



WHITE
STAR
CAPITAL

The Fourth Industrial Revolution

Through the eyes of an
international investor

H2 2023



Executive Summary

\$3.7tn

Value created by the Fourth Industrial Revolution in 2025, equal to 3% of global GDP

\$120tn

Size of B2B commerce market¹, which is 5x that of B2C, with only a third of its online penetration²

74%

Of the workforce will be under 45 by 2030, with a preference for digital experiences in the workplace and home

25%

Median cost benefit for organisations that implement digital transformation

Source: McKinsey, Activant Research, McKinsey, Forrester

Note: 1) Includes B2B transactions across all sectors globally, 2) B2B has 5.5% online penetration vs 17.9% for B2C

Looking at the Fourth Industrial Revolution from a VC's perspective

The Fourth Industrial Revolution is not just about digitalisation, but also the communication between networks and digital solutions, coupled with intelligent systems that automate and optimise tasks.

The B2B market is large and complex, ripe for disruption that will drive significant cost savings and productivity gains. The pandemic had already accelerated the pace of digitalisation via remote work practices, and now a younger generation with strong preferences for digital solutions in the workplace is driving it further.

The current macro climate, characterised by the increased cost of capital, high inflation levels, and supply chain disruptions, coupled with lower consumer sentiment, is pushing investors and companies alike to focus on profitability, rather than growth at all costs. Technology has always been a fundamental driver of productivity throughout history, and it will continue to play that role, particularly at this critical time.

We are at a pivotal moment where technological innovation is primed to disrupt, setting the stage for all businesses and enterprises to thrive and evolve. Sectors heavily reliant on analog methods will benefit the most and we expect to see promising new technologies emerge to serve these businesses as they evolve.

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Fourth Industrial Revolution – Timeline

The Fourth Industrial Revolution is the culmination of human progress across 300 years of innovation at an accelerating pace

- 1698 – Invention of the first steam engine to raise water from mines by suction produced by condensing steam by Thomas Savory.
- 1760 – Start of the First Industrial Revolution, with the automation of manual labour, transforming the Western economy into a manufacturing-based economy.
- 1834 – Invention of the first battery-powered electric motor by Thomas Davenport of Vermont, initially created to power a small-scale printing press.
- 1870 – Start of the Second Industrial Revolution, characterised by rapid scientific advancement, improved transportation solutions and mass production, including the creation of the internal combustion engine, electricity, and telegraph networks.
- 1876 – Alexander Graham Bell invented the first telephone after receiving a patent for transmitting vocal or other sounds telegraphically by causing electrical undulations.
- 1975 – Beginning of the Third Industrial Revolution, marked by the shift from mechanical to electronic technologies, with the rise of computers and integrated circuit chips to store and process vast amounts of data and information.
- 1977 – Introduction of the first personal computer by John Blankenbaker, the Kenbak-1 with 256 bytes of memory and featuring small and medium scale integrated circuits on a single circuit board.
- 1992 – Creation of the World Wide Web and launch of IBM's first smartphone, the Simon Personal Communicator.
- 2010s – **Fourth Industrial Revolution**, defined by the rapid integration of physical assets and advanced digital technologies such as IoT, generative artificial intelligence, cloud computing, large-scale data analytics, and nanotechnology, creating smart interconnected networks and transforming traditional business models and operations.

The Fourth Industrial Revolution, combined with B2B Vertical SaaS solutions, leverages the accelerating and compounding effect of digitalisation alongside proprietary data and customisation to boost operational efficiency. Digital platforms have reduced transaction and friction costs for individuals and organisations, and driven scalability, giving rise to lean and fast-adapting businesses.

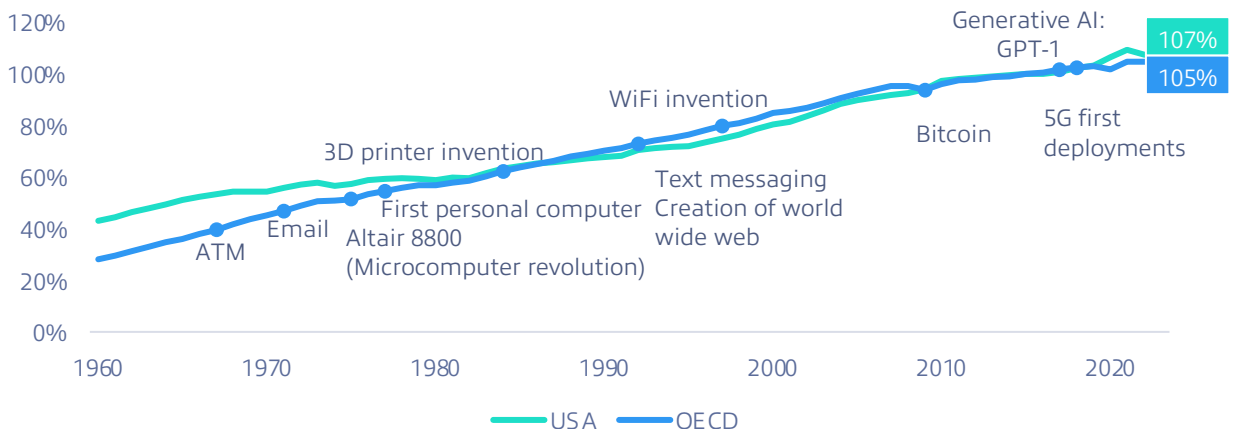
Traditional B2B sectors stand to gain significantly. In 2025, the value created by the Fourth Industrial Revolution is expected to reach \$3.7tn for manufacturers and industrial suppliers alone. Furthermore, an estimated 70% of new value created in the economy over the next decade will come from digitally-enabled platforms. The automation of complex tasks will allow a new era of disruptive innovation.

Technology and automation drive structural transformation, reshaping entire industries

Technological automation has unlocked unprecedented scalability and growth potential for businesses

The progressive integration of technology and automation has transformed industries at an unprecedented rate, boosting productivity, with the OECD Labour Productivity Index rising by 272% and 149% since 1960 respectively for OECD countries and the US. Each industrial revolution has accelerated with every technological leap, improving product quality, services, consistency, and output precision. Technological progress and widespread automation is also reflected economically, as the GDP per person has increased by 57% from 2000 to 2022, assuming constant 2017 purchasing power parity (PPP).

OECD Labour Productivity Index



Source: OECD, WSC Analysis (2023)

These advancements have also led to significant time and cost savings, liberating employees from mundane, manual tasks and allowing them to focus on value-add activities. Simultaneously, globalisation, facilitated by these technologies, has allowed companies to cater to increasing international demand, scaling their operations and market reach globally, thus allowing them to expand exponentially. From 1979 to 2020, net productivity, the measure of output generated by technology after subtracting input costs, rose by 62%. The incremental gains also extend to streamlining operations and reducing costs, ultimately leading to increased profitability.

Supporting trends, such as the rise of artificial intelligence and data analytics, continue to enhance technology and automation capabilities, further revolutionising business models and processes. This transformation has become a cornerstone of the contemporary tech-driven industry, reshaping the way companies operate and compete in an increasingly digital world.

The Fourth Industrial Revolution: a new avenue of growth

Why now?

Geopolitical tensions and higher-than-expected oil prices have strained global supply chains and driven inflation. In response, companies are increasingly focusing on cost management due to their limited ability to pass inflation onto consumers, who are constrained by diminished purchasing power and increasing household debt. Additionally, rising commodity prices, and a tight labour market are compressing margins. This situation is prompting companies to seek innovative ways to boost productivity and efficiency to maintain profitability.

Inflation in supply chain forcing companies to be more efficient

S&P 500 Materials Price Index since 2018

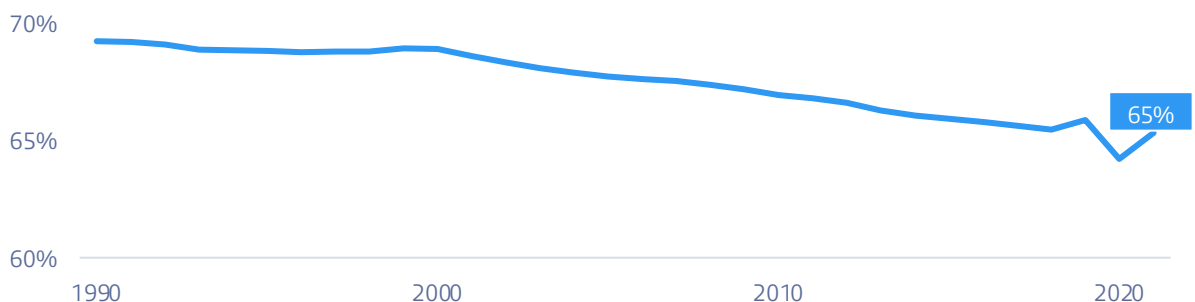


Source: S&P

Most developed countries face a shrinking labour force, driven by declining participation rates, falling birth rates and an increasingly ageing population. The World Economic Forum anticipates a 23% labour market churn in the next five years. Although advancements in productivity, AI, and automation are partly responsible for this shrinkage, they also represent a solution to the problem. These technologies, integral to the Fourth Industrial Revolution, promise to enhance productivity through cost savings, production flexibility, and the customisation of goods and services. However, significant changes are required to realise these benefits.

