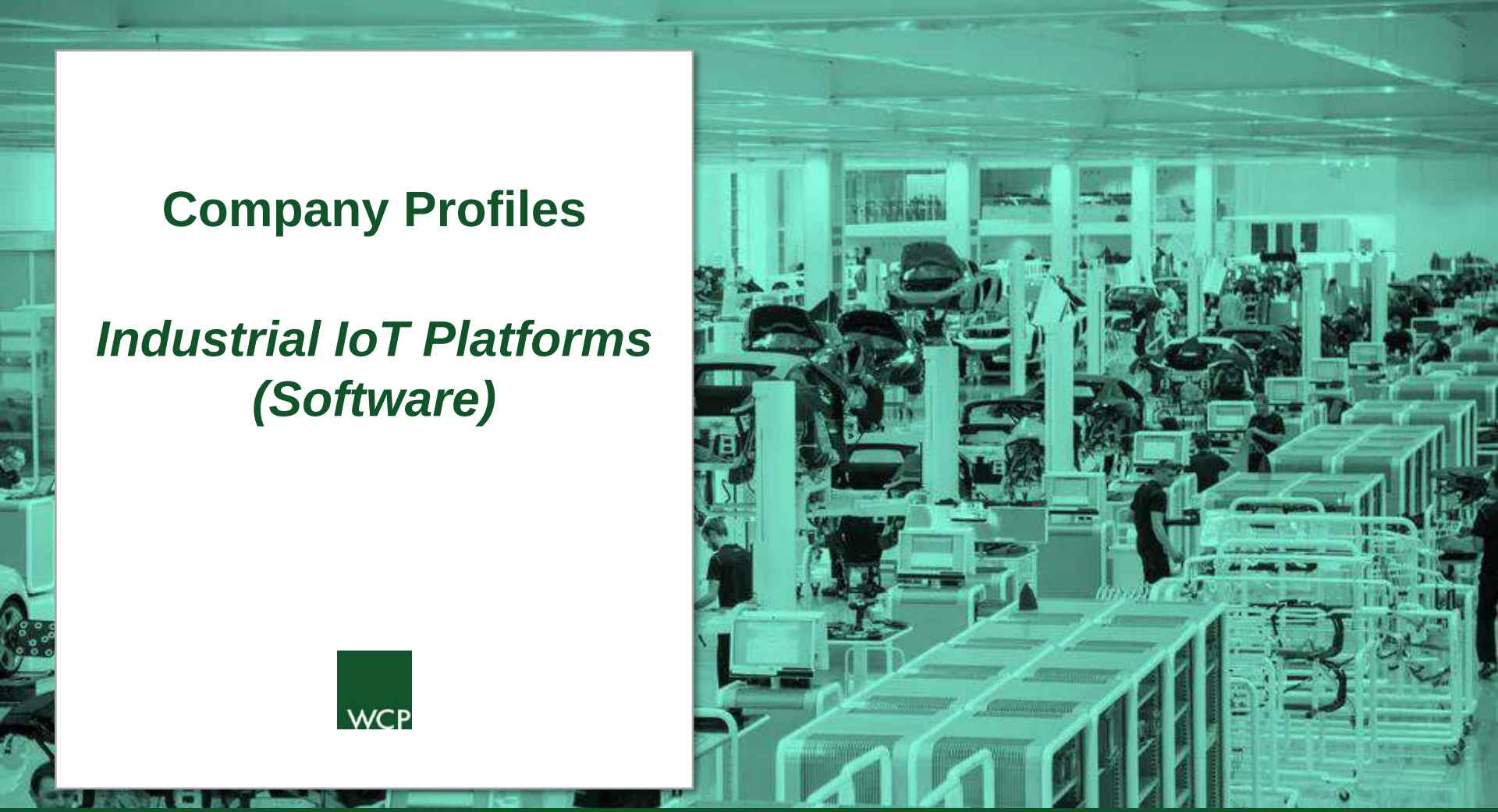
- 35 employees

Key Investors

- Not Available

Company Profiles

Industrial IoT Platforms (Software)



Company Overview: Aeris Communications

aeris

www.aeris.com

Business Overview

Developer of an end-to-end machine-to-machine communication platform designed to improve operational efficiency

An end-to-end and machine-to-machine communication platform offers vehicle crash notifications, burglar alarms and remote healthcare monitoring services

Uses data from thousands of disparate endpoints and devices,

Concurrently maintaining security by core design to identify changes and respond proactively

Key Differentiators

- ConnectionLock capability, which restricts data delivery only to designated IP addresses or endpoints
- DeviceLock restricts devices operate on a single specified IP
- LTE-M and NB-IoT allow for LPWA networking

Key Achievements

- 2020 Top 10 Connected Car Solution Providers by Auto Tech Outlook
- 2018 Frost & Sullivan “IoT Platform Vendor of the Year” – India
- 2018 IoT Global Award for “IoT Platform of the Year, Service.”

Key People

- **CEO – Mark Jones**
- President & Co-Founder – Dr. Rishi Bhatnagar
- CFO & Co-Founder – John Molise
- CTO – Syed Hosain
- CMO & Co-Founder – Raj Kanaya

HQ & Geographical Presence

HQ: San Jose, CA, USA

Additional Offices:

- Chicago IL, USA
- London, United Kingdom

Sectors Served & Key Applications

- Business/Productivity Software
  - Internet of Things
  - Software as a Service
- Communication Software

Headline Financials

- $3787M raised to date
- $1.0M late-stage VC in July 2009
- ≈300 employees

Key Investors

- Cloquet Capital Partners
- I.U.GO ventures
- Orbcomm
- Qualcomm

Company Overview: Altizon

ALTIZON
The Industrial IoT Company

www.altizon.com

Business Overview

Developer of a big data-focused platform designed to enhance digital transformation

Focused on the industrial internet, which offers a scalable platform to manufacturers to build intelligent connected devices and manage them from the cloud

Provides real-time data for organizations to act upon

Machine data is used to drive business decisions with a view to enable digital transformation by accelerating smart manufacturing initiatives, modernizing asset performance management, and adopting new business models for service delivery

Key Differentiators

- Edge computing allows businesses to decide which services to run locally and which ones to send to the cloud, which reduces the final costs
- Data storage and computation is distributed and local which reduces latency
- Filters sensitive information locally and only transmit important data for models

Key Achievements

- 2017 Altizon named in Gartner Competitive Landscape of IoT Platform Vendor Report
- 2015 Altizon Named As Gartner Cool Vendor

Key People

- **CEO - Vinay Nathan**
- COO – Yogesh Kulkarni
- CTO – Ranjit Nair
- Senior Sales Director – Veeresh Dharappanavar

HQ & Geographical Presence

HQ: Maharashtra, India

Additional Offices:

- Scotts Valley, CA, USA

Sectors Served & Key Applications

- Database Software
  - Advanced Manufacturing
  - CloudTech and DevOps
  - Internet of Things

Headline Financials

- $12.1M raised to date
- $7.0M Series A funding raised in April 2019

Key Investors

- Infuse Ventures
- Lumis Partners
- Pi Ventures
- TVS Motor Company
- WiPro Ventures

Company Overview: Greenwave Systems

www.greenwavesystems.com

Business Overview

Provider of an Internet of Things software platform designed to easily and safely connect people to all the things that make lives better

The company's platform enables Internet of Things and machine-to-machine network architects and service providers to monetize their networks

Concurrently addresses security, interoperability, mobility, flexibility and scalability

Overall this allows clients to profitably deploy their own managed services and products to create deeper customer relationships and grow their businesses

Key Differentiators

- Usage does not require owning infrastructure or exposure to the public internet
- WAN agnostic routing uses application-based routing instead of packet-based routing

Key People

- **CEO - Martin Manniche**
- CFO – Peter Christensen
- COO – Christos Lagomichos
- CTO – Siddhartha Dattagupta

Key Achievements

- 2017 INDEX Award by the Index Project
- 2017 Sustainia Award by Connect4Climate
- 2015 Fuller Challenge

HQ & Geographical Presence

HQ: Irvine, CA, USA

Additional Offices:

- Copenhagen, Denmark
- Singapore, Singapore

Sectors Served & Key Applications

- Other commercial Services
  - Internet of Things
  - Software as a Service
- Network management Software
  - TMT

Headline Financials

- $91.8M raised to date
- $60.0M of Series C funding raised in January 2016
- ≈120 employees

Key Investors

- Applied Micro Circuits
- Craton Equity Partners
- EDBI
- E.ON
- The Westly Group

Company Overview: Iotium

IoTium www.iotium.io

Business Overview

Developer of a commercially deployed secure edge-cloud infrastructure intended to accelerate their digital transformation journey

The company's solutions ensure that any machine, using any protocol, can be instantly and securely connected to any application residing in a data center

All can be done through any network infrastructure and operator

Minimizes deployment complexity issues and network security risks

Key Differentiators

- Instantly upgrade security of all legacy communication protocols (BACnet, Modbus, IEC 61850 and OPC)
- security including secure managed OS eliminates need for usernames/passwords
- OT-Net significantly reduces deployment security and connectivity costs

Key Achievements

- 2019 Top 25 IoT Startups to Watch by Forbes
- 2018 Gartner Cool Vendor
- 2016 Best Technologies Innovation Intelligent Buildings, Intelligent Buildings Conference (IBCON)

Key People

- **CEO - Ron Victor**
- CTO – Srivatsan Rajagopal
- Chief Architect – Dhruva Narasimhan
- CPO – Dhawal Tyag
- CFO – Dorea El-Sayed

HQ & Geographical Presence

HQ: Santa Clara, CA

Additional Offices:

- Guindy, India
- Melbourne, Australia

Sectors Served & Key Applications

- Systems and Information management
  - Cybersecurity
- Other Business/Productivity Software
  - Internet of Things

Headline Financials

- $22M raised to date
- $13.6M of Series B funding raised in September 2018
- ≈50 employees

Key Investors

- Hack VC
- GE Ventures
- Juniper Ventures
- JC2 Ventures
- March Capital Partners

Company Overview: Kneron

www.kneron.com

Business Overview

Provider of an application-specific integrated circuit and software intended to offer artificial intelligence-based tools

Application integrated circuit offers real-time recognition, inference, and analysis services with no cloud connection,

Capable of performing quick implementation of different artificial intelligence applications for clients

Key Differentiators

- (RANN) technology adapt in real-time to audio, 2D, and 3D image recognition applications
- Compatible with various 3rd party 3D sensor technologies such as Structured Light, dual-cameras, ToF camera

Key People

- **CEO Co-Founder– Albert Liu**
- COO – Roger Liu
- Software Engineer, Co-Founder – Kangli Hao
- CCO– Adrian Ong
- Co-Founder – Frank Chang

Key Achievements

- 2020 Artificial Intelligence Excellence Award given by the Business Intelligence Group
- 2019 Best Aggregate Performance Rating by the U.S. National Institute of Standards and Technology (NIST)

HQ & Geographical Presence

HQ: San Diego, CA, USA

Additional Offices:

- Shenzhen, China
- Taipei, Taiwan

Sectors Served & Key Applications

- Application Specific Semiconductors
  - AI and Machine Learning
  - Big Data
- Business/Productivity Software
  - Mobility Tech

Headline Financials

- $73M Raised to date
- $40M of Series A2 funding raised in January 2020
- Debt funding raise in May 2020
- ≈70 employees

Key Investors

- Alibaba Entrepreneurs Fund
- CDIB Capital Group
- Cyzone (Global vision of business)
- Horizons Ventures
- Qualcomm