Shrinking labour force

Decline in the % workforce out of world population aged 25-54 years old



Source: World Bank

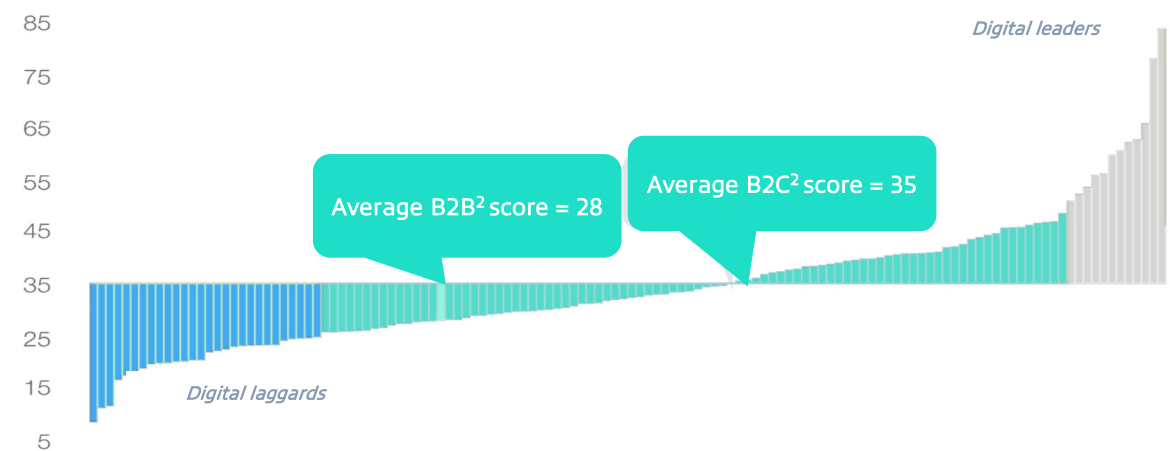
The Fourth Industrial Revolution: a new avenue of growth

Why now?

B2B operations and transactions typically involve many stakeholders and involve high degrees of complexity and the need for customisation. The lack of standardisation across industries and reliance on legacy systems complicate processes. Developments in API-driven architecture facilitate communications across the value chain, enabling decisions and analysing data in real-time.

API architecture enables digitisation of complex legacy on premise software and IT infrastructure systems

B2B lags B2C in digitalisation as showcased by the Digital Quotient score¹

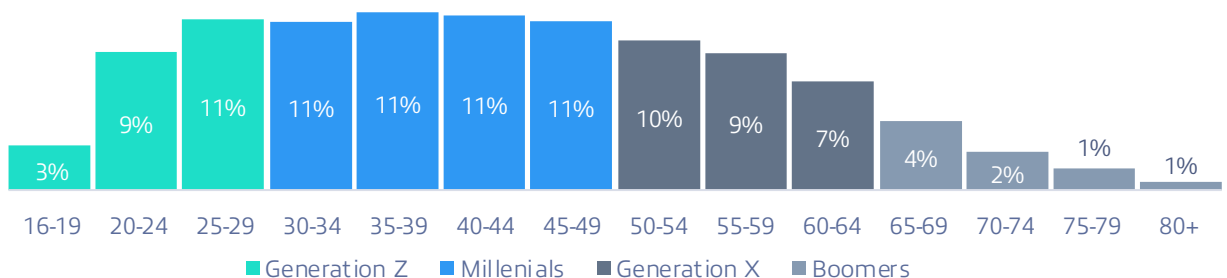


Source: McKinsey

Millennials, or 'Gen Y', are expected to form 40% of the workforce by 2025, closely followed by Gen Z. Both generations are not just highly proficient in navigating digital platforms, but also hold elevated standards concerning their digital interactions, seeking design and user interfaces of similar standards as in their personal lives. This will drive demand for digital solutions in the workplace.

Digital native workforce taking over

Projected US labour force size by age in 2030



Source: US Department of Labour

Source: *The Fourth Industrial Revolution*, Klaus Schwab, McKinsey, and Forbes,

Notes: 1) Average across 4 equally weighted dimensions: culture, strategy, capabilities, and organisation.

2) Sample includes 47 B2B and 128 B2C companies

The Fourth Industrial Revolution: a new avenue of growth

Why now?

Generative Artificial Intelligence (GenAI) is emerging as the key driver of the next productivity wave. GenAI describes algorithms that can be used to create new content, including audio, code, images, text, simulations, and videos. The broad applicability makes it a powerful tool – almost anyone can use them, with little to no formal technical training – allowing for a preternatural ability to have a conversation with a user.

Previous waves of automation technology mainly affected physical work activities. The current version of generative AI is in its early stages of development and adoption. However, its performance is rapidly advancing due to continuous training from human inputs. It is anticipated to significantly impact knowledge work, especially critical thinking and decision-making activities. McKinsey projected that by 2040, generative AI will match the proficiency of the top 25% of people in executing various office tasks.

Generative AI has been evolving at an unprecedented pace

Timeline of major large language model (LLM) developments following ChatGPT's launch in 2022



Our 10-year outlook for the Fourth Industrial Revolution

We believe the following trends will result in a growing number of opportunities within the Fourth Industrial Revolution

Shifting business demand

As customers demand higher quality and faster delivery of products and services, firms are increasingly leaning towards automation, leveraging connected machines, artificial intelligence, and streamlined processes. This technological shift may result in potentially displacing 20% to 40% of current job roles globally over the next 10 years, disproportionately impacting low-tech penetration markets. Against this backdrop, B2B firms acknowledge the importance of tailoring their offerings to specific geographical markets and adopting customer-focused strategies to stay ahead and fulfill the growing expectations of their clientele.

375m

Workers might change job and learn new skills by 2030

55-66%

Of the global middle class will be located in Asia-Pacific

8-9%

Of 2030 labour demand to be in jobs currently non-existent

Supply chain restructuring

In the B2B sector, various stakeholders are integrated into the supply chain. The evolving geopolitical landscape and inflation are steering a strategic reduction of reliance on single-source global supply chains, notably between China and Western countries. This development prompts companies to increasingly embrace localised and regional supply chains, with North American firms nearshoring to Mexico from China. This will attract enhanced investments in certain areas, encouraging broader adoption of digital technologies.

Businesses that adapt to these shifting regional dynamics will gain new market opportunities and solidify their competitive stance.

Efficiency and trend navigation

We are currently witnessing increasingly quicker product and innovation cycles. This shift involves swift development, launch, and reconfiguration of products, leading to reduced investment costs but intensified competition.

Simultaneously, there is an increasing reliance on third-party Software as a Service (SaaS) tools. This shift places greater pressure on businesses to tailor solutions to custom needs, operate at lower cost and to anticipate shifts in demand.

The combination of accelerated innovation cycles and the strategic adoption of adaptive tools defines a landscape rich with opportunities.

Human-centric technology advancements

In the coming decade, we foresee a significant trend in the post-Fourth Industrial Revolution era – an increase in collaboration between humans and machines.

The transition highlights smoother incorporation of human skills into advanced technological systems, placing emphasis on values like humanism, personalisation, and creativity. This deliberate focus is geared towards innovations customized to meet user needs.

The European Commission's "Industry 5.0" initiative highlights the importance of resilience, human-centered approaches, and adaptability as guiding principles. These principles are crucial for startups to thrive in our ever-changing technological landscape.

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The Fourth Industrial Revolution: An Overview



Ecosystem Highlights

\$627bn

Raised by Fourth Industrial Revolution startups in the last 3 years

\$114bn

Raised year-to-date by sector startups in 2023 year-to-date (Jan-Nov)

2,071

Mega rounds in total¹

39%

VC funding over the last 3 years relative to all transactions in the sector

\$13.2bn

In seed funding in the last 3 years

407

VC-backed Fourth Industrial Revolution unicorns²

551

Fourth Industrial Revolution exits in 2022

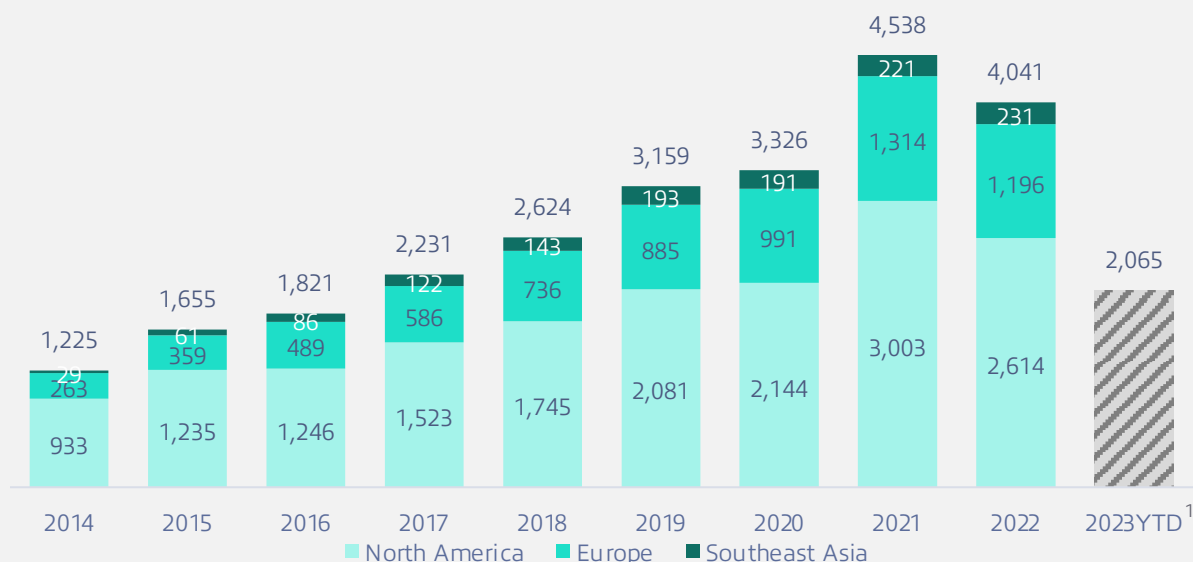
8.0x

Increase in total capital invested from 2014 to 2022

Deal activity has increased significantly over the last decade

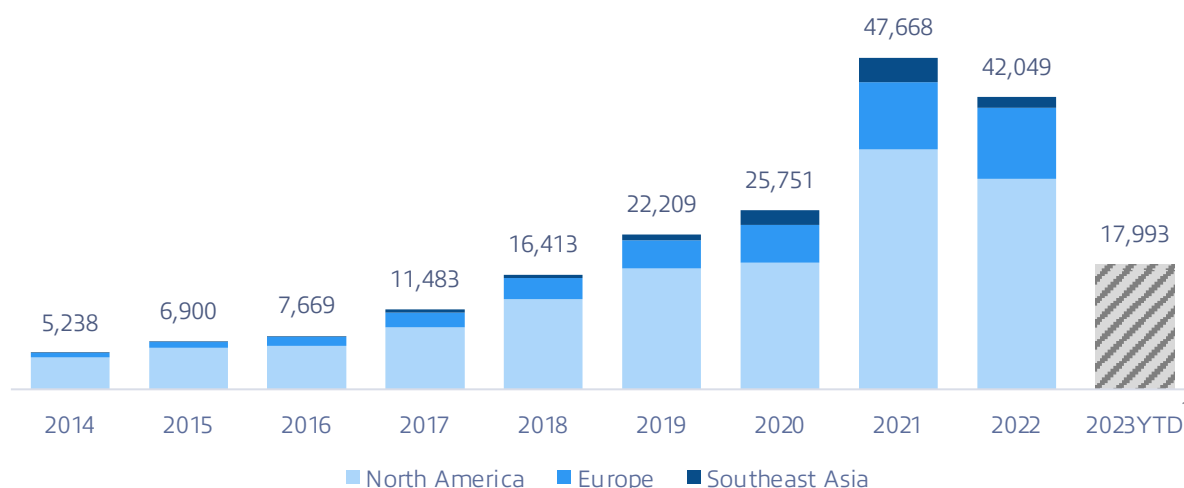
Deal volume increased significantly across all regions, but Europe (4.5x) and Southeast Asia (8.0x) saw more significant increases in deal volume compared to North America (2.8x) from 2014 to 2022

Fourth Industrial Revolution Deal Count across Seed, Series A and Series B stages by Region



Total capital invested was 8.0x higher in 2022 compared to 2014

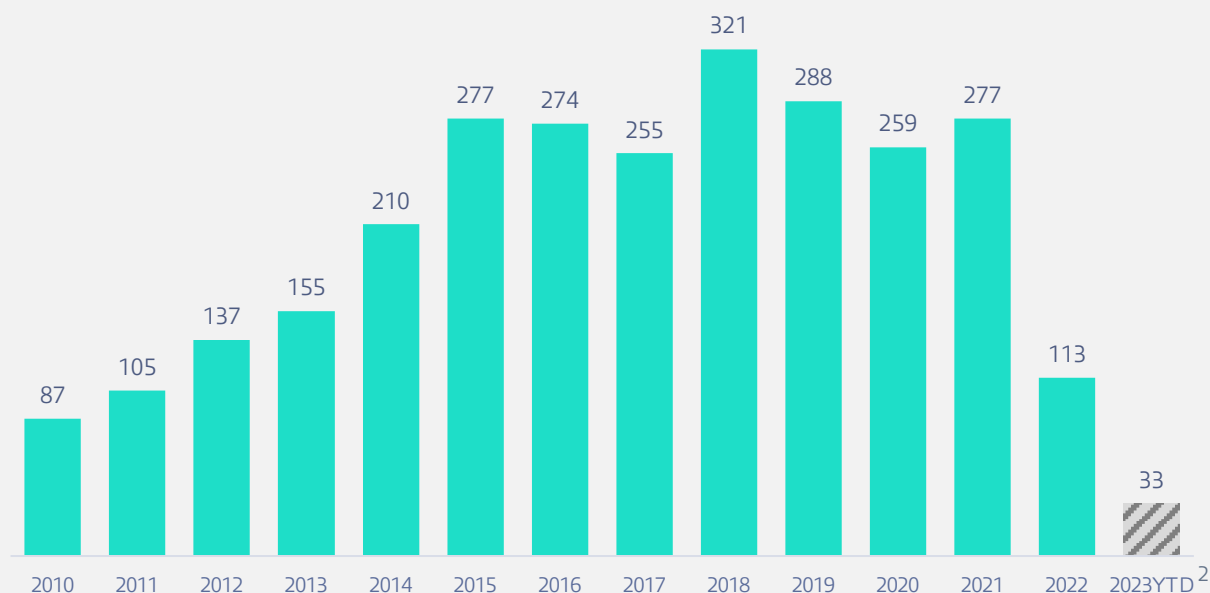
Total Capital Invested in the Fourth Industrial Revolution across Seed, Series A and Series B by Region (\$m)



Increasing sector confidence, as the size of funds investing in Enterprise SaaS fund size trends up

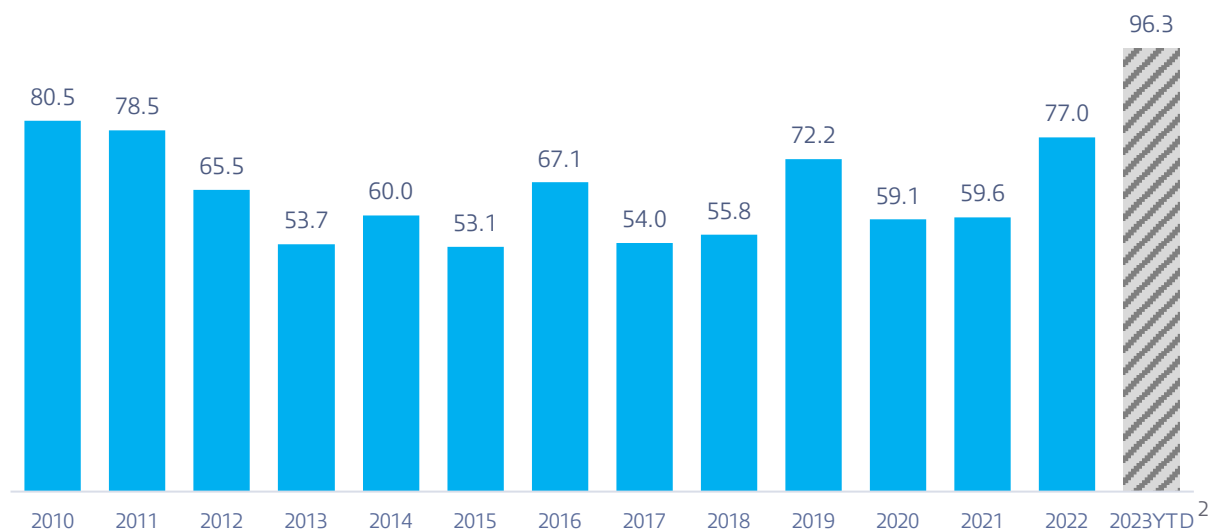
There was an upward trend in terms of number of funds raised investing in Enterprise SaaS from 2010 to 2018. However, the number of funds raised has now stabilised

Number of funds raised globally¹ by VCs investing in Enterprise SaaS



While the number of funds raised has stabilised since 2018, the median fund size of VCs investing in Enterprise SaaS has trended upwards – signaling that confidence amongst funds investing in Enterprise SaaS is increasing

Median fund size raised by VCs investing in Enterprise SaaS globally (\$m)



VC funds investing in the Fourth Industrial Revolution can be segmented into five categories

Classification of VC firms

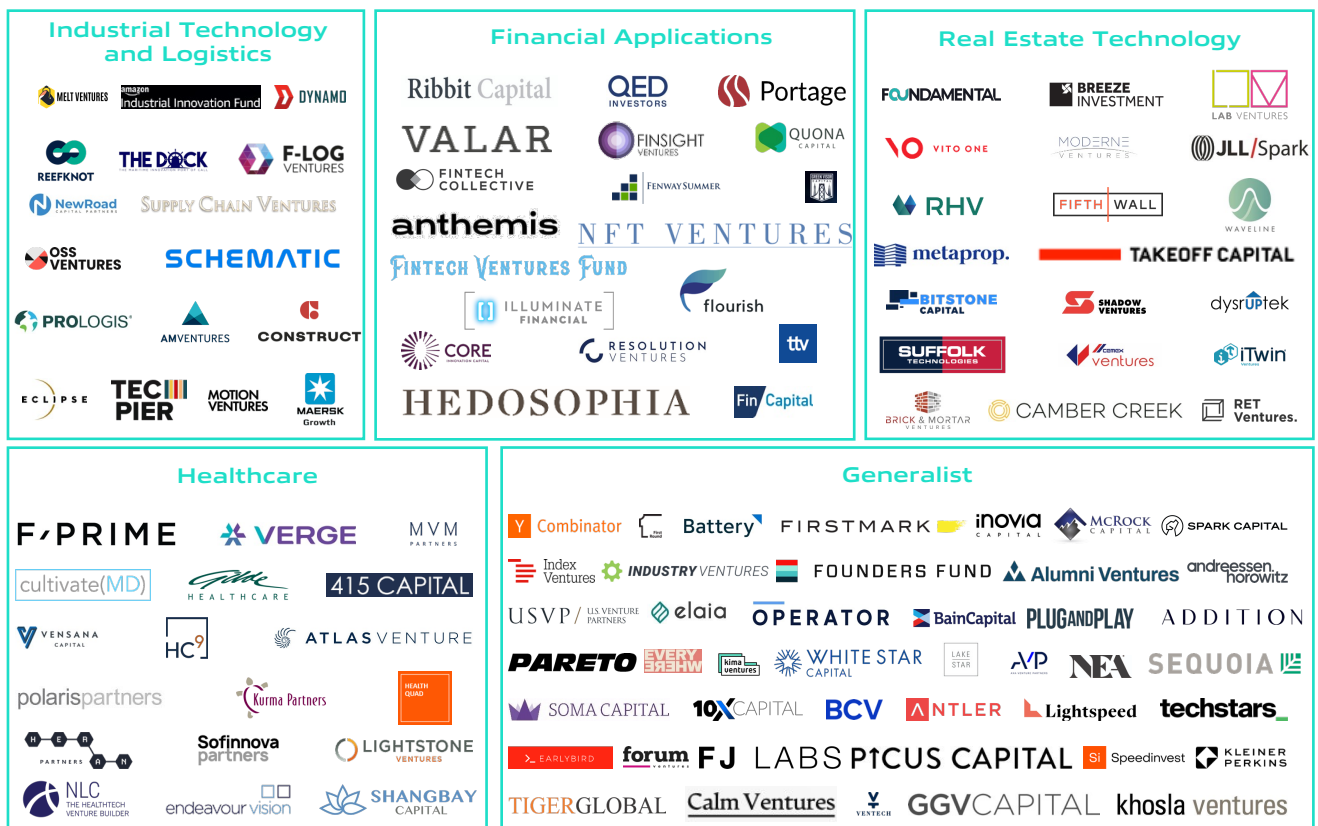
Industrial Technology and Logistics: Focused on either manufacturing or logistics, or both