Company Overview: Kore Wireless Group

www.korewireless.com

Business Overview

Provider of global machine-to-machine (M2M) network connectivity services

Focus on corporations and application service providers (ASPs) serving a diversified set of industries that require machine-to-machine applications

Overall enables the customers to activate, deactivate, locate, troubleshoot and manage all of their devices around the globe

Key Differentiators

- Can increase security via endpoints with automated responses to threats
- Offers cellular options including 3G and 4G LTE – including low-power LTE technologies such as Cat-M and NB-IoT

Key People

- **CEO & President - Romil Bahl**
- CFO and Executive VP – Puneet Pamnani
- CHRO & Executive VP – Louise Winstone
- VP Finance – Daniel To
- CTO & Executive VP– Tushar Sachdev

Key Achievements

- 2020 “M2M Innovative Solution of the Year” award given at IoT Breakthrough Awards

HQ & Geographical Presence

HQ: Alpharetta, GA, USA

Additional Offices:

- Naples, FL ,USA
- Salem, NH, USA

Sectors Served & Key Applications

- Wireless Service Providers
  - Internet of Things
  - Mobile
  - TMT

Headline Financials

- $371M raised to date
- $67M of debt funding raised in Apr 2016
- $269M of debt funding raised in Dec 2018
- $35M of debt funding raised in Nov 2019
- 23 employees

Key Investors

- ABRY

Company Overview: Litmus Automation

LITMUS **litmus.io**

Business Overview

Litmus has developed a modern edge platform for industry to enable Industrial IoT, Industry 4.0 and Digital Transformation

The company's software provides instant data connectivity, ready-to-use analytics, and the ability to orchestrate applications at scale

Litmus liberates the data locked in any industrial system to transform critical edge data into actionable intelligence that can power predictive maintenance, machine learning, and AI

Customers include 10+ Fortune 500 manufacturing companies, while partners like Siemens, HPE, Intel and SNC Lavalin expand the Company's path to market

Key Differentiators

- More built-in drivers (250+) than any other product on the market, so customers can connect to any industrial asset or system, collect data, and deliver it to enterprise and cloud systems
- Litmus Edge Manager provides visibility, access and control over the orchestration of all edge devices, applications and deployments at scale

Key Achievements

- Named in Top 5 Vendors in Gartner 2020 Magic Quadrant for Industrial IoT Platforms
- Vatsal Shah named 2020 IoT CEO of the Year by the IoT Breakthrough Awards

Key People

- **CEO & Co-Founder - Vatsal Shah**
- CFO & Co-Founder– Sacha Sawaya
- COO & Co-Founder– John Younes
- Advisor – Ken Forster, Momenta Partners
- Advisor – Ravi Belani, Alchemist Accelerator

HQ & Geographical Presence

HQ: San Jose, CA , USA

Additional Offices:

- Tokyo, Japan
- Toronto, Ontario, Canada

Sectors Served & Key Applications

- Business/Productivity Software
  - Advanced Manufacturing and Industrial
  - Internet of Things
- Other Commercial Services
  - Software as a Service

Headline Financials

- $12.3M raised to date
- $7.0M of Series A funding raised in Sept 2019
- ~55 employees

Key Investors

- Mitsubishi
- Momenta Ventures
- Plug and Play Ventures
- Alchemist Accelerator

Company Overview: Losant

LOSANT

www.losant.com

Business Overview

Developer of an enterprise internet of things platform designed to help teams quickly and securely build complex real-time data

Uses open communication standards

Provides connectivity from one to millions of devices and provides powerful data collection, aggregation and visualization

Enables clients to empower seamless integration of connected and non-connected devices

Key Differentiators

- TLS provides encryption protocols and fully revocable access keys for each device
- Losant's drag-and-drop Visual Workflow Engine. Seamlessly adapt to ever-changing business requirements.
- Allows creation of multi-tenant applications for client's customers

Key People

- **CEO & Co-Founder - Charlie Key**
- CTO & Co-Founder – Michael Kuehl
- CPO & Co-Founder– Brandon Cannaday
- VP Enterprise Solutions – Adam Daniel

Key Achievements

- 2020 Best IoT Use Case award by IoT Evolution
- 2020 Best Smart City Award by IoT Evolution
- 2020 Enterprise IoT Platform Innovation Award
- 2019 The 10 Coolest IoT Startups, CRN Magazine

HQ & Geographical Presence

HQ: Cincinnati, OH, USA

Sectors Served & Key Applications

- Database Software
- Business/Productivity Software
  - Internet of Things
  - TMT
- Application Software

Headline Financials

- $13.8M raised to date
- $9.5M of debt funding raised in April 2020
- $4.3M of early-stage VC funding raised in June 2020
- ≈40 employees

Key Investors

- CincyTech
- Revolution
- Service Provider Capital
- TechNexus Venture Collaborative
- Vine Street Ventures

Company Overview: Nebbiolo Technologies

nebbiolotechnologies
fog computing pioneers

www.nebbiolo.tech

Business Overview

Developer of a cloud-based fog computing platform designed to insert a new functionality layer in the industrial automation pyramid between production machines and process control

Real-time awareness virtualization, distributed analytics, centralized fleet management, secure application hosting, multi-tenancy and role-based access control

Single point of data aggregation from production floor to cloud applications, enables IoT platforms to perform powerful convergence, unification and standardization at the networking, security, data, computing and control levels

Key Differentiators

- fogNODE Scalable, Flexible Computing Nodes (Built by 3rd Parties)
- fogOSand fogSM help to preserve the software investments and virtualized infrastructure
- Automating application software deployment to save on operating costs

Key People

- **CEO - Chandra Joshi**
- CFO – Diego Marchioni
- President & CTO – Flavio Bonomi

Key Achievements

- 2019 Frost & Sullivan Customer Value Leadership Award
- 2017 Gartner's Cool Vendor in IoT Edge Computing
- 2018 First place at the Fog Tank Competition during the Fog World Congress

HQ & Geographical Presence

HQ: Milpitas CA, USA

Sectors Served & Key Applications

- Business/Productivity Software
  - Advanced Manufacturing
  - Internet of Things
- Media and Information Services (B2B)

Headline Financials

- $20.3M raised to date
- $11M of Series B funding raised in Nov 2019
- Debt funding raised in April 2020
- ≈10 employees

Key Investors

- Gatewest Capital
- GiTV
- KUKA Systems Group
- TTTech

Company Overview: Neuron Soundware

NEURON SOUNDWARE **www.neuronsw.com**

Business Overview

Developer of an audio diagnostic technology intended to gain an understanding of audio signals of machines

The company's powerful AI recognizes sound patterns in real-time and provides unparalleled insight into how mechanical systems operate, so potential failures can be detected early.

Neuron soundware use edge computing and industrial IoT nBox, which allows offline data processing and a safe, fast and efficient analysis of large data sets. It is certified for industrial environments including ATEX.

The technology works in a wide variety of use cases, accelerates asset digitization and improves quality control. The nShield analytical platform leverages AI, which automatically checks the collected audio data of machines against the extensive database of warning sounds.

As a result, maintenance and diagnostics teams get notified about discovered abnormal behavior and possible future malfunctions on the component level.

Fast implementation in hours thanks to plug-and-play technology and wireless broadband communication.

Key Differentiators

- Allows OEE improvement by combine machines' static information like name, location, model, or last service date with real-time status and failure prediction alerts to improve
- Improves maintenance program with easy-to-access insights into machines' maintenance logs, alerts, and real-time failure warnings
- AI models use machine learning to constantly improve failure detection accuracy.

Key Achievements

- 2016: Startup & Idea of the Year in Czech Republic
- 2017: #3 FORBES TheNextBigThing
- 2018: “Cool Vendor in Acoustic Technologies for Predictive Maintenance” by Gartner
- 2018: SAP Industry 4.0 Accelerator in Berlin
- 2019: Best IoT Startup in Central Europe
- 2020 nBox IoT edge computing device was certified for ATEX environments.

Key People

- **CEO - Pavel Konecny**
- VP of Sales - Lukáš Loun
- CTO – Petr Černohorský
- CFO – Tomáš Vacek

HQ & Geographical Presence

HQ: Prague, Czech Republic

Customer base: Europe, Asia, Middle East.

Partners & Resellers: 25+International companies

Sectors Served & Key Applications

- Business/Productivity Software
  - AI and Machine Learning
  - AudioTech

Headline Financials

- $3.78 M raised to date
- $2.61 M raised via Series A in June 2019
- 30+ employees

Key Investors

- Inven Capital
- Lead Ventures
- J&T Ventures
- StartupYard

PubNub www.pubnub.com

Business Overview

Developer of a software designed to build and scale applications by providing the cloud infrastructure

Builds applications such as live dashboards and data streams, real-time collaboration, second screen synchronization and machine-to-machine signaling for any device

Enables customers to connect, scale and manage real time applications and IoT devices

Key Differentiators

- TLS and AES256 encryption, plus support for BYOE (bring-your-own-encryption) models.
- PubNub Functions support flexible authorization schemes via any OAuth and LDAP model.

Key People

- **CEO & Co-Founder - Todd Greene**
- CFO & Co-Founder – Dr. Russ Lemelin
- CTO & Co-Founder– Stephen Blum

Key Achievements

- 2019 Best Overall Bot Solution in the AI Breakthrough Awards
- 2019 DEVIES Award from DeveloperWeek for Best Innovation in API Infrastructure
- 2019 Hacker Noon Noonie Award for Most Valuable Chatbot Platform

HQ & Geographical Presence

HQ: San Francisco, CA , USA

Sectors Served & Key Applications

- Software Development Applications
  - CloudTech and DevOps
  - Internet of Things
  - Mobile

Headline Financials

- $69M raised to date
- $23M of late-stage VC funding raised in April 2019
- ≈60 employees

Key Investors

- Cisco Investments
- Ericsson Ventures
- Hewlett Packard Pathfinder
- Streamlined Ventures

Company Overview: QiO

www.qio.io

Business Overview

Developer of digital software products designed to help global industrials focused on open-source technologies

The company's products can be delivered on any cloud platform and focus on big data, internet of things and mobility, thereby making it viable to deliver analytics, collaboration and anticipation in vertical, horizontal and temporal scales

Enabling clients to extend the useful life of their assets and improve operational integrity, liberating the industrial engineer

Key Differentiators

- IT/OT Enablement Dynamic integration to any Industrial data source, any enterprise IT data sources and any sensors.
- Support for any cloud provider: AWS, Microsoft Azure, Google and combination of deployments: public, private and edge

Key People

- **CEO - Baz Khuti**
- CMO – Bob Francis
- Commercial Director – Gary Chandler
- Operations Director – Martin Eves
- Advisor & Chairman – Rick Haythornthwaite
- Finance Director – Ed Birch

Key Achievements

- 2019 FROST & SULLIVAN'S Customer Value Leadership Award Advanced Analytics for Manufacturing Europe

HQ & Geographical Presence

HQ: Farnborough, United Kingdom

Additional Offices:

- Plantation, FL, USA
- Potsdam, Germany

Sectors Served & Key Applications

- Business/Productivity Software
  - Advanced Manufacturing
  - Big Data
- Application and Database Software

Headline Financials

- $7M raised to date
- $6.2M of Angel funding raised in February 2018
- ≈40 employees

Key Investors

- Angel Investors (Unnamed)

Company Overview: Tulip (Digital Manufacturing Platform)

TULIP

www.tulip.co

Business Overview

Developer of a manufacturing application development platform intended to develop IoT-enabled digital tools and applications

Digitizes paper-based processes

Integrates industrial IoT technologies with legacy factory machines, captures and analyzes real-time production floor data

Enables manufacturers to increase their yield, improve quality and accelerate their process improvements by creating no-code applications in a hassle-free manner

Key Differentiators

- Serialize work with barcodes or RFID integrations to dynamically control your process.
- Real-time insights optimize even low volume production runs and connect your existing systems
- Extend ERP, MES, and other databases

Key People

- **CEO, Co-Founder & Board Member – Dr. Natan Linder**
- Co-Founder & Board Member – Dr. Rony Kubat

Key Achievements

- 2018 IDC Innovator
- 2018 Frost and Sullivan Entrepreneurial Company of the Year
- 2017 Gartner Cool Vendor

HQ & Geographical Presence

HQ: Somerville, MA, USA

Additional Offices:

- London, United Kingdom

Sectors Served & Key Applications

- Automation/Workflow Software
- Software Development Applications
  - Advanced Manufacturing
- Business/Productivity Software

Headline Financials

- $52.7M raised to date
- $21.1M of Series B1 funding raised in Sept 2019
- ≈110 employees

Key Investors

- Acequia Capital
- DMG Mori Aktiengesellschaft
- E14 Fund Management
- New Enterprise Associates

Volterra www.volterra.io

Business Overview

Developer of an edge computing platform designed to solve problems that require low-latency computing

The company's platform helps to deploy, connect, secure and operate applications and data across multi-cloud and edge sites

Enables businesses to manage applications in hybrid environments

Key Differentiators

- Single device for policy, lifecycle management, and end-to-end observability
- Self-service with separation of duties allows developers, DevOps, NetOps, and SecOps to openly collaborate
- Workloads can be hosted and delivered from distributed network, increasing app performance

Key Achievements

- 2020 Best Practices Award Frost and Sullivan
- 2020 Best of Show Grand Prize Award for Cloud Service at Interop Tokyo
- 2020 The 10 Hottest DevOps Startups given by CRN

Key People

- **CEO & Co-Founder - Ankur Singla**
- COO – Daniel Hua
- CTO & Co-Founder – Harshad Nakil
- CMO – Mark Weiner
- VP of Products & Solutions – Marco Rodrigues

HQ & Geographical Presence

HQ: Santa Clara, CA, USA

Additional Offices:

- London, United Kingdom
- Madrid, Spain

Sectors Served & Key Applications

- Business/Productivity Software
  - Software as a Service

Headline Financials

- $50M raised to date
- $25M of Series B funding raised n November 2019
- ≈100 employees

Key Investors

- ITOCHU Technology Ventures
- Mayfield Fund
- M12
- Silicon Valley Bank

Company Overview: Zededa

www.zededa.com

Business Overview

Provider of a cloud-native edge virtualization software platform intended to monitor, visualize and secure real-time edge applications

The company's platform uses Edge Virtualization X (EVx) engine

Enables organizations to get complete control of edge data and avoid vendor lock-in regardless of the apps and clouds they choose to implement

The company intends to use recent funding to scale infrastructure, increasing R&D, and expanding sales, marketing, and customer success programs

Key Differentiators

- Run legacy apps in virtual machines
- Edge computing engine with 100% open APIs No lock in
- IoT gateways, embedded PCs and ruggedized servers based on x86 (e.g. Intel) and Arm CPUs
- Support for co-processing (e.g. GPU, FPGA)

Key Achievements

- 2019 Cool Vendor in Edge Computing by Garmin

Key People

- **CEO - Said Ouissal**
- CMO – Joel Vincent
- VP of Sales & Business Development –Magnus Almquist
- VP of Engineering and Operation –Vijay Tapaskar
- VP of Product & Strategy – Roman Shaposhnik

HQ & Geographical Presence

HQ: Santa Clara, CA, USA

Additional Offices:

- Bangalore, India

Sectors Served & Key Applications

- Automation/Workflow Software
  - SaaS
  - TMT
- Business Productivity Software
- Database Software

Headline Financials

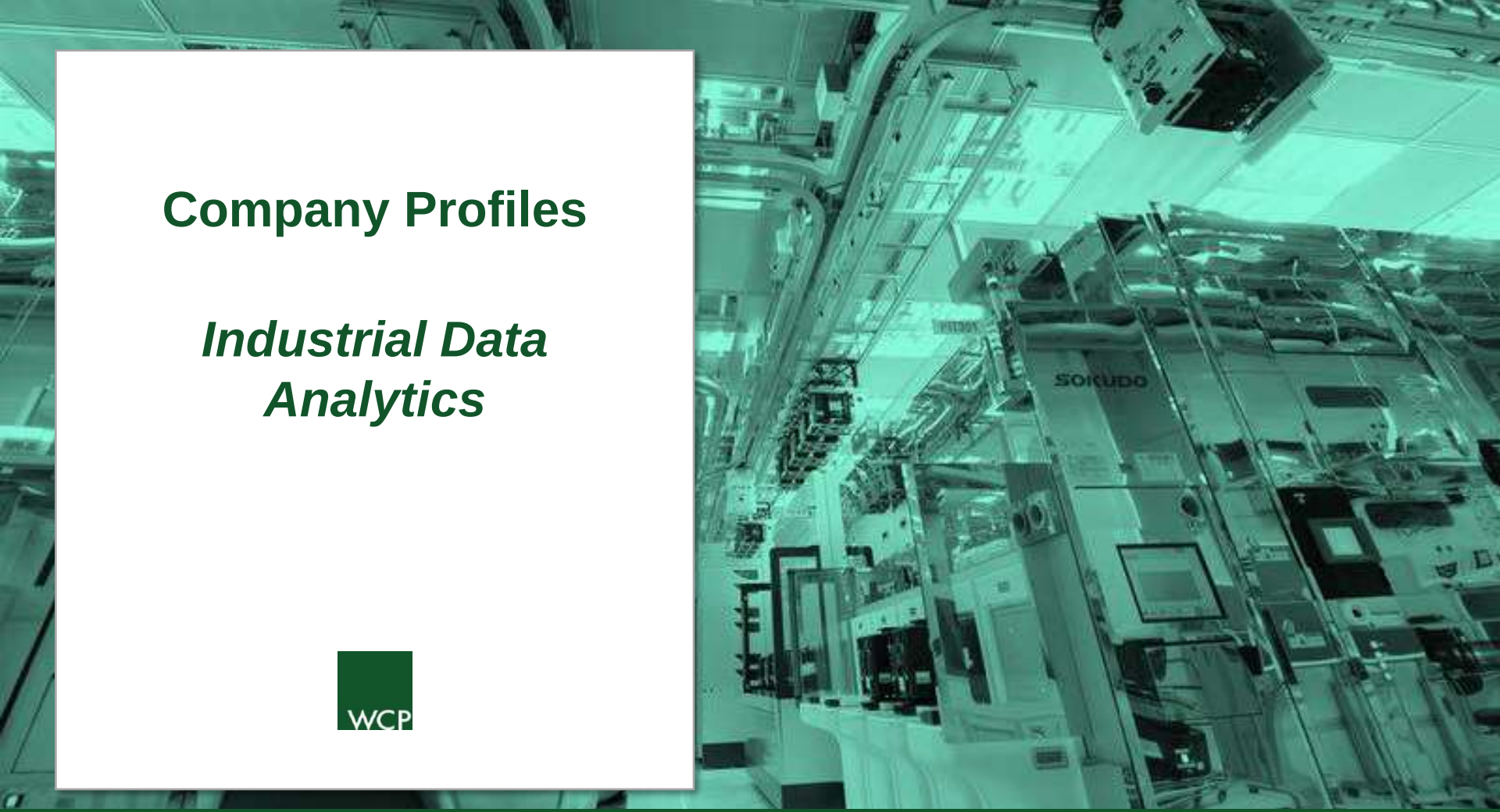
- $16M raised to date
- $16M of Series A funding raised in February 2019

Key Investors

- Almaz Capital
- Barton Capital
- Energize Ventures
- Lux Capital Management
- Wild West Capital

Company Profiles

Industrial Data Analytics



Company Overview: App Orchid

apporchid **www.apporchid.com**

Business Overview

Developer of a software development application designed to revolutionize the way enterprises approach digital transformation

The company's application uses artificial intelligence, machine learning, and natural language processing to extract and blend structured data from the Internet of Things

Optimize usage of operational databases with unstructured data and tribal knowledge

Enables organizations to focus on important business functions

Key Differentiators

- Does not require user to integrate various tools or cleanse historical data to prime for AI usage
- AI Platform-as-a-Service model requires no replacement of systems, no coding and no training

Key People

- **CEO - Krishna Kumar**
- CTO – Yuvaraj Mani
- CTO– Ravi Bommakanti
- CMO – Amrita Joshi
- CRO – Timothy Noe

Key Achievements

- 2020 No.12 on the Inc. 5000 Series: California
- 2019 ranks #14 in Deloitte's Technology Fast 500™
- 2019 App Orchid is recognized by CIO Applications Magazine as Top 25 Artificial Intelligence Providers

HQ & Geographical Presence

HQ: San Ramon, CA, USA

Additional Offices:

- Hyderabad, India
- Redwood City, CA

Sectors Served & Key Applications

- Business/Productivity Software
  - Artificial Intelligence and Machine Learning
  - Big Data
- Software Development Applications
  - Internet of Things
  - Software as a Service

Headline Financials

- $6.04 raised to date
- $2.0M of Seed funding raised in October 2017
- $2.5M of later-stage VC funding raised in Nov 2020
- ≈90 employees

Key Investors

- Moneta Ventures

Company Overview: Arundo Analytics

ARUNDO **www.arundo.com**

Business Overview

Developer of a cloud-based software intended for the deployment and management of enterprise-scale industrial data science

Software connects live data to machine learning models and model outputs to business decisions

This information stream create opportunity for companies in heavy industries to quickly integrate machine learning into operations in areas such as critical equipment reliability and improved asset performance

Key Differentiators

- Integrates and co-exists seamlessly with leading providers of sensors (e.g., SICK), onboard computing hardware (e.g., Dell and HP) and ship services (e.g., DNV Veracity)
- Learning across all assets, refine and deploy your analytics instantaneously via Fleet Learning system

Key People

- **CEO - Tor Ramsøy**
- COO – Stuart Morstead
- General Manager, Americas – Amitav Misra
- Solutions Director – Jeffrey Jensen Ph.D

Key Achievements

- 2018 Gartner Cool Vendor Award
- 2017 Arundo Analytics Named to MIT STEX25
- 2016 Selected for Plug and Play Program

HQ & Geographical Presence

HQ: Houston, TX, USA

Additional Offices:

- Oslo, Norway
- Palo Alto, CA, USA

Sectors Served & Key Applications

- Business/Productivity Software
  - Advanced Manufacturing
  - AI and Machine Learning
  - Big Data
  - IoT
  - Oil and Gas

Headline Financials

- $35.1M raised to date
- $28M of Series A funding raised in Jan 2018
- ≈70 employees

Key Investors

- Arctic Fund Management
- Canica
- Horizon Ventures
- Plug and Play Tech Center
- Sundt

Company Overview: Augury

www.augury.com

Business Overview

Augury combines artificial intelligence and the Internet of Things to make machines more reliable, reduce their environmental impact, and enhance human productivity

Augury's Machine Health solutions combine advanced sensors with powerful AI capabilities and collaboration tools to help teams understand when machines are at risk and how to fix them long before those risks can threaten production or productivity

Powerful platform for managing asset health and performance across the enterprise portfolio of assets.