Financial Applications: Focused solely on financial applications as a single vertical (i.e. Fintech funds)

Real Estate Technology: Focused solely on real estate or a relevant subsector of real estate as a single vertical















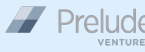











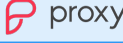












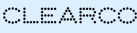


Healthcare Technology Systems: Focused solely on healthcare as a single vertical

Generalist: Focused on a wide range of sectors, but make investments in companies within the Fourth Industrial Revolution space



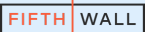
















The largest specialist funds are mostly headquartered in North America

Top specialist VC funds in order of assets under management

Investor	Founded	HQ	AUM	Stage	Deal Count	Top Deals
Industrial Technology						
	2015		\$4.0bn	Series A+	158	  
	2022		\$1.0bn	Seed / Series A+	8	  
	2012		\$182m	Series A to C	29	  
Logistics and Warehousing						
	2013		\$1.5bn	Series A+	149	 
	2010		\$320m	Seed / Series A	258	 
	2013		\$110m	Seed / Series A	31	  
Financial Applications						
	2012		\$11.9bn	Series A+	280	  
	2007		\$3.6bn	Series A+	362	  
	2016		\$2.5bn	Series A / Series B	127	  

The largest specialist funds are mostly headquartered in North America

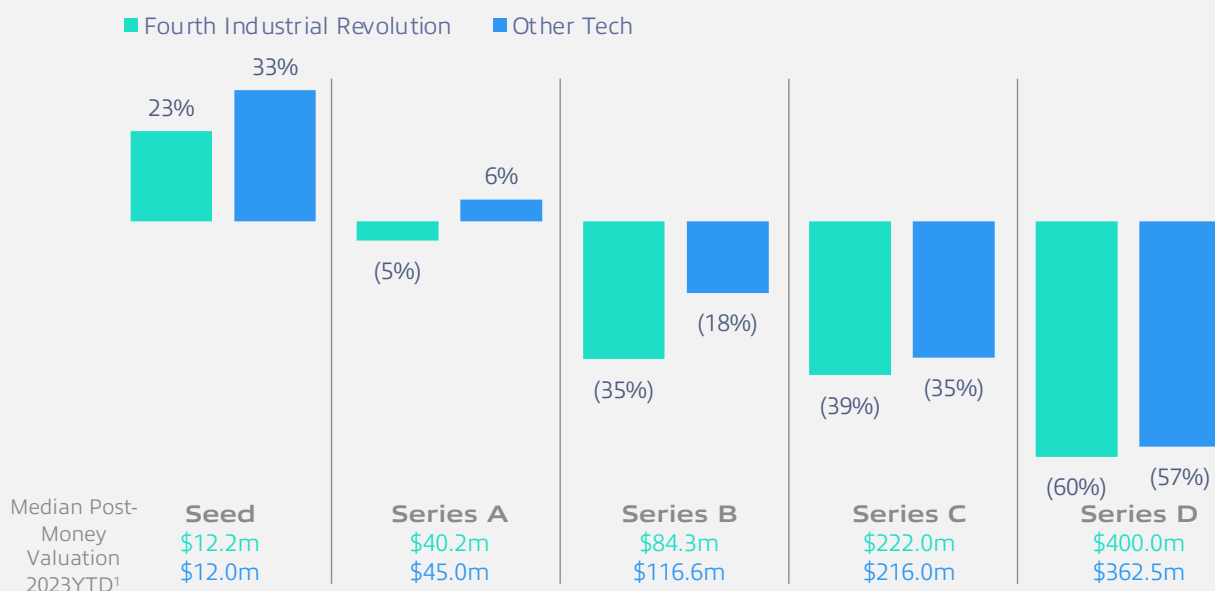
Top specialist VC funds in order of assets under management

Investor	Founded	HQ	AUM	Stage	Deal Count	Top Deals
Real Estate Technology						
 FIFTH WALL	2015		\$3.2bn	Seed / Series A+	197	  
 CAMBER CREEK	2011		\$1.0bn	Series A+	74	 LATCH 
 RET Ventures.	2013		\$600m	Series A / Series B	57	  
Healthcare						
 OAK HC/FT ¹	2014		\$5.3bn	Series A+	166	  
 F PRIME	1969		\$4.5bn	Series B+	522	  
 ATLAS VENTURE	1980		\$2.7bn	Seed / Series A	778	  

The sector has experienced significant valuation declines in recent years

Since 2021, Fourth Industrial Revolution company valuations have corrected more relative to other tech companies across all stages after seed rounds

% Change in Median Post-Money Valuation by Series Globally 2021 – 2023YTD¹



Most sub-sectors saw declines in valuations from 2022 to 2023YTD¹

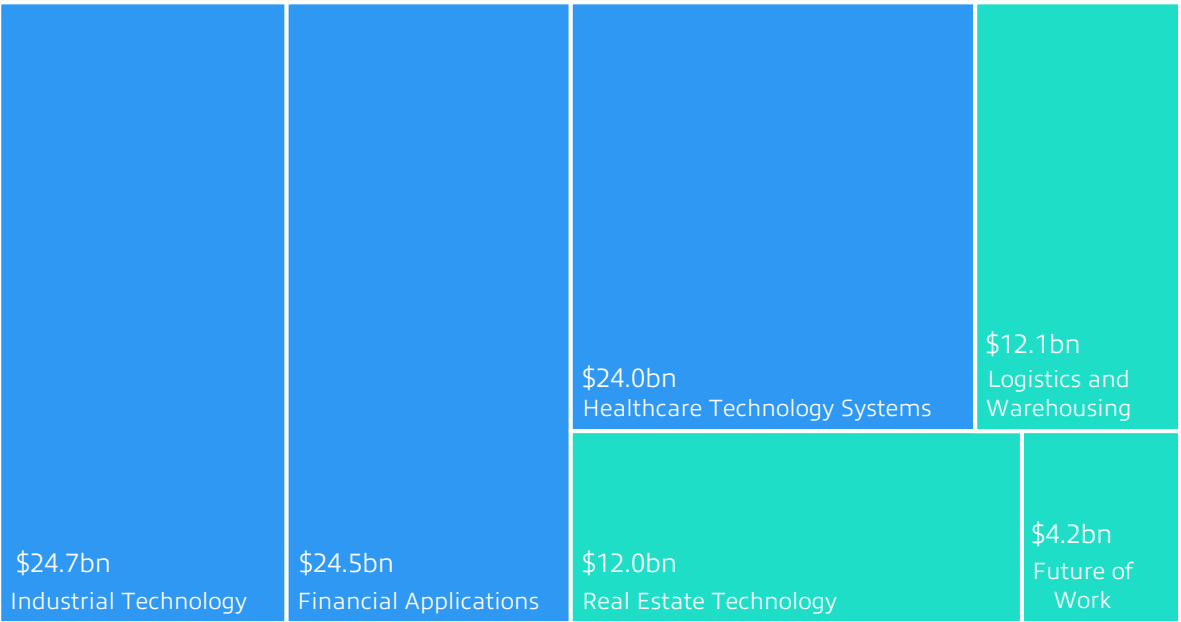
Median Post-Money Valuation per Sub-Sector

Sub-sector	2022	2023YTD ¹	% Change
Industrial Technology	\$20.6m	\$19.2m	(6.6%)
Logistics and Warehousing	\$23.0m	\$18.7m	(8.7%)
Future of Work	\$20.0m	\$13.4m	(2.8%)
Financial Applications	\$29.5m	\$25.0m	(15.1%)
Real Estate Technology	\$18.0m	\$15.1m	(16.1%)
Healthcare Technology Systems	\$18.9m	\$20.0m	6.1%

Healthcare led the way in terms of exit count, and ranked amongst the top in terms of funding