End-to-end machine health solution that combines sensing, AI-based diagnostics, applications and collaboration delivered as a service.

Key Differentiators

- Fully prescriptive AI machine health insights with over 99% accuracy are guaranteed by insurance in partnership with MunichRe.
- Fast time to value with consistent ROI of over 3x for industrial customers.
- Consistent user engagement >90% across plant & corporate maintenance, reliability &operations.
- Development of advanced use cases for reliability and production process optimization.

Key People

- **CEO - Saar Yoskovitz**
- CTO – Gal Shaul
- CRO - Brian Fitzgerald
- VP of Strategy - Artem Kroupenev
- VP of Business Development - Chris Dobbrow
- VP of Services - Nelson Parente

Key Achievements

- 2019 Frost and Sullivan Best Practices Award
- North American AI-Based Machine Health Solutions for the Process Product Leadership Award
- Forbes Top 25 Machine Learning Companies to Watch in 2021
- Key OEM global partnership with Grundfos
- Strategic partnership with Carrier

HQ & Geographical Presence

HQ: New York, NY, USA

Additional Offices:

- Haifa, Israel

Sectors Served & Key Applications

Sectors Served: Industrial, Manufacturing, Utilities

Key Applications: Internet of Things, AI / ML/Industrial Analytics, SaaS

Headline Financials

- $106M raised to date
- $33.M of Series C funding raised in December 2019
- $55M of Series D funding raised in October 2020
- 150+ employees

Key Investors

- Insight Partners
- Eclipse Ventures
- Munich RE Ventures
- First Round
- Qualcomm Ventures
- Qumra Capital

Company Overview: BigML

www.bigml.com

Business Overview

Comprehensive enterprise Machine Learning software platform that encompasses proven supervised and unsupervised learning techniques offered on top of an auto-deployable and auto-scalable architecture.

Speeds up the time to market for predictive smart applications at a fraction of the cost of traditional Data Science teams.

The BigML platform is commercialized through a set of industry specific solutions as well as private deployment licenses of the core platform. BigML's pre-built solutions are utilized in IIoT industry domains such as manufacturing and automotive for a multitude of use cases.

Supports both on-premises and cloud deployments.

Key Differentiators

- Built-in AutoML capability (OptiML) and Domain Specific scripting Language (WhizzML) enhance workflow automation.
- All models built on the platform are exportable for efficient edge deployment. BigML's NODE-RED integration also facilitates no-code IoT workflows
- Visualizations and prediction explanation features make models interpretable.

Key People

- **CEO - Francisco Martin Ph.D**
- CTO – José Ortega Ph.D
- Chief Science Officer – Thomas Dietterich Ph.D
- Controller – Toni Blasco
- Chief Infrastructure Officer – Poul Petersen Ph.D

Key Achievements

- Pioneered ML-as-a-Service model in 2011
- 140,000+ users, hundreds of millions of models built
- 720+ universities & education institutions utilize the platform.
- 6 patents granted to date.
- Top 20 ML blog as ranked by Feedspot

HQ & Geographical Presence

HQ: Corvalis, OR, USA

Additional Offices:

- Valencia, Spain

Sectors Served & Key Applications

- **Manufacturing & Automotive**: Predictive Maintenance, Quality Control
- **Transportation**: Image Analysis, Dynamic Pricing
- **Financial Services**: Card Fraud Detection
- **Government and DoD**: Threat Detection
- **Pharmaceuticals**: Clinical Trial Analysis

Headline Financials

- 10.8M raised to date
- 2.2M of Series B funding raised in May 2019
- Series B+ stage & breakeven expectation for 2021
- Debt funding raised in April 2020
- ≈50 employees

Key Investors

- Privately Funded
- SAIC Capital

Company Overview: C3

C3.ai

www.c3.ai

Launch of IPO announced on 30th Nov 2020

Business Overview

Provider of a PaaS enterprise software intended to rapidly deploy big data, AI and IoT applications

Cloud-based software uses machine learning to expedite the integration and analysis of disparate enterprise data into a unified cloud-based data image

Provides predictive maintenance, fraud detection, energy management and sensor network health pre-built SaaS applications

Allows users to connect to enterprise data stores, prepare data without writing code, visualize data at any step in the workflow, analyze data using a ML or AI pipeline, operationalize insights using cloud-scale

Key Differentiators

- C3 AI Suite supports the value chain in any industry with prebuilt, configurable, high-value AI applications

Key People

- **CEO - Thomas Siebel**
- Chief Revenue Officer – Mikael Hagstroem
- CFO – Marc Levine
- CTO – Edward Abbo
- CMO – Bruce Cleveland
- Chief Product Officer – Houman Behzadi

Key Achievements

- Disruptor 50 – CNBC – 2020
- Forbes Cloud 100 – Forbes – 2019
- Best Big Data Product or Technology: Internet of Things – Datanami – 2018

HQ & Geographical Presence

HQ: Redwood City, CA, USA

Additional Offices:

- Paris, France
- Rome, Italy
- Sydney, Australia

Sectors Served & Key Applications

- CRM
- Energy Management
- Predictive Maintenance
- Inventory Optimization
- Fraud Detection
- Platform & Multi-cloud services

Headline Financials

- ≈$500M raised to date
- $50.0M of Series H funding raised in September 2019
- Announced launch of IPO on 30 Nov 2020
- $150M raised via PIPE in Nov 2020
- ~550 employees

Key Investors

- BlackRock
- Shell Ventures
- Breyer Capital
- TPG Growth
- Sutter Hill Ventures
- InterWest Partners
- Koch Industries
- Microsoft

Company Overview: Crosser Technologies

www.crosser.io

Business Overview

Developer of streaming analytics and integration software for any edge, on-premise or cloud architecture

Fog computing software provides real-time analytics and decision-making capabilities similar to IoT sensors and devices

Multi-tenant SaaS service hosted by crosser but also exists in an on-premise version that clients can run as their own private cloud, inside their firewall

Streaming Analytics and Integration software for any Edge, On-premise or Cloud

Enables real-time processing of streaming or batch data for Industrial IoT, Data Transformation, Analytics, Automation and Integration

Key Differentiators

- The software is ideally suited for Enterprise customers of various industries and applications, including Industry 4.0, Condition Monitoring, Predictive Maintenance, and next generation Hybrid Integration
- Combination of Crosser Cloud, multi-tenant SaaS service, and Crosser Node, real-time engine that clients can install where they need it

Key Achievements

- Sweden's 10 hottest IoT startups - 2018

Key People

- **Co-Founder & CEO - Martin Thunman**
- CTO – Göran Appelquist
- Co-Founder & CMO – Johan Jonzon
- Co-Founder & Head of Research - Uffe Björklund

HQ & Geographical Presence

HQ: Stockholm, Sweden

Additional Offices:

- Sundsvall, Sweden

Sectors Served & Key Applications

- Connected assets, machines, and equipment
  - Predictive Maintenance
  - Remote Condition Monitoring
  - AI Framework Evaluation
  - Integration and offloading legacy ERP systems
  - Image recognition AI

Headline Financials

- $5.0M raised to date
- $3.4M of Series A funding raised in April 2019

Key Investors

- Industrifonden
- Almi Invest
- Bizmaker
- Industrifonden
- Spintop Ventures
- Norrlandsfonden

CURIOUS AI **www.thecuriousaicompany.com**

Business Overview

Developer of process prediction, optimization and control tools designed to unlock new business opportunities for the organization

Give industrial processes operators a better understanding of their system, enabling businesses to boost their productivity

Immediate savings over existing IT systems and processes. And the new intelligence unlocks completely new business opportunities clients

Key Differentiators

- Best known for our extensive work on semi-supervised machine learning, including the seminal paper on Ladder neural networks
- Specialized in perception systems (machine attention, segmentation, and perceptual grouping)
- Forerunner in the field of autonomy via research in e.g. model-based reinforcement learning and model-predictive control

Key People

- **CEO - Harri Valpola**
- COO – Risto Bruun
- CTO – Antti Rasmus
- Managing Director, UK – David Pool
- Senior Scientist – Mathias Berglund

Key Achievements

HQ & Geographical Presence

HQ: Helsinki, Finland

Sectors Served & Key Applications

- Processes operators
  - Industrial optimization and control
  - Autonomous operation
  - Logistic optimization

Headline Financials

- $5.4M raised to date
- $4.4M of seed funding raised in September 2017
- ~20 employees

Key Investors

- Data Collective
- Tekes
- Balderton Capital
- Lifeline Ventures
- The Invus Group
- Westcott

Company Overview: Dashboard (IoT)

DASHBOARD®

www.dashboard.net

Business Overview

A specialist in industrial digitalization solutions, Dashboard is the developer of the IPMS (Intelligent Pipeline Management System) a turnkey pipeline infrastructure monitoring solution.

Provides end-to-end continuous real-time monitoring of industrial processes and infrastructure incorporating predictive analytics.

Monitors critical process variables for early detection of out-of-step or abnormal process conditions.

Industrial process/infrastructure monitoring, capitalizing on the IoT (Internet of Things) revolution.

Harnessing innovations in electronics manufacturing, communications, AI and enterprise cloud technologies, continuous real-time monitoring and predictive analysis are enabled.

Facilitating change and empowering customers seeking to increase efficiency and gain competitive advantage

Key Differentiators

- Assembled a formidable array of engineering, technical, analytic and design talent.
- Technology partnerships with companies (both large and small). Including global engineering partnership with multinational.
- Specialist knowledge of cyber security, role-based user authentication, advanced data structures, AI, human machine interface design (including geospatial) & high-performance cloud architecture

Key Achievements

- Entrepreneurial Company of the Year 2019 (Infrastructure Monitoring and Analytics)
- National Finalists - Collaborate to Innovate awards - Engineer magazine
- WindTwin – R&D Program of the Year 2018

Key People

- **Chairman – Andrew Garner**
- **CEO – Piers Corfield**
- CCO/Legal Counsel – Tom Dimitroff
- Rob Clegg – Managing Director
- Dave Nicholson – COO
- Malcolm Strang - NED

HQ & Geographical Presence

HQ: Exeter, England, United Kingdom

Additional Offices:

- London, England, United Kingdom
- Calgary, Alberta, Canada

Sectors Served & Key Applications

- Condition Based Maintenance
- Infrastructure
- Energy, Mining, Utilities
- Oil, Gas & Petrochemical
  - Intelligent Pipeline Solutions
  - Dashboard Cloud

Headline Financials

- $6.9M total funding raised to date
- $4.1M of Angel funding raised to date
- ~27 employees

Key Investors

- European Union
- InnovateUK
- HNW industry investors (private)

Company Overview: Dataiku

www.dataiku.com

Business Overview

Developer of a centralized collaborative data science platform designed to explore, prototype, build and deliver own data products efficiently

Cloud-based platform uses an end-to-end advanced analytics tool that combines data science and machine learning technologies with collaborative features

Bring data analysts, engineers, and scientists together. Enable self-service analytics and operationalize machine learning

Profile the data visually at every step of the analysis. Prepare, enrich, blend, and clean data using 80+ built-in functions.

Leverage Machine Learning technologies in a visual UI. Build & optimize models in Python or R and integrate any external ML library through code APIs.

Bundle whole workflow as a single deployable package for real-time predictions with REST API Monitor

Key Differentiators

- Dataiku DSS provides collaborative data science software platform for teams of data scientists, data analysts, and engineers to explore, prototype, build, and deliver their own data products more efficiently.
- Clients can use notebooks (Python, R, Spark, Scala, Hive, etc.) or a customizable drag-and-drop visual interface at any step of the predictive dataflow prototyping process

Key Achievements

- 2020 Gartner - Magic Quadrant for Data Science and Machine-Learning Platforms
- 2019 Forbes Cloud 100

Key People

- **CEO - Florian Douetteau**
- CTO – Clement Stenac
- CMO – Carole Offredo
- Chief Customer Officer – Kurt Muehmel
- Chief Product Officer – Thomas Cabrol
- Chief People Officer – Joy Sybesma

HQ & Geographical Presence

HQ: New York, NY, USA

Additional Offices:

- Los Angeles, CA, USA
- Washington, DC, USC
- London, England, UK
- Singapore, Singapore

Sectors Served & Key Applications

- Aerospace & Defense
- Banking & Financial Services
- Healthcare
- Logistics & Supply Chain
- Manufacturing
- Marketing & Advertising
- Media & Entertainment
- Pharmaceuticals
- Public Sector & Nonprofits
- Retail & CPG
- Telecommunications
- Transportation

Headline Financials

- $247M raised to date
- $101M of Series C funding raised in November 2018
- $100M of Series D funding raised in August 2020
- ~450 employees

Key Investors

- CapitalG
- Dawn Capital
- Agoranov
- Battery Ventures
- FirstMark Capital
- Alven Capital Partners
- ICONIQ Capital
- Stripes

Company Overview: Datameer

Datameer www.datameer.com

Business Overview

Provider of a software platform designed to make big data analytics easy for everyone

Platform acts as a self-service analytics application that offers data integration, point-and-click analytics and drag and drop visualizations to provide actionable business intelligence

Agile platform covers the entire data lifecycle, including ingestion, preparation, exploration and consumption. This enables analysts to create and manage their own analytic data pipelines to drive faster, trusted data-driven insights anywhere

Makes it easy to ingest and integrate data with more than 70 sources and formats: structured, semi-structured and unstructured

Visual Explorer is the world's first solution to deliver truly interactive data exploration at scale. Its unique, schema-less architecture enables unconstrained exploration

Key Differentiators

- Leverage compute power on-premise or in the cloud (unique native-on-Hadoop architecture)
- Datameer processes data natively in Hadoop cluster so that clients can scale out on large data sets.
- Enables dynamic elasticity with an architecture that separates storage from compute.

Key Achievements

- 2017 National Champions For Germany – European Business Awards

Key People

- **CEO - Christian Rodatus**
- CFO – George Shahid
- CMO – Steve Dille
- Senior Vice President – Ani Sanyal
- Vice President, Engineering – Matt McManus
- Vice President of Innovation – Frank Henze

HQ & Geographical Presence

HQ: San Francisco, CA, USA

Additional Offices:

- New York, NY, USA
- Kemperplatz, Berlin, Germany

Sectors Served & Key Applications

- Financial Services
- Retail
- Telecom & Media
- Healthcare
  - Fraud and Compliance
  - Operational Analytics
  - Customer Analytics

Headline Financials

- $140M raised to date
- $40M of Series E funding raised in Aug 2015
- $15M of Series E funding raised in April 2017
- $40M of later stage VC funding raised in Oct 2019
- ~180 employees

Key Investors

- Kleiner Perkins
- Top Tier Capital Partners
- Citi Ventures
- Accel
- Redpoint Ventures
- Workday
- ST Telemedia
- Next World Capital

Company Overview: Element Analytics

element **www.elementanalytics.com**

Business Overview

Provider of Element Unify, Cloud software that aligns Industrial IT & OT (operations) data on a single data management solution

Enables IT & OT to collaborate and build a single, federated, enterprise-wide and contextualized source of metadata. This allows users to establish their own single version of the truth.

Out of the Box Connectors/No-Code Data Pipelines enable easy metadata ingestion from IT & OT systems, spreadsheets and P&ID systems. Data Contextualization engine allows data blending, enabling users to compose the right data model for their analytics needs.

Rigorous Governance facilitates the management of data models, semantics and lineage. Secure, Scalable, Event-Driven Architecture and robust security management tools ensure data safety and availability. Rich Knowledge Graph of all federated IT/OT metadata enables greater flexibility, scalability and speed.

Available for AWS and Azure, easily and quickly integrating into all existing technology.

Key Differentiators

- Easily connects to modern data architectures, supporting improved analytical workloads.
- Integrates into existing systems, creating a unified environment
- Enterprise scalability across all production sites and systems for flexible analysis and AI/ML
- Low code/no code data engineering + rigorous governance.

Key Achievements

- 2020 Global Cleantech 100 company
- 2020 CRT Ten Coolest IoT Startups of 2020
- 2018 Gartner Cool Vendor in IoT Analytics
- 2017 IDC Innovator Analytical Applications for Manufacturing
- JMP Efficient 50 (3x)

Key People

- **CEO - Andy Bane**
- EVP, Sales & Marketing – Stephen Walsh
- SVP, Customer Success – Steve Beamer
- Sr. Director, Product Mgmt – Care Rivers - Uy
- Vice President of Engineering – Sean McCormick

HQ & Geographical Presence

HQ: San Francisco, CA, USA

Sectors Served & Key Applications

- Power & Utilities
- Oil & Gas
- Chemicals
- Manufacturing
- Pulp & Paper

Headline Financials

- $40M raised to date
- $18M of Series 2 funding raised in June 2020
- ~30 employees

Key Investors

- Activate Capital Partners
- Forté Ventures
- ABB Technology Ventures
- Ajax Strategies
- Blue Bear Capital
- GE Ventures
- SE Ventures
- Evonik Ventures
- Kerogen Digital
- Kleiner Perkins

Company Overview: Elmodis

ELMODIS **www.elmodis.com**

Business Overview

Provider of machine diagnostics and monitoring system designed to detect industrial based machinery malfunctions

Integrated hardware and software which is directly connect to electric motors powering industrial machines

Elmodis' system enables machine manufacturers to reduce the costs of guarantee repairs and improve their products.

End users, on the other hand, have access to significant information regarding the machine operation and possible occurrence of any failures. This enables prevention of unscheduled outages, reduction of machine operating costs and, consequently, increases the availability of the entire machine stock.

Elmodis Smart Pumps Solution is a unique, dedicated end-to-end system for pump manufacturers, using IIoT technology and machine learning to predict and prevent failures

Key Differentiators

- Not only scalable, but also fully universal - it can be implemented in any number and in any type of electric drive machine
- Comprehensive solution - dedicated hardware collects data, processes it (edge computing), sends it to the cloud computing, where the final processing and sharing of data in the form of online view and reports takes place

Key Achievements

- 2018 Finalist for Best IoT startup in Central European Startup Awards

Key People

- **CEO - Artur Hanc**
- CTO – Marcin Święch

HQ & Geographical Presence

HQ: Kraków, Poland

Sectors Served & Key Applications

- OEMS
  - Condition monitoring and diagnostics for pumps
  - Operational parameters
  - Maintenance / service
  - Defects detection

Headline Financials

- $5.2M raised to date
- $4.9M of Series A funding raised in April 2017
- ~15 employees

Key Investors

- Intel Capital
- Innovation Nest
- SET Ventures
- Pilot Maker Electro ScaleUp

Company Overview: Falkonry

falkonry **www.falkonry.com**

Business Overview

Predictive operational excellence for manufacturing and defense organizations

Falkonry enables predictive operational excellence at scale by detecting and predicting events before they impact operations. By applying AI on real-time operational data from plant and field systems, Falkonry solutions deliver significant improvement in production uptime, reliability, quality and yield without requiring data scientists or data engineers

Falkonry has defined the Operational AI category and provides verticalized AI for industrial operations in the form of early warning alerts, failure mode identification, root cause explanation, novel condition discovery, and event horizon estimation. These solutions are used by operational teams -- plant managers, process or maintenance engineers, reliability experts, line operators, mission managers -- to power their digital transformation & create strategic advantage

Key Differentiators

- **Comprehensive condition discovery**: Strong in analyzing complex systems and process segments across multivariate data - providing detection, prediction and explanation capabilities
- **Event horizon estimation**: Ability to not only predict failures but also provide an estimate of time to failure, dynamically and system-wide
- **Streamlined UI**: Real-time visibility & automation puts operational teams in control

Key People

- **Founder CEO - Nikunj Mehta**
- CTO – Dan Kearns
- SVP Enterprise - Crick Waters
- VP Government - Ian Hersey

Key Achievements

- 2019 and 2020 CB Insights AI 100
- 2020 AFRL and AFWERX awards
- 2018 Gartner Cool Vendor
- 2017 IDC Innovator

HQ & Geographical Presence

HQ: Sunnyvale, CA, USA

Additional Offices:

- Seoul, South Korea
- Mumbai, India

Sectors Served & Key Applications

- Defense & Intelligence
- Pharmaceuticals
- Oil, Gas & Chemicals
- Metals Mining
- Automotive
- Energy
  - Solutions for predictive production operations
  - Cloud system for building predictive operations systems
  - Data monitoring and machine learning

Headline Financials

- $14M raised to date
- Series A funded
- ~50 employees

Key Investors

- Zetta Venture Partner
- Polaris Partner
- Presidio Ventures
- Basis Set Ventures
- Fortive
- Hypertherm
- Next47

Company Overview: Fero Labs

www.ferolabs.com

Business Overview

Provider of an automated machine learning platform intended to offer industrial data analytics for factories

The company's automated platform uses artificial intelligence for data analysis to predict the quality of materials used for production and to also predict machine failure and downtime

Offers actionable machine learning solutions designed for industrial use cases

Solutions are KPI driven and machine learning technology is transparent and safe, making it easy to know when to trust your data and when to trust your expertise.

Key Differentiators

- Actionable Machine Learning
- Transparent Insights - Fero delivers clarity with white box machine learning that shows exactly how each input affects the KPI clients care about
- Safe Decision Making - Fero provides confidence intervals with every prediction

Key People

- **CEO - Berk Birand**
- Chief Scientist – Alp Kucukelbir
- Head of Sales – Pamir Ozbay

Key Achievements

- 2018 1st Place at Future of Steel conference in Dusseldorf, Germany

HQ & Geographical Presence

HQ: New York, NY, USA

Additional Offices:

- Düsseldorf, Germany

Sectors Served & Key Applications

- KPIs - Production and operation predication
- Maintenance - Streamline machine servicing & Failure prediction
- Sensor Forecasting – Improve energy usage

Headline Financials

- $4.3M raised to date
- Undisclosed amount of later-stage VC funding raised in February 2020
- $2.7M of later-stage VC funding raised in July 2020
- ~10 employees

Key Investors

- Henkel Ventures
- Deutsche Invest Capital
- Eudaimonia Capital
- Bowery Capital
- Fantail Ventures
- Plug and Play Tech Center

- Henkel Ventures
- Deutsche Invest Capital Partners

Company Overview: Flexciton

Flexciton www.flexciton.com

Business Overview

Developer of industrial planning and scheduling software intended to schedule wafers optimally across the whole fab

The company's scheduling software offers engineering optimization and statistical data analytics for implementing industrial automation in the process systems and energy sector

Hybrid-optimization model based on Mixed-integer Linear Programming (MILP) aimed at solving the wafer fab scheduling problem.

Advanced mathematical optimization is used to evaluate millions of schedules at once, selecting the most optimal every 15 minutes and feeding back to a fab dispatch system.