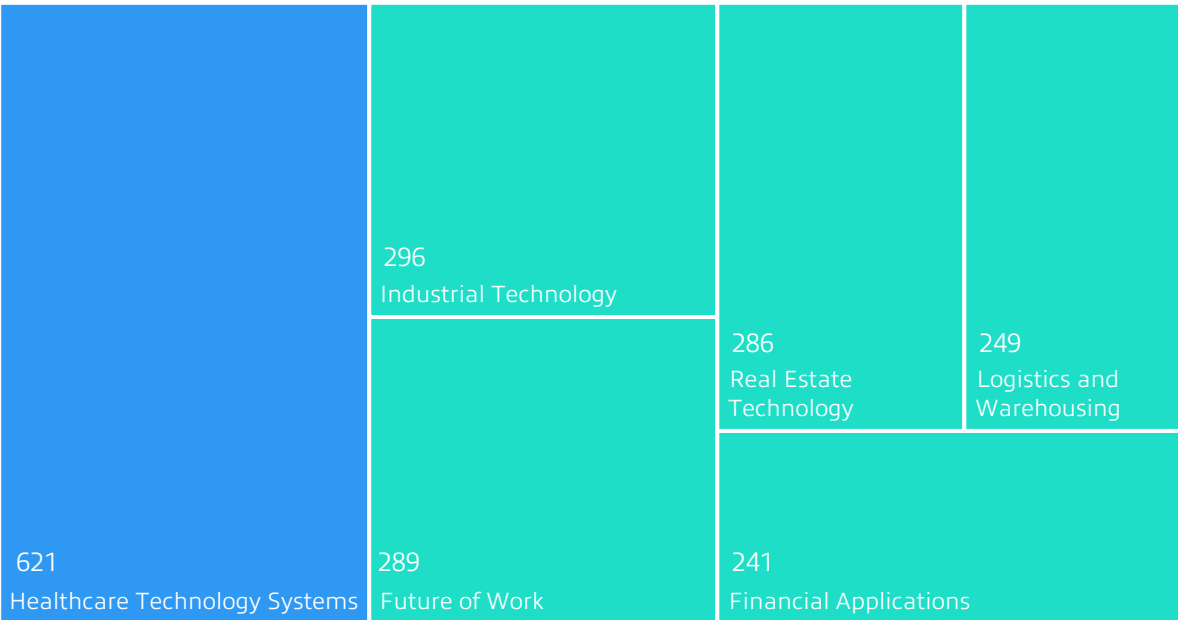
Industrial Technology, Financial Applications & Healthcare Technology Systems startups attracted the most funding as of 2023YTD¹

2023YTD¹ Funding per Subsector



Healthcare led the count of exits from 2020 to 2023YTD¹

Count of Fourth Industrial Revolution exits across M&A and IPO exits since 2020 by sub-sector



The exit environment is picking up, which is key to the long-term viability of the ecosystem

Exit activity in the Fourth Industrial Revolution space saw a 39% increase from 2020 to 2022

89%

Of exits from 2020 to 2023YTD¹ were M&A transactions

1,906

Companies in the Fourth Industrial Revolution space have exited via IPO and acquisitions between 2020 to 2023YTD¹

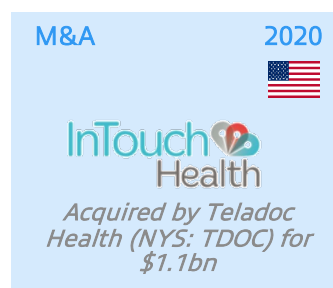
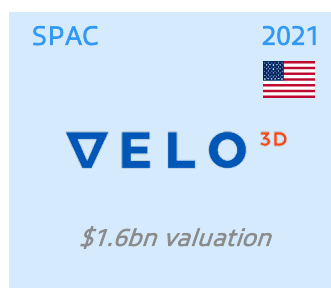
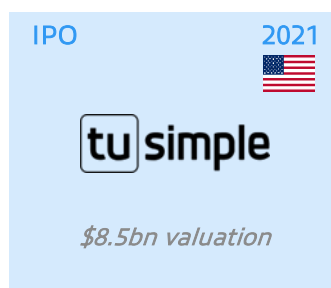
49%

Of Fourth Industrial Revolution exits since 2020 came from 2022 to 2023YTD¹ alone, signaling a robust exit environment

\$451bn

In total Exit Value from 2020 to 2023YTD¹ disclosed through IPOs and acquisitions

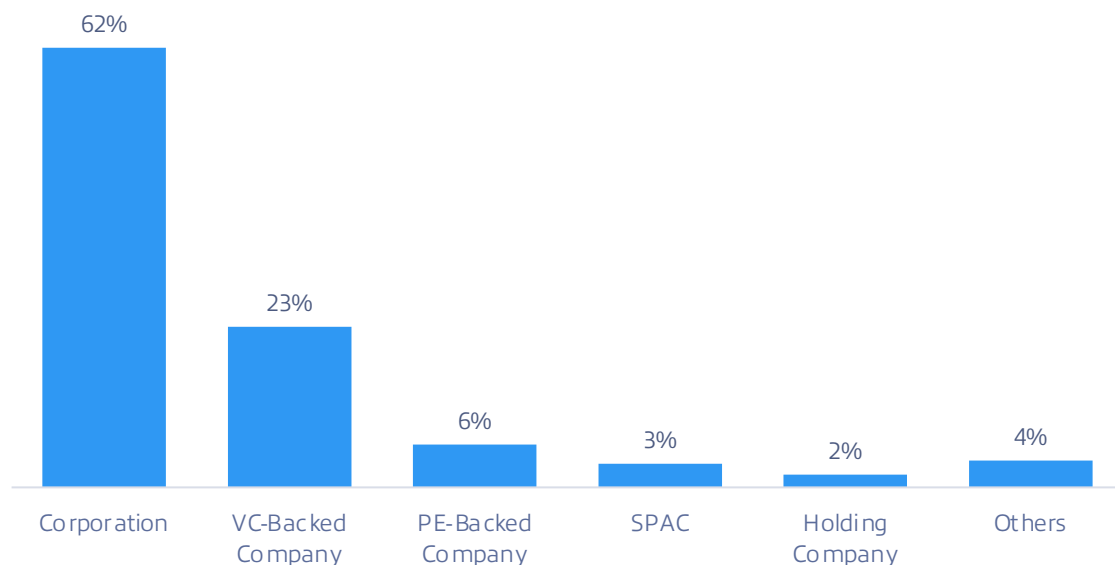
Large Fourth Industrial Revolution Exits across key verticals since 2020



Exits

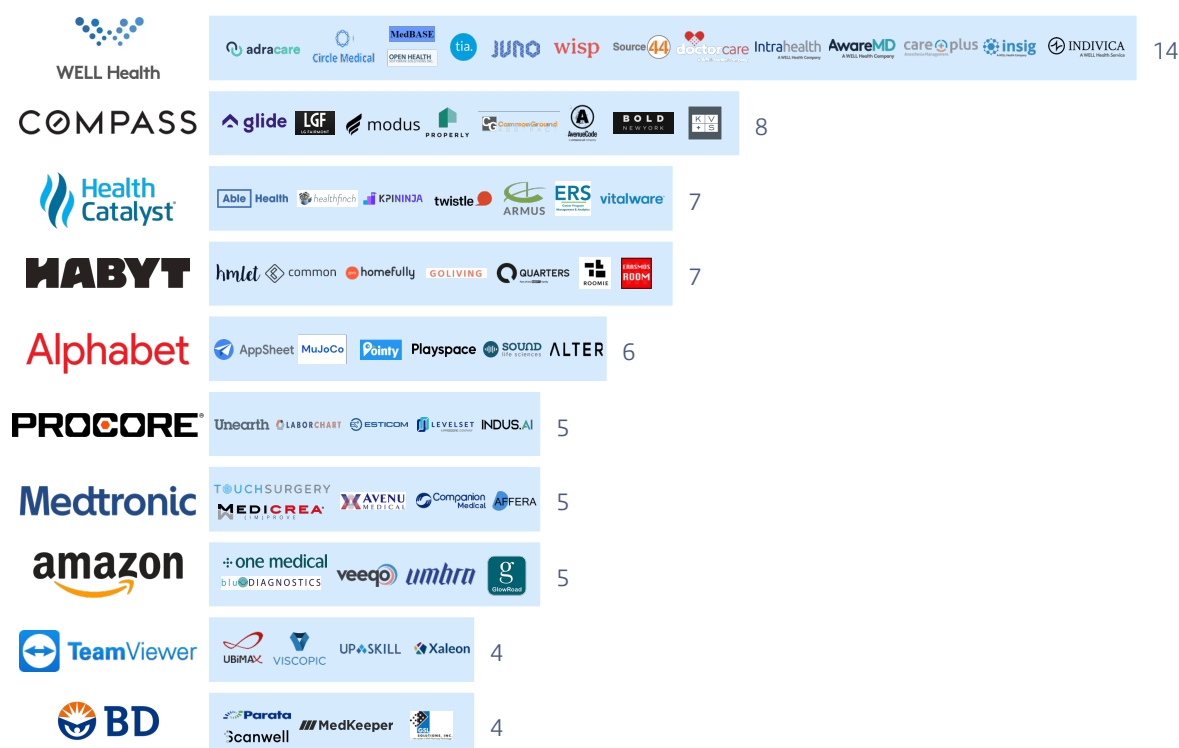
Corporates and VC-backed companies were the most active acquirers of fourth industrial revolution companies

Top 100 acquirers (acquisition count) by acquirer type from 2020 to 2023YTD¹



Top Fourth Industrial Revolution acquirers were mostly made up of Healthtech and Real Estate technology companies

Most active acquirers of Fourth Industrial Revolution companies by count from 2020 to 2023YTD¹



Top Unicorns

Personio

Developer of HR management and recruitment platform designed to serve small and medium-sized organisations.

\$8.5bn valuation



Aledade

Operator of a health technology platform intended to quickly access integrated data from across the care continuum.