The optimal schedule will direct wafer traffic around dynamic bottlenecks and can streamline production to increase throughput.

Key Differentiators

- Hybrid-optimization model based on Mixed-integer Linear Programming (MILP) aimed at solving the wafer fab scheduling problem

Key People

- **CEO - Jamie Potter**
- CTO – Dionysios Xenos

Key Achievements

- 2019 Top 100 most disruptive companies given at D/SRUPTION by DISRUPT 100
- 2018 Second Innovate UK Grant - 2018

HQ & Geographical Presence

HQ: London, England, United Kingdom

Sectors Served & Key Applications

- Wafer fabrication
  - Batch Sizes
  - Reticle Availability
  - Kanbans
  - Maintenance

Headline Financials

- $4.3M raised to date
- $3.2M of early-Stage VC funding raised in Jan 2019
- ≈30 employees

Key Investors

- Backed VC
- Join Capital
- Entrepreneur First
- Romulus Capital

Company Overview: FogHorn

www.foghorn.io

Business Overview

Developer of an edge intelligence software designed to deliver the power of real-time industrial-grade analytics to resource-constrained edge devices

The company's software augments edge computing with machine learning to bring intelligence to industrial IoT which works with mainstream IoT platforms in the public cloud and can be easily integrated with AWS and Azure

Lightning Solutions allow organizations to deploy edge AI and derive insights to common problems. Use them individually or combine solutions to create a tailored system over time.

Lightning Edge AI embeds AI close to the source of streaming sensor data and delivers low latency for onsite data processing, real-time analytics, ML and AI capabilities

Lightning Mobile empowers real-time analytics, machine learning and AI on mobile, battery-powered devices, without having to rely on cloud

Key Differentiators

- Actionable Insights In Real-Time - powered by a hyper-efficient Complex Event Processor (CEP)
- Reduce Comms, Cloud Processing And Storage Costs By 100-1000x
- Works With All Major Cloud Providers
- Leverages Existing Small Footprint And Controller Hardware

Key Achievements

- Edge Computing Company of the Year – Compass Intelligence – 2019
- IoT Platforms Leadership Award & Edge Computing Excellence Award - IoT Evolution - 2018

Key People

- **CEO - David King JD**
- CTO – Sastry Malladi
- Chief Revenue Officer – John Neville
- Vice President, Business Development– Kevin Duffy
- Vice President, APAC Operation – Yuta Endo
- Vice President of Finance – Michael Hutchinson

HQ & Geographical Presence

HQ: Sunnyvale, CA, USA

Additional Offices:

- Pune, Maharashtra, India

Sectors Served & Key Applications

- Manufacturing
- Oil & Gas, Mining
- Transportation
- Smart Buildings
- Renewable Energy
- Power & Water
- Smart Cities
- Healthcare
- Retail
- Automotive
  - monitoring and diagnostics, streaming analytics, machine learning, and operations optimization

Headline Financials

- $72.9M raised to date
- $25.0M of Series C funding raised in Feb 2020
- ~90 employees

Key Investors

- Forté Ventures
- Plug and Play Tech Center
- Intel Capital
- Dell Technologies Capital
- EMC Ventures
- Yokogawa Electric

Company Overview: Govini

www.govini.com

Business Overview

Developer of a data science platform designed to deliver decision-grade information

The company's platform uses strategic intelligence with the attributes of machine-scaling, robust database of record, advanced query capabilities driven by AI, powerful analytical framework

Govini is partnering with DoD and other national security departments and agencies to provide unprecedented transparency into government activity and the complex markets in which these organizations operate.

Govini programmatically and algorithmically creates functional views that cut across DoD stovepipes by leveraging advances in machine learning and artificial intelligence

These cross-cutting views are impossible for defense analysts, operators, and decision-makers to see without a data-first approach

Key Differentiators

- Offers the single most comprehensive and curated source-of-truth government-relevant dataset on the market
- Intuitive platform for both technical and non-technical analysts
- Automatically updated analysis as the user interacts with the platform

Key Achievements

- Awarded a 5-year $400M contract in Dec 2019 by the Pentagon, allows offices through-out the DoD to access data and analysis from Govini's dataset

Key People

- **CEO - Tara Murphy**
- CTO– Timothy Richardson
- Chief Creative Officer – Wookie Nam
- CFO – John Redd JD
- VP, Marketing – Owen Munford
- VP, Consumer Success – Olivia Clepper

HQ & Geographical Presence

HQ: Arlington, VA, USA

Additional Offices:

- Pittsburgh, PA, USA
- San Francisco, CA, USA

Sectors Served & Key Applications

- National Security Agencies
  - Activity tracking across mission areas, functional priorities, and components
- Intelligence Community
  - Supply chains and market activity at the global levels
- Civil Government
  - Technology landscape, USG-wide investments, buying power, contracting efficiencies, and mission needs

Headline Financials

- $20M raised to date
- $20M of early-stage VC raised in May 2015
- ~50 employees

Key Investors

- Accel
- Salesforce Ventures
- Ares Capital
- STG Partners

Company Overview: Incorta

incorta. **www.incorta.com**

Business Overview

Developer of a real-time analytics platform designed to aggregate large and complex business data.

Consolidates the most essential data pipeline tools, data science and data enrichment tools, and data analytics tools into a true self-service data experience

Data from a variety of sources including applications, databases, streams, and files are easily brought together, processed, and delivered to any kind of user

The company's platform is powered by a direct data mapping engine that offers unprecedented query performance, eliminates costly join operations altogether and reduces the time required to roll out new analytics applications from months to days

Key Differentiators

- No need for data be reshaped and aggregated to fit an analytical, or dimensional model. Incorta is able to analyze complex, full-fidelity business data in real-time.
- Can be hosted in the cloud or run on-premises - it can work against shared storage, networked storage, cloud storage, or in a hybrid storage model

Key Achievements

- SIIA – Best Business Intelligence - 2020
- SaaS Awards program - Business Intelligence or Analytics category - 2019
- CRN - Coolest Business Analytics Companies - 2019

Key People

- **CEO - Osama Elkady**
- CFO – John Botros
- COO – Ziyad Dahbour
- CTO – Klaus Fabian
- Chief Information Officer – Brian Keare
- Senior Director – Alok Panigrahy

HQ & Geographical Presence

HQ: San Mateo, CA, USA

Additional Offices:

- New York, NY, USA
- Dubai, United Arab Emirates

Sectors Served & Key Applications

- Multiple lines of business (Finance, Operations, Supply Chain, Sales)
  - Accessing, organizing, and presenting data
- Enterprise Applications (Oracle EBS, Oracle ERP Cloud, JD Edwards, NetSuite)
  - Connection to data sources including databases, file systems, application systems, query services, data lakes, and custom sources

Headline Financials

- $72.4M raised to date
- $30M of later-stage funding raised in August 2019
- ~300 employees

Key Investors

- Sorenson Capital
- Kleiner Perkins
- M12
- GV
- Telstra Ventures
- SV Angel

Company Overview: Konux

KONUX **www.konux.com**

Business Overview

Developer of an IoT-based software intended to help industrial companies unlock a new level of asset performance through real-time data fusion and analytics

End-to-end solution which uses IIoT devices and artificial intelligence to improve network availability, extend asset lifetime and reduce costs.

Monitors and analyzes the health of key switch components such as the track bed, and frog, and provides actionable recommendations

The company's software helps in determining a multitude of physical variables which can be integrated in complex systems and eliminate problems of common sensor technologies

Key Differentiators

- Specialized in rail infrastructure

Key Achievements

- CogX Award - Outstanding Innovations in AI: IoT And Sensors - 2018
- World Economic Forum - 30 GLOBAL "TECHNOLOGY PIONEERS" - 2018

Key People

- **CEO – Andreas Kunze**
- CFO – Maximilian Hasler
- COO – Dennis Humhal
- Board Member & Investor – Greg Papadopoulos
- Board Member & Investor – Michael Baum
- Board Member & Investor – Soren Hein

HQ & Geographical Presence

HQ: Munich, Germany

Additional Offices:

- San Francisco, CA, USA

Sectors Served & Key Applications

- Railway Operations Infrastructure Maintenance
  - Operation overview dashboard
  - Forecasting
  - Planning of inspections, maintenance or replacement
  - Maintenance quality check
  - Frog health

Headline Financials

- $51M raised to date
- $22M of Series B funding raised in March 2018
- $11M of Series B funding raised in Dec 2019
- ~90 employees

Key Investors

- Alibaba Group
- Green Bay Ventures
- MIG AG
- New Enterprise Associates
- WestWave Capital
- Founder.org

Company Overview: Lone Star Analysis

www.lone-star.com

Business Overview

Developer of decision analysis and advanced analytics software for transportation and logistics, aerospace and defense, and other industrial markets

The company offers a broad range of solutions including TruNavigator®, AnalyticsOS, TruPredict™, and other related software programs that provide transparent, auditable and explainable solutions

Enables clients to make smarter decisions faster by leveraging data and insights to provide foresight and enhance the decision-making of its customers

Key Differentiators

- Provides services for both operational and financial performance analysis

Key People

- **CEO - Steven Roemerman**
- COO – Matthew Bowers
- CTO – Eric Haney Ph.D
- CFO – Nancy Nelson

Key Achievements

- CIOReview - 20 Most Promising Solution Providers - 2017

HQ & Geographical Presence

HQ: Addison, TX, USA

Sectors Served & Key Applications

- Transportation & Logistics, Aerospace and Defense, Oil & Gas, Public Sector, Industrial
  - Performance Optimization
  - Competitive Differentiation
  - Program & Systems Advisory

Headline Financials

- Undisclosed amount of PE Growth/Expansion funding raised in October 2019
- Debt funding raised in April 2020
- ~80 employees

Key Investors

- HCAP Partners

Company Overview: Maana

MAANA™ **www.maana.io**

Business Overview

Provider of a decision-making platform graph search engine designed to encode the world's industrial expertise and data into new digital knowledge

The Maana Knowledge Platform organizes industrial data and human expertise into digital knowledge to speed better decisions across the full value chain of an Oil and Gas Company (from well to pump.)