\$8.0bn valuation



project44

Developer of a logistics technology platform designed to digitise the shipment life cycle.

\$2.7bn valuation



UPTAKE

Developer of a predictive analytics platform making the industry reliable, productive, safe, and secure.

\$2.3bn valuation



knock.

Operator of an online real estate bidding platform intended to simplify real estate transactions.

\$2.0bn valuation



xendit

Developer of a payment gateway platform helping businesses accepting payments through bank transfers, virtual accounts and credit cards.

\$1.0bn valuation



2

Our approach to
investing in the Fourth
Industrial Revolution



The Fourth Industrial Revolution is powered by several technological shifts

These technological innovations are enabling greater productivity and generating many new investment opportunities

Automation



There is a shift from Robotic Process Automation (RPA) to Intelligent Process Automation (IPA), which involves automating processes that require adaptive learning and repetitive tasks. Generative Artificial Intelligence (GenAI) can reduce the error rate and make smarter automations by creating data that can be used to train the automated processes or bots. This can improve the efficiency of bots, allowing them to perform tasks more quickly and accurately. IPA, with the support of GenAI, can reduce human inefficiencies and streamline tasks, saving employees up to six weeks of work per year.

Low-code/no-code



Low-code platforms democratise access to advanced software technology, unlocking productivity for developers and reducing implementation time and technical debt. No-code tools are 10x faster than traditional development platforms, and provide a flatter learning curve allows organisations to build solutions 56% faster than companies that use traditional methods.

Immersive technologies



Virtual Reality (VR) and Augmented Reality (AR) are gaining traction beyond gaming. Adoption is spreading across sectors, with the global market projected to reach \$494m by 2030, a 29% CAGR. In the B2B space, these technologies are already utilised for prototyping, augmentation, and digital twins. The latter allows businesses to simulate and visualise products or processes in a virtual environment.

Data analytics and software development



Integrating advanced data analytics into software development processes is revolutionising how businesses approach problem-solving and decision-making. By leveraging large volumes of data and applying analytical algorithms, companies can gain deeper insights into customer behavior, market trends, and operational inefficiencies.

Cloud and edge computing



Large enterprises aim to migrate 60% of their digital infrastructure to cloud-based platforms by 2025, while 53% of organisations plan to use edge computing technologies in the next 12 months.

We're excited about backing the companies driving the Fourth Industrial Revolution with the following qualities:

Potential to achieve market scale

Demonstrate tangible ROI

Capable of adapting to rapidly evolving industry standards

Offer additive Fourth Industrial Revolution technology

Deliver recurring revenue and high gross margins

Offer a hedge against macro events

We've created a WSC Investability Index to assess sectors and subsectors of interest

The purpose of this report will be to help shed light on this burgeoning ecosystem, identifying opportunities for investment as a generalist venture capital fund

Scoring: Yes = 1 / No = 0



Business Model

Is this a recurring business model?



Technology Readiness

Is the existing technology ready to scale?



Margins

Are there software-like margins?



Company Stage

Are there revenue-generating businesses raising at Series A?



Market Size

Does the potential market size at scale correspond to our criteria (\$5bn+)?



Exit Environment

Have we seen large exits in this sector (\$1bn+)?



Capital Efficiency

Can these businesses achieve scale without overly diluting early shareholders?



Market Readiness

Are we seeing pull from the market and supportive regulatory regimes?



Barriers to Entry

Are there barriers to entry?



Internationalisation

Is this an internationally scalable model?

Legend

Out of Scope

Score 0-3

Work to be done

Score 4-6

Within WSC Scope

Score 7-9

And broken down the Fourth Industrial Revolution into 6 sectors and 28 subsectors

Industrial Technology



- Connected Workforce
- Digital Twin and Virtual Models
- Advanced Analytics and IoT in Manufacturing
- Maintenance and Quality Management

Healthcare Technology Systems



- Medical Practice Management
- Patient Engagement and Monitoring
- Coding and Medical Billing
- Medical Staff Management

Logistics and Warehousing



- Supply Chain Optimisation
- Warehousing Technologies
- Inventory Management and Demand Forecasting
- Fleet Management and Delivery Services

Future of Work



- Intelligent Process Automation
- Sales and Marketing
- [Task-specific tools] Intelligent Document Processing
- [Task-specific tools] Conversational Artificial Intelligence Solutions
- Talent management

Financial Applications



- CFO Stack
- Banking and Fintech as a Service
- B2B Insurtech Tools
- B2B Payments
- Enabling infrastructure
- Lending for small and mid-size businesses

Real Estate Technology



- Data and Opportunity Discovery
- Agent Tools and Facility Management
- Transactional Tools
- Investing and Leasing
- Design, Engineering and Construction

Our thematic approach to investing leads us to focus on specific subsectors

We focused on the key sectors undergoing rapid structural change



Enterprise SaaS

In a data-intensive world, enterprise SaaS is essential for companies to simplify operations and boost efficiency



Precision Technology Tools

Quality assurance, production management and predictive analysis are improved orders of magnitudes by technology



Intelligent Process Automation

Industrial production, manufacturing and workplace processes are being revolutionised through software productivity tools



Process Orchestration

Digitalisation drives a step change in productivity. Orchestration adds to this by enabling communication across digital solutions

And identified the following subsectors as key beneficiaries

	Enterprise SaaS	Intelligent Automation	Precision Technology Tools	Process Orchestration
Industrial Technology				
Digital Twins and Virtual Models		✓		
Connected Workforce	✓	✓		✓
Advanced analytics and IoT in Manufacturing		✓	✓	✓
Maintenance and Quality Management	✓	✓	✓	✓
Healthcare Technology Systems				
Medical Practice Management	✓	✓		
Patient Engagement and Monitoring	✓	✓	✓	✓
Coding and Medical Billing		✓		
Medical Staff Management	✓	✓		✓
Logistics and Warehousing SaaS				
Supply Chain Optimisation	✓	✓		✓
Warehousing Technologies	✓	✓	✓	✓
Inventory Management and Demand Forecasting	✓	✓		✓
Fleet Management and Delivery Services	✓			✓
Future of Work				
Talent Management	✓	✓		
Sales and Marketing	✓			✓
Intelligent Process Automation	✓	✓		✓
Conversational Artificial Intelligence Solutions	✓			
Intelligent Document Processing	✓	✓	✓	
Financial Applications				
CFO Stack		✓		✓
Banking and Fintech as a Service		✓		✓
Insurtech Tools	✓	✓		
B2B Payments		✓		
Lending for small and mid-size enterprises		✓	✓	
Enabling Infrastructure	✓	✓		✓
Real Estate				
Data and Opportunity Discovery		✓		✓
Agent Tools and Facility Management	✓	✓		✓
Transactional Tools		✓		
Investing and Leasing		✓		

3

Sector Focus



Industrial Technology



Industrial Technology

Industrial Technology aims to revolutionise industrial operations, promising efficiency gains, cost reduction and deliver more sustainable production

29%

Of EU's non-financial business economy's value added by manufacturing sector in 2020

\$20bn

Expected manufacturing SaaS market size by 2026

66%

Of manufacturing firms in the EU have adopted at least one digital technology

50%

Shortage of manufacturing jobs by 2030 in the US

Manufacturing operations have traditionally relied on labour-intensive processes, resulting in systemic inefficiencies and reduced productivity. However, driven by evolving industry needs and technological advancements, the adoption of industrial technologies promises transformative efficiencies in the manufacturing sector.

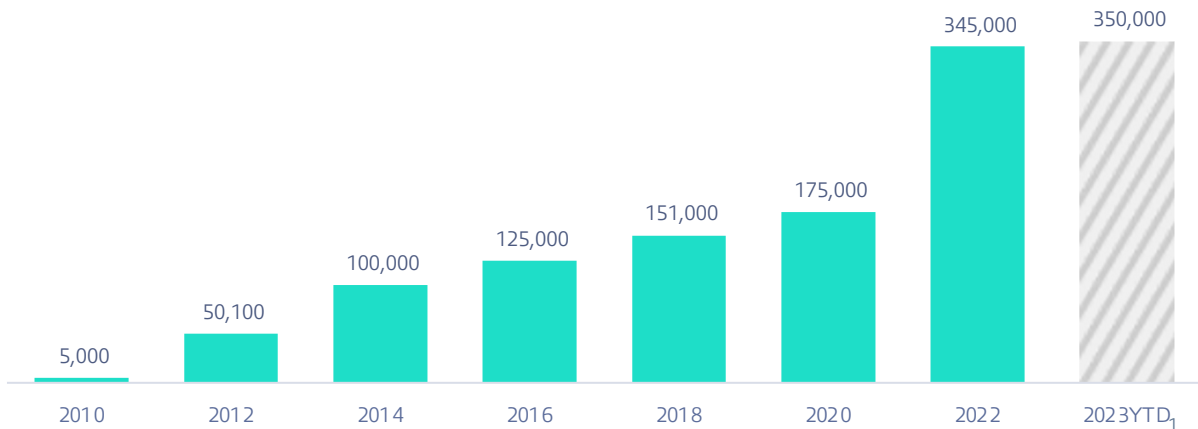
The reasons driving the adoption of industrial automation are shifting, now prioritising resilience, flexibility, and sustainability alongside traditional cost and productivity concerns. This shift is fueled by disruptive technologies and pressing global trends, including reshoring, a growing shortage of skilled labour, and the rise of ESG initiatives.

Technology	WSC Score	Notes
Connected Workforce	10	Scalable solutions
Digital Twins and Virtual Models	8	Horizontal market
Advanced Analytics and IoT in Manufacturing	8	High market demand
Maintenance and Quality Management	6	

Market Drivers

To mitigate supply chain and geopolitical risk, manufacturers are adopting reshoring or nearshoring strategies to bring operations closer to their national borders. North American companies have started nearshoring from China to Mexico, whilst European firms are increasingly looking to Central and Eastern Europe

Number of jobs created by reshoring in the US since 2010



Source: U.S. Department of the Treasury

Policies and Regulation

Realising the importance of controlling production, governments such as the US are incentivising corporate relocations. IRA and the CHIPS Act played a pivotal role in shaping these measures, resulting in a boom in the construction of manufacturing facilities. These shifts to regions with aging workforces and skilled labour shortages may strain labour markets, driving the adoption of SaaS solutions to optimise workforce and productivity.

Governments support industrial policies to create new costs or deliver financial incentives in the manufacturing sector. The US government offered subsidies and loans, erected tariffs, and provided extensive fiscal incentives. The EU responded with its Green Deal, its New European Innovation Agenda, and updated EU Industrial Strategy, to temporarily set aside state-aid rules that limited subsidies to companies in member countries.

Supply Chain Issues

The manufacturing industry faces persistent supply chain challenges, including labour shortages, sourcing bottlenecks, global logistics delays, cost pressures, and cyberattacks. These issues have dampened business confidence and lowered the Manufacturing Outlook Index to 55, a 4.2-point decline since the first quarter of 2022.

Emergence of Lighthouses

The rise of lighthouses manufacturing sites integrating Fourth Industrial Revolution technologies such as connectivity, flexible automation, and intelligence at scale, including digital performance management and quality analytics, are driven by modern workplace practices such as hybrid work. These technologies can successfully address financial hurdles, technology barriers, and organisational issues. Currently, there are 18,600 lighthouses worldwide.

Technologies and Subsectors

Connected Workforce

Score: 10

With a shrinking labour force in manufacturing, companies have to optimise their workforce productivity. Connected workforce solutions can enhance operational efficiency by streamlining tasks' creation, assignment, management, and supervision, improving communication, and sharing best practices.

Tailwinds

- + Shrinking labour force and rising wages prompt companies to optimise their workforce
- + Improved factory safety measures
- + Facilitated data-driven decision-making

Challenges

- + Difficult integration with other software
- + Time required to onboard teams into new software

Digital Twins and Virtual Models

Score: 8

Creating digital twins and virtual models can optimise physical assets and industrial operations by involving real-time digital replicas of physical assets or processes to monitor and optimise performance.

Tailwinds

- + Market size projected to reach \$110.1bn by 2028 (61.3% CAGR 23-28)
- + Applications in industrial and data-driven sectors
- + Simulations can help identify potential inefficiencies and allow for changes before materialisation of impact in the physical world

Challenges

- + Market entirely dominated by NVIDIA with its omniverse platform
- + Low spending on digital twin software compared to general analytics
- + Need for high-quality data infrastructure with reliable data from both testing and live environments

Advanced Analytics and IoT in Manufacturing

Score: 8

In today's data-driven manufacturing landscape, integrating advanced analytics and IoT is essential to optimise processes and enhance productivity. The latest innovation features edge and IoT security platforms, real-time sensors, next-gen networks, connected smart homes, and 5G technology.

Tailwinds

- + IoT market size projected to reach \$3.4tn by 2030 (26.1% CAGR 23-30)
- + Significant growth of IIoT in Asia-Pacific due to IT infrastructure development and government initiatives
- + Increased adoption by small and medium-sized businesses

Challenges

- + Additional measures are required to ensure cybersecurity safety
- + Large-scale IoT infrastructure to manage, along with the complexity of interconnected systems
- + Potential disruptions, including network outages, device failures, or power supply issues

Technologies and Subsectors

Score: 6

Maintenance and Quality Management

Companies seek efficiency gains through automated maintenance. Cutting-edge technologies allow for maintaining high-quality standards by analysing products and processes, identifying defects, and suggesting improvements.

Tailwinds

- + Market size projected to grow to \$49.3bn by 2032 (11.9% CAGR 22-32)
- + Increased demand for better maintenance monitoring to increase product quality and reduce downtime

Challenges

- + Adoption challenge amongst employees used to traditional maintenance

Market Map

Digital Twins and Virtual Models



Connected Workforce



Advanced Analytics and IoT in Manufacturing



Maintenance and Quality Management



Top Asset Light Startups

UPTAKE

Developer of a predictive analytics platform to convert directly into the workflow to make the industry reliable, productive, safe, and secure.

\$323m raised to date



Developer of an AI-powered machine health platform to eliminate downtime, optimise maintenance and maximise productivity.

\$294m raised to date



V E N T I O N

Developer of a cloud-based digital manufacturing platform designed to make industrial automation easier and more accessible.

\$153m raised to date



enable

Developer of a platform designed to manage agreements with suppliers and customers to deliver actionable insights for smarter planning.

\$119m raised to date



NavVis

Developer of an indoor spatial intelligence technology to digitise industrial facilities.

\$109m raised to date



Healthcare Technology Systems



Healthcare Technology Systems

Healthcare solutions are expected to continue disrupting the market by using data to support patient care, reduce physician burnout and administrative burden

\$1.1tn

Enterprise value of opportunity for investors in value-based care by 2027

9.7%

Estimated OECD countries' spending on health as a percentage of GDP

60%

Total healthcare spending percentage going towards improving health and well-being by 2040

\$13.3bn

In yearly cost savings in the U.S. by reducing the administrative burden of healthcare professionals

The shift towards platform-enabled ecosystems and value-based care signifies a transformative paradigm in healthcare innovation. Platform-enabled ecosystems leverage digital platforms to connect patients, healthcare providers, and stakeholders, fostering data sharing and collaboration. This promotes a more patient-centric approach, with individuals accessing their health information and personalised care recommendations. At the same time, value-based care focuses on delivering high-quality care measured by patient outcomes rather than the volume of services provided.

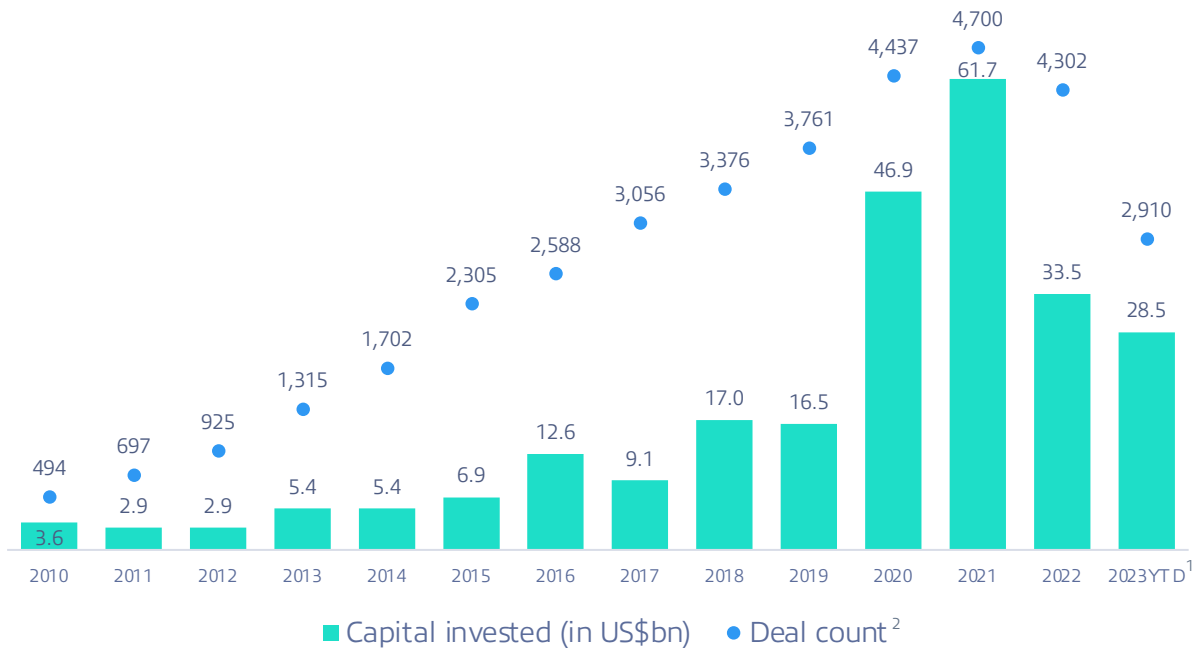
Innovations in healthcare are poised to enhance service quality by aligning stakeholders' interests, driving improved health outcomes, and curbing healthcare costs.

Technology	WSC Score	Notes
Medical Practice Management	9	Streamlines operations
Patient Engagement and Monitoring	7	Profit margin improvement
Coding and Medical Billing	7	Shift towards digital transformation
Medical Staff Management	6	

Market Drivers

The move to value-based care and shifting government regulations drive digital health startups to create innovative solutions centered on better patient outcomes and cost-effective, data-driven care.

B2B Healthcare: Capital Invested and Deal Count since 2010



Source: Pitchbook (2023)

Shift to Value-Based Care

The transition to value-based care, with value defined as health outcomes per unit of costs, offers a fertile ground for healthtech innovation. Healthtech solutions have streamlined healthcare processes, leveraged data analytics for better decision-making, and enhanced patient engagement, aligning with value-based care models' fundamental objectives: improved patient outcomes and cost reduction. By utilising advanced technologies, healthtech companies can transform the healthcare industry toward a more patient-centric, efficient, and cost-effective approach to care delivery.

Changing Regulatory Landscape

Evolving healthcare regulations worldwide are spearheading the integration of technological tools in healthcare, which enhances efficiency and transparency across the value chain. This shift is also driven by the need to cater to the healthcare demands of an aging population and Generation Z. Better government funding and subsidies are lowering the barrier of entry for startups and small businesses to make meaningful contributions to democratising healthcare access and affordability.