It accelerates digitization by enabling companies to rapidly build hundreds of use cases at scale providing an unprecedented opportunity for iterative collaboration and continual intelligence growth in day-to-day operations

Key Differentiators

- The Platform's open architecture ensures companies can leverage existing investment while the intuitive authoring interface speeds app development allowing for fast and frictionless development of models by business experts (not just data scientists.)
- strategic alliances with organizations including Accenture and Microsoft

Key Achievements

- Global Corporate Venturing - Investment of the Year - 2019
- CBInsights – AI100 - 2018
- World Economic Forum – Technology pioneer - 2017

Key People

- **CEO - Babur Ozden**
- Co-CTO – Donald Thompson
- Co-CTO – Allen Jones
- Chief Software Engineer – Rob Povey
- Chief Scientist – Steve Gustafson
- Specialist, Oil and Gas Solutions – Jeff Dalgliesh

HQ & Geographical Presence

HQ: Menlo Park, CA, USA

Additional Offices:

- Bellevue, WA, USA
- England, United Kingdom

Sectors Served & Key Applications

- Industrial manufacturing companies
- Oil and gas companies
  - Risk assessment
  - Well Life cycle optimization
  - Pump failure prediction
  - Demand forecasting for LNG Operations

Headline Financials

- $73.3M raised to date
- $33M of Series C funding raised in Feb 2018
- $6M of later stage funding raised in Nov 2020
- ~60 employees

Key Investors

- Accenture Ventures
- Saudi Aramco Energy Ventures
- Shell Ventures
- GE Ventures
- Chevron Technology Ventures
- Intel Capital

Company Overview: NarrativeWave

narrativewave **www.narrativewave.com**

Business Overview

Developer of a next-generation Software-as-a-Service (SaaS) company designed to provide self-service data analytics software to automate decisions for business users without the need of software developers or data scientists

The company's software enables data-driven decisions, advanced prediction of possible equipment failures, and automated business decisions that improve uptime and profit improvement

Captures critical operational knowledge from clients' experts

Create analytics rapidly with easy-to-use analytic builders

Automated outcomes & insights to prioritize O&M focus

Feedback system optimizes analytics and corrective actions

Key Differentiators

- Provides full transparency into every line of code in the analytics
- Enables seamless creation, deployment, and scalability of analytics without coding experience.
- System built in Python- clients can import libraries, create code and leverage machine learning.
- Provide flexibility on asset and use case focus

Key Achievements

- Finalist for the 2017 High Tech Innovation Awards given by OCTANe

Key People

- **CEO - Benjamin Decio**
- CTO - Romain Wurtz

HQ & Geographical Presence

HQ: Irvine, CA, USA

Additional Offices:

- Scottsdale, AZ, USA

Sectors Served & Key Applications

- Wind, Solar, Oil & Gas, Water, Geothermal, Industrial
  - Predict Failures
  - Detect Underperformance
  - Optimize Systems
  - Automate Decisions
  - Automate Diagnostics

Headline Financials

- $4.9M raised to date
- $1.7M of Seed Round funding raised in August 2017
- Undisclosed amount of Series A funding raised in Sept 2020
- ~20 employees

Key Investors

- Nunatak
- Pensco Trust
- Sheakley Group
- The Dana Group
- Frost Data Capital

Company Overview: Osaro

OSARO **www.osaro.com**

Business Overview

Developer of machine intelligence software designed to specialize in artificial intelligence software for industrial automation

OSARO® builds AI for industrial automation. The software enables industrial robots to perform diverse tasks in a wide range of environments. OSARO is transitioning the automation industry from static robotic systems into dynamic solutions.

The company's mission is to be the premiere builder of AI software for the fast-growing field of industrial automation, and in particular, software to power robots in factories and distribution centers.

OSARO works directly with warehouse technology providers to accelerate systems integration.

Key Differentiators

- Supports a wide range of product types
- Recognizes objects traditional 3D cameras cannot
- Integrates with all major robot manufacturers
- On-site support in Europe, Asia, Australia, and North America
- Items can be aligned and either dropped quickly or placed gently, depending on requirements

Key Achievements

- 2020 AI 100 list given by CB Insights
- 2020 Upstart 100 given by CNBC

Key People

- **CEO - Derik Pridmore**
- CTO – Michael Kahane
- CMO – Tracy Nguyen
- Research Engineer – Chris Vigorito
- Co-Founder & Advisor – Itamar Arel

HQ & Geographical Presence

HQ: San Francisco, CA, USA

Sectors Served & Key Applications

- Industrial scale robotic deployments (ASRS systems, auto manufacturing, food prep, and ecommerce).
  - Piece-Picking Automation for High Velocity Inventories
  - Machine learning vision system

Headline Financials

- $63M raised to date
- $16.0M of early-stage VC funding raised in Oct 2019
- Debt funding raised in April 2020
- ~60 employees

Key Investors

- Founders Fund
- GiTV
- iRobot Ventures
- King River Capital
- Abstract Ventures
- Acorn Pacific Ventures

Company Overview: Osprey Data

OspreyData **www.ospreydata.com**

Business Overview

Developer of a platform designed for predictive insights into the behavior of complex mechanical systems

OspreyData is a proven leader in helping oil & gas upstream firms improve operations and raise profitability by leveraging the digital oilfield

Production Unified Monitoring ingests well data from any source, empowering clients to achieve full-field Well Management in one place without proprietary hardware. Production Unified Monitoring is made of up configurable dashboards, lift-specific visualizations, centralized file storage, and collaboration tools.

Production analytics provides automated well optimization and event diagnostics with leading indicators for major artificial lift types.

Key Differentiators

- Leader in AI-based production Intelligence solutions for Oil & Gas
- Consolidate Multiple Systems into one easy to use dashboard

Key Achievements

- Launched a Digital Field Quick-start program in Oct 2020 that enables producers to go live quickly with digital oilfield solution that lowers lease operating costs

Key People

- **CEO - Ed Cowsar**
- CTO – Ron Frohock
- VP, Engineering – Matt Peebles
- VP, Business Development – Scott Brown
- VP, Operations – Tim Burke
- Chief Data Scientist – Mike Pennell

HQ & Geographical Presence

HQ: San Juan Capistrano, CA, USA

Sectors Served & Key Applications

- Oil & Gas upstream firms
  - Operation analysis and monitoring
  - Event detection and prevention
  - Well Optimization
  - Suboptimal Cause Analysis

Headline Financials

- $28M raised to date
- $16M of Series B funding raised in May 2019
- Debt funding raised in April 2020
- ~20 employees

Key Investors

- Houston Ventures
- Irish Acquisitions
- The Cove Fund
- Hollencrest Capital Management
- Avalon Capital Group
- Frost Data Capital

Company Overview: Prophesee

PROPHESEE
METAVISION FOR MACHINES

www.prophesee.ai

Business Overview

Developer of neuromorphic vision system designed to improve the efficiency and intelligence of video processing

The company's system visually senses and process autonomous vehicles, connected devices, security and surveillance systems, enabling clients to detect and analyze high-speed transient visual events in real-time.

Event-Based Vision systems that gives Metavision to machines, revealing what was previously invisible to them

Key Differentiators

- Capturing hyper fast and fleeting scene dynamics
  - >10 000 fps (equivalent temporal precision)
- Managing extreme lighting conditions
  - >120 dB dynamic range
- Enabling new levels of power efficiency
  - < 10mW

Key People

- **CEO - Luca Verre**
- CTO – Christoph Posch
- Co-Founder & Advisor – Ryad Benosman

Key Achievements

- 2019 10 Hottest Startups from Paris to Watch Out For by Silicon Canals

HQ & Geographical Presence

HQ: Paris, France

Sectors Served & Key Applications

- Automotive, Healthcare, Robotics, Security & Surveillance, Industrial Automation, Instrumentation & Lab, Mobile
  - Depth exploration of Event-Based Vision
  - 3d generation Event-Based Metavision® sensor
  - Non-intrusive, real-time, at-the-edge, monitoring and predictive maintenance

Headline Financials

- $64.8M raised to date
- $27.9M of early-stage VC funding raised in Oct 2019
- ~100 employees

Key Investors

- 360 Capital Partners
- Intel Capital
- Supernova Invest
- European Investment Bank
- CEA Investissement
- iBionext

Company Overview: Rapidminer

rapidminer **www.rapidminer.com**

Business Overview

Provider of an open-source predictive analytics platform intended to turn data into transformative business outcomes

The company's platform unifies data preparation, machine learning, model deployment, enabling businesses to drive revenue, reduce costs and avoid risks easily

RapidMiner brings artificial intelligence to the enterprise through an open and extensible data science platform. Built for analytics teams, RapidMiner unifies the entire data science lifecycle from data prep to machine learning to predictive model deployment

Key Differentiators

- Ingest & transform data from any source
- Integrate with coders' notebooks for seamless narration & deployment of custom ML models
- Jumpstart program to accelerate business case success & certification program to upskill non data scientists

Key Achievements

- Gartner - Magic Quadrant for Data Science and Machine Learning Platforms - 2019
- CogX A.I. Award - Best Innovation in Predictive Analytics - 2017

Key People

- **CEO - Peter Lee**
- CFO – Timothy O'Toole
- Chief Data Scientist – Ingo Mierswa
- Chief Product Manager – Lars Bauerle
- Co-Founder & General Manager – Ralf Klinkenberg
- Executive, Corporate Development – Fred Gedling

HQ & Geographical Presence

HQ: Boston, MA, USA

Additional Offices:

- London, England, United Kingdom
- Dortmund, Germany

Sectors Served & Key Applications

- Media and Information Services (B2B)
- Business/Productivity Software
  - Software as a Service
- Database Software
  - Big Data

Headline Financials

- $58M raised to date
- $10M of debt funding raised in March 2019
- Debt funding raised in April 2020
- $8M of Series D funding raised in Sept 2020
- ~100 employees

Key Investors

- Ascent Venture Partners
- Converge Venture Partners
- Earlybird Venture Capital
- Longworth Venture Partners
- NGP Capital

Company Overview: Seeq

www.seeq.com

Business Overview

Provider of an analytics software designed to accelerate industrial process analytics

The company's analytics software and tools collect time-series data, events and signals, as well as related contextual data, generated by production and manufacturing organizations

Key Differentiators

- Easily integrate data from multiple historians including OSIsoft PI, Honeywell PHD, and GE Proficy, as well as relational data from SQL Server, Oracle, and MySQL
- WITSML Connector Enables Insights from Drilling, Completions, and Intervention Data

Key People

- **CEO - Steven Sliwa**
- CFO – Tammy Martin
- CTO – Brian Parsonnet
- CMO – Michael Risse
- VP, Engineering – Mark Derbecker
- VP, Product and Consumers – Jon Peterson

Key Achievements

- 2020 Control Engineering Engineers' Choice Award in Data Analytics Category
- 2020 10 Coolest Industrial IoT Companies by CRN
- 2019 Product of the Year Gold Award by Plant Engineering

HQ & Geographical Presence

HQ: Seattle, WA, USA

Sectors Served & Key Applications

- Business/Productivity Software
  - Advanced Manufacturing
  - Software as a Service
- Media and Information Services
  - Big Data

Headline Financials

- $87M raised to date
- $24M of Series B2 funding raised in Dec 2019
- $28M of Series B funding raised in Sept 2020
- ~130 employees

Key Investors

- Altira Group
- Chevron Technology Ventures
- Madrona Venture Group
- Next47
- Saudi Aramco Energy Ventures
- Cisco Investments
- Second Avenue Partners

Company Overview: Sight Machine

SIGHT MACHINE
Powering Digital Manufacturing

www.sightmachine.com

Business Overview

Developer of a digital manufacturing platform designed to address critical challenges in quality and productivity throughout the enterprise

The company's platform uses artificial intelligence, machine learning and advanced analytics that allow manufacturers to use all of their data

Analysis uses an automated and systematic data intake process

Enables companies to gain real-time visibility and actionable insights for every part, machine, line and plant throughout a manufacturing enterprise

Key Differentiators

- Automated and systematic data intake process acquires, refines, and contextualizes data, creating a digital twin of each part and process.
- Implements Extract Transform Load layer with self-service data preparation, using Digital Twin Builder
- Completely portable through our REST and SQL-like HTTP APIs

Key Achievements

- 2020 Network World as one of the 10 hottest AI IoT startups
- 2019 Global Cleantech 100 Companies
- 2019 Automation of Everything Award by ABB Technology Ventures

Key People

- **CEO - Jon Sobel JD**
- CTO – Nathan Oostendorp
- Chief Consumer Officer – Mike Arnold
- CMO – Ed Jimenez
- Chief Revenue Officer – Keith Hartley
- Chief AI Officer – Kurt DeMaagd

HQ & Geographical Presence

HQ: San Francisco, CA, USA

Additional Offices:

- Tokyo, Japan
- Livonia, MI, USA

Sectors Served & Key Applications

- Business/Productivity Software
  - Advanced Manufacturing
  - Big Data
- Automation/Workflow Software
  - AI and Machine Learning

Headline Financials

- $85.4M raised to date
- $26M of Series B funding raised in Aug 2018
- $29M of Series C funding raised in June 2019
- Debt funding raised in April 2020
- ~80 employees

Key Investors

- WestRock
- Mitsui & Co.
- Momenta Ventures
- Sony Innovation Fund
- LS Holdings
- Future Energy Ventures
- E.ON
- Musketeer Capital

Company Overview: Sixgill

www.sixgill.com

Business Overview

Developer of a cloud based universal sensor data services platform designed to govern Internet of Everything (IoE) assets

The company's platform is acquiring sensor data from any emitter and provide dynamic sensor data intelligence for appropriate response

Automates the proximity data services necessary to support the complete spectrum of problem-solving packaged and custom mobility applications proliferating across the enterprise

Enabling companies to unify the sensor data management, process automation and analytics for all sensor-related applications.

Key Differentiators

- Series 3.0 makes any kind of streaming data actionable
- Integrity 2.0 provides any organization with a real-world, real-time, blockchain data authenticity guarantor
- IoT and IoE automation processes using a well-understood private blockchain, with the option to add public blockchain immutability

Key Achievements

- 2019 Cool Vendors in Security Operations and Threat Intelligence" report by Gartner
- 2017 Winner of Factory Berlin Start Up Competition
- 2017 Top Ten Most Innovative and Digitally Promising Companies at the Paris Netexplo Forum in Partnership with UNESCO

Key People

- **CEO - Phil Ressler**
- VP, Research & Development– Dominiek Ter Heide
- Senior VP, Product – Elizabeth Shonnard
- VP, Enterprise Sale – Denny Reinert

HQ & Geographical Presence

HQ: Santa Monica, CA, USA

Sectors Served & Key Applications

- Network Management Software
  - IoT
  - Mobile
  - Software as a Service
- General Purpose Semiconductors

Headline Financials

- $29.4M raised to date
- $27.9M of Series B funding raised in Sept 2017
- ~50 employees

Key Investors

- DRW Venture Capital
- Mobile Financial Partners

Company Overview: SparkCognition

sparkcognition™ **www.sparkcognition.com**

Business Overview

Provider of Artificial Intelligence-based machine learning software intended to optimize operations and find new solutions to old problems

The company's machine learning technology analyzes complex data in the fields of defense tech, IIoT and finance and provides insights on the same

Key Differentiators

- DeepArmor intercepts and prevents attacks even when disconnected from the network.
- Advanced machine learning techniques to automate the retrieval of information
- Specific classification of documents, and content analytics for unstructured data

Key People

- **CEO - Amir Husain**
- CFO – Jeffrey Lass
- Chief Science Officer – Sridhar Sudarsan
- Chief Business Officer – Vijay Doradla
- VP, Sales – Curt Richtermeyer
- VP, Engineering – Randy Groves

Key Achievements

- 2019 Best Product for Endpoint Security in its Cyber Defense Global Awards
- 2018 CB Insights AI 100
- 2018 Fortress Cybersecurity Award

HQ & Geographical Presence

HQ: Austin, TX, USA

Additional Offices:

- Dubai, United Arab Emirates
- Rio de Janeiro, Brazil

Sectors Served & Key Applications

- Business/Productivity Software
  - Advanced Manufacturing
  - AI and Machine Learning
- Database Software
  - Big Data
  - TMT

Headline Financials

- $187M raised to date
- $100M of Series C funding raised in October 2019
- ≈230 employees

Key Investors

- Dalus Capital
- Hearst Ventures
- Kerogen Digital Solutions
- March Capital Partners
- Sustainable Technologies Fund

Company Overview: Tachyus

TACHYUS www.tachyus.com

Business Overview

Developer of a production optimization software designed to optimize energy production for the oil and gas industry

Allows reservoir and production engineers to use historical production data to build predictive models of flow in a producing field

Enabling operators to optimize the production parameters in order to maximize economic outcomes (ex. Net-Present-Value or minimize operating costs)

Key Differentiators

- Subsurface Back Allocation continuously calculates layer-level production rates and dynamic injection allocations that match all measured historical injection and production data.
- Uses machine learning to rapidly predict and optimize waterflood response
- pDCA automatically identifies and removes outliers, improving the accuracy of the models, can also correct for BHP variations

Key People

- **CEO - Paul Orland**
- COO – Brandon Simmons
- Chief Scientist – Pallav Sarma
- Senior VP, EMEA – Ian Hunt
- Senior VP, Latin America – Carlos Calad
- Technology Advisor – Francisco LePort

Key Achievements

- 2014 General Industry Service Award, West Coast by Oil and Gas Awards

HQ & Geographical Presence

HQ: Houston, TX, USA

Sectors Served & Key Applications

- Upstream Oil & Gas
- Business/Productivity Software
  - TMT

Headline Financials

- $46M raised to date
- $15M of Series B funding raised in May 2019
- $5.4M of early-stage VC funding raised in June 2019
- ~30 employees

Key Investors

- Cottonwood Venture Partners
- Baruch Future Ventures
- Moxley Holdings
- Nautilus Ventures
- Teamworthy Ventures

Company Overview: Tend (Robots Predictive Analytics)

TEND

www.tend.ai

Business Overview

Developer of a predictive analytics platform intended to facilitate remote maintenance and monitoring for industrial robots

The company's platform monitors robots and sends alerts when maintenance is needed or an alarm is triggered as well as sends weekly reports on cell health and performance.

Key Differentiators

- Monitor an HMI from a mobile device or connect directly to a PLC to investigate a problem as if in person

Key People

- **CEO - James Gentes**
- Co-Founder & Board member – Robert Kieffer

Key Achievements

- 2017 Industrial Robotics Software Company of the Year by Frost and Sullivan

HQ & Geographical Presence

HQ: Bend, OR, USA

Sectors Served & Key Applications

- Electronic Equipment and Instruments
  - Robotics and Drones
  - TMT
- Business/Productivity Software
  - Big Data

Headline Financials

- $3.0M raised to date
- $1.0M of Seed funding raised in January 2019
- Undisclosed amount of Seed round funding raised in June 2019

Key Investors

- Cascade Seed Fund
- Plug and Play Tech Center
- True Ventures

Company Overview: Terra Quantum

www.terraquantum.ch

Business Overview

Developer of geospatial analytics technology.

Analyzes remote sensing data gathered by satellites with artificial intelligence (AI) algorithms,

Enabling corporations and governments to conduct geological surveys and explorations in an effective manner.

Recent funding will be used for technology R&D and marketing.

Key Differentiators

- Quantum Key Distribution (QKD), which offers an information-theoretically secure solution to the key exchange problem
- Capitalize on high level algorithms using public IBM and D-Wave quantum computers
- Utilizes neural network architecture for fast-evolving processes, using laser interferometry for the implementation of learning algorithm

Key People

- **CEO - Markus Pflitsch**
- CTO – Gordey Lesovik
- Chief Legal Officer – Karl Eckstein
- Senior Advisor – Anders Indset

Key Achievements

- Not Available

HQ & Geographical Presence

HQ: Rorschach, Switzerland

Sectors Served & Key Applications

- Environmental Services (B2B)
  - AgTech
  - AI and Machine Learning

Headline Financials

- $9M raised to date
- $7.5M of Series A funding raised in Nov 2020
- ≈40 employees

Key Investors

- Decent Capital
- Orchid Asia Group Management
- Susquehanna Asia Investments

Company Overview: Uptake

UPTAKE **www.uptake.com**

Business Overview

Developer of a predictive analytics platform designed to transform data into measurable business values

Platform collects and interprets sensor data and converts insights into action as well as integrates it directly into the workflow, enabling clients to access actionable insights that make the industry more reliable, productive, safe, and secure

Uptake builds technology that turns mountains of data into meaningful intelligence. This makes hard work easier by equipping people with actionable insights, empowering them solve tough problems and create a world that works for everyone.

Key Differentiators

- Software is easily integrated onto existing operational processes and connected to data sources
- Data inputs from disparate sources are screened and prepped for data science and analytics
- Putting data into a common language enables real-time analysis and rapid iterations to generate insights

Key Achievements

- Forbes Cloud 100 Three years in a row
- 2019, 2018, & 2017 CNBC Disruptor 50 honoree
- Selected as one of the World Economic Forum's Technology Pioneers of 2017

Key People

- **CEO - Bradley Keywell**
- COO – Scott Bolick
- Co-Founder & Board Member – Eric Lefkofsky
- General Council – Andrew Polovin

HQ & Geographical Presence

HQ: Chicago, IL, USA

Sectors Served & Key Applications

- Business and Productivity Software
  - Advanced Manufacturing
  - Artificial Intelligence & Machine Learning
  - Internet of Things
  - Mobility Tech

Headline Financials

- $293M raised to date
- $90M of Series C funding raised in April 2017
- $35M of Series C funding raised in Aug 2017
- $117M of Series D funding raised in Nov 2017
- ~280 employees

Key Investors

- Baillie Gifford
- DNS Capital
- Lightbank
- Plug and Play Tech Center
- Revolution

WCP Silicon Valley - HQ
2650 Birch St, Suite 100
Palo Alto, California 94303

WCP San Diego
7514 Girard, Suite 1
La Jolla, CA 92037

WCP London
Riverbank House
2 Swan Lane
London EC4R 3TT, UK

WCP Zürich
Neunbrunnenstrasse 116e
Zürich, 8050
Switzerland

About Andrew Bright, Managing Director

Andrew brings 25 years of experience in industrial automation, sustainable energy and transport. He spent 12 years as a Group Vice President at ABB where he became an expert in M&A, start-up investing, industrial IoT, strategy development & implementation and digital transformation. Most recently he was Head of Corporate at ABB Power Grids where he played a leading role in the division $11Bn sale to Hitachi.

Prior to ABB, Andrew was a Principal Consultant for 7 years, responsible for deploying high-technology into a broad variety of industries. Andrew has been based in the heart of the Silicon Valley for 3 years, is well connected to the start-up Venture Capital & Accelerator eco-system and is currently mentoring and advising a number of start-ups.

Andrew has an MBA from the University of St Gallen, Switzerland and a Masters in Engineering from the University of Oxford.

You can get in touch with Andrew via andrew.bright@woodsidecap.com

About Woodside Capital Partners

Woodside Capital Partners is the leading corporate finance advisory firm for tech companies in M&A and financings in the $30M-$500M segment. The firm has worked with the best entrepreneurs and investors since 2001, providing ultra-personalized service to select clients. Our team has global vision and reach, and has completed hundreds of successful engagements. We have deep industry knowledge and extensive domain experience in the following sectors: Autonomous Vehicles and ADAS, Computer Vision, Artificial Intelligence, Cloud/Enterprise Software, Cybersecurity, Digital Entertainment & Lifestyle, Health Tech, Internet of Things, Marketing Technology, Networking / Infrastructure, and Robotics. Woodside Capital Partners is a specialist in cross-border transactions, with extensive relationships among venture capitalists, private equity investors, and corporate executives from global 1000 companies.

Questions? Contact Katie Elizabeth, Head of Marketing, Woodside Capital Partners at katie.elizabeth@woodsidecap.com

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Thank You

Woodside Capital Partners is the leading corporate finance advisory firm delivering strategic and financial advice to emerging growth companies in the technology sector. We specialize in M&A, capital raising, private placements and strategic partnering to get results for our clients. We focus on transactions ranging in value from $30M to $500M.