Source: Deloitte, SVB, WSC Analysis (2023)

Notes: 1) As of September 2023 2) Pitchbook deal count filters: Healthcare (Digital Health, Healthtech, TMT, AI&ML, SaaS, Big Data)

Technologies and Subsectors

Medical Practice Management

Score: 9

Medical practice management leverages technology to streamline back office administrative and operational tasks, improving efficiency, care, and the service quality of medical practices and the procurement and logistics of medical equipment.

Tailwinds

- + Shifting healthcare models from fee-for-service to value-based care incentivises practices to focus on quality, cost-effective care, and better patient outcomes.

Challenges

- + Navigating complex and evolving healthcare regulations can be time-consuming and may lead to compliance issues.
- + Fragmented customer base (e.g. SMB healthcare providers).

Patient Engagement and Monitoring

Score: 7

The aging population's rising healthcare needs drive a growing demand for patient monitoring and engagement software, which enables remote health tracking and early intervention. These technologies are crucial for patient engagement, medication adherence, and health insights.

Tailwinds

- + Smaller profit margins per patient force healthcare providers to invest in lean improvement approaches to retain patient flow.
- + Payers and providers are investing in engaging earlier and finding new ways to deepen the relationship with patients.

Challenges

- + Insufficient government funding and subsidies decrease the capacity to offer population-wide patient success platforms.
- + Integrating different systems and platforms to ensure seamless workflow and data exchange can be complex.

Coding and Medical Billing

Score: 7

Coding translates medical information into codes for insurance and records, while medical billing submits these codes for reimbursement and financial management. These processes contribute to developing medical innovation technologies by ensuring efficient data management and enabling advanced analytics for better patient care, resource allocation, and healthcare research.

Tailwinds

- + Hospital reimbursement growth continues to trail cost increases, prompting the shift to digital solutions.
- + Better integration with digital insurtech players streamlines the coding process.

Challenges

- + Evolving healthcare delivery models, such as telemedicine, may require coding and billing software to iterate their business model constantly.
- + Misalignment of incentives with insurance players charging on a "cost-plus" basis

Technologies and Subsectors

Score: 6

Medical Staff Management

Medical staff management is the administrative process that encompasses the recruitment, credentialing, scheduling, and coordination of healthcare professionals within a healthcare institution, such as hospitals or clinics. This management function is essential for delivering safe and effective patient care while navigating the complexities of staffing shortages in healthcare.

Tailwinds

- + Outsourcing credentialing and privileging tasks to specialised agencies can expedite the onboarding process.

Challenges

- + Healthcare professionals may experience burnout due to heavy workloads, affecting retention and recruitment efforts.

Market Map

Medical Practice Management



Patient Engagement and Monitoring



Medical Staff Management



Medical Billing and Coding



Top Asset Light Startups



Health technology platform intended to quickly access integrated data across the care continuum.

\$678m raised to date



Platform helping patients book appointments online and offering practitioners software to manage their patients and consultations.

\$461m raised to date



Digital employment platform facilitating the nurse recruitment process for healthcare facilities.

\$249m raised to date



Automation technology software leveraging data and eliminating manual work to drive efficiency for healthcare institutions.

\$205m raised to date



Application strengthening physician-patient relationship by helping practices succeed in delivering personalized care to patients.

\$109m raised to date



Logistics and Warehousing



Logistics and Warehousing

Logistics and Warehousing aim to enhance supply chain efficiency, mitigate disruptions and improve visibility for better operations

\$25tn

Value of world merchandise trade in 2022

\$6bn

Expected market size for logistics SaaS in 2030, a +10% CAGR 2022-30

540m sqft

Square footage of owned and leased Amazon fulfillment centers

16

Logistics SaaS unicorns to date

Recent geopolitical events, such as the Russia-Ukraine conflict and COVID-19, have exposed inherent weaknesses in supply chains. Companies are actively seeking solutions to help them manage disruptions, diversify sourcing, and enhance visibility and tracking.

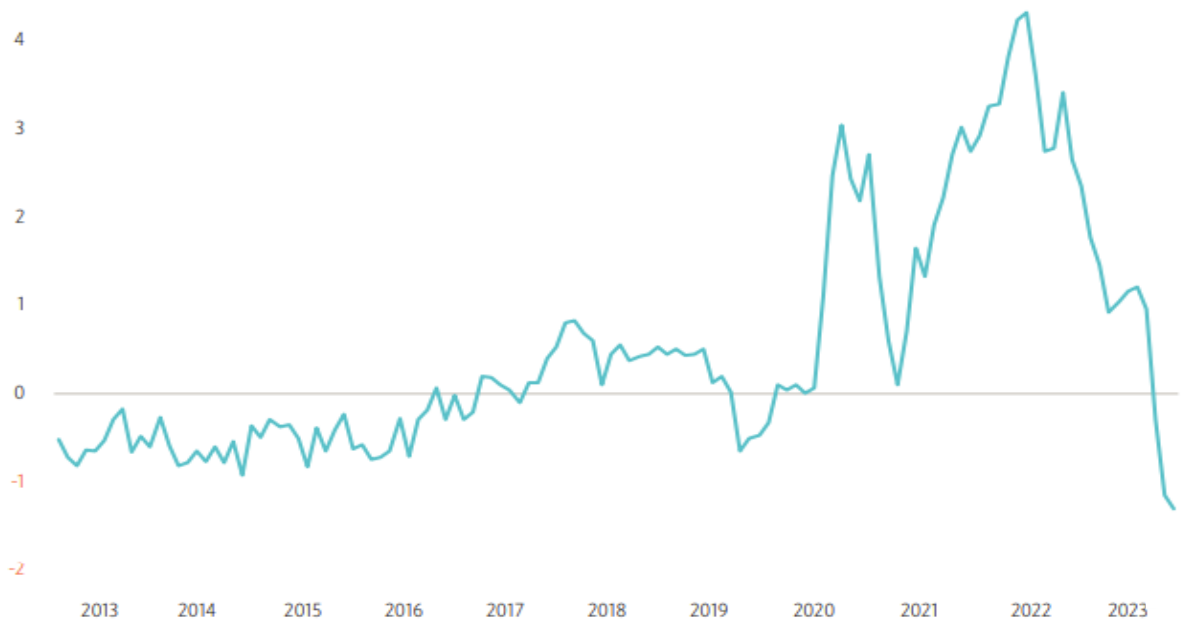
There is an opportunity to invest in Logistics and Warehousing, as these sectors are lagging in digitalisation. Logistics and Warehousing represent highly fragmented markets, with companies often relying on labour-intensive, archaic methods. These characteristics suggest the potential for breakthroughs and innovative solutions that could significantly add value to the sector.

Technology	WSC Score	Notes
Supply Chain Optimisation	8	Large market demand
Warehousing Technologies	7	Horizontal market
Inventory Management and Demand Forecasting	6	Highly scalable solutions
Fleet Management and Delivery Services	6	

Market Drivers

Under recent geopolitical friction, companies are seeking to build robust and resilient supply-chains to respond quickly to operational disruptions through flexible contingency planning and forecasting

Global supply chain pressure index



Policies and Regulation

The outbreak of the Russia-Ukraine conflict and the upcoming US national elections in 2024 have led companies worldwide to reassess their supply chains, and governments have implemented measures to secure essential resources. In 2024, industrial and trade policies will remain a central concern, with ongoing tariff assessments, such as the US Section 301 duties on imports from mainland China, negotiations regarding steel and aluminum between the EU and the US, and an EU inquiry into mainland China's electric vehicle industry.

Resource protectionism is expected to persist in certain countries due to escalating prices and government security strategies.

Labour Shortage

Recruiting and retaining skilled workers is one of the leading challenges for many supply chain operators. Technology is a key lever to automate routine tasks, easing the shortage by reducing reliance on manual labour while freeing up capacity for higher-value add activities.

Supply Chain Resilience

Supply chain disruptions amidst COVID-19 and the Russia-Ukraine war have shown a need for supply chain resiliency. Apart from near-shoring, which has limitations, technology is expected to play a key role in fortifying the resilience and efficiency of global supply chains by driving connectivity and visibility, amongst other factors.

Technologies and Subsectors

Score: 8

Supply Chain Optimisation

Enterprise supply chain management increasingly adopts cloud-based solutions to improve visibility and resilience. This evolution prioritises comprehensive oversight and adaptive capabilities, beyond just cost-cutting. Startups are integrating advanced technologies such as IoT, artificial intelligence, and mobile applications, whilst addressing broader ESG concerns.

Tailwinds

- + Increased demand for solutions to better manage disruptions, diversify sourcing, and improve visibility and tracking
- + Need to overcome shortages in the supply chain labour force

Challenges

- + Cyber-attacks and DoS surge
- + Material access in turmoil
- + Geopolitical tensions with nations turning inward and exploring domestic self-sufficiency

Score: 7

Warehousing Technologies

The increasing importance of e-commerce and supply chain optimisation are expected to drive growth in smart warehousing. Big Data and analytics, artificial intelligence and IoT allow for optimising processes within the warehouse, decreasing costs and time by automating tasks and minimising labour.

Tailwinds

- + Global Smart Warehousing market size expected to reach \$29bn by 2028 (11.2% CAGR 22-28)
- + Increasing digitalisation and automation of warehouses
- + Need for a higher degree of connectivity among workers

Challenges

- + Resistance to changes in the processes amongst the workforce
- + Lower penetration of smart warehousing across small-scale businesses

Score: 6

Inventory Management and Demand Forecasting

Supply chains are looking to benefit from faster and more accurate inventory management and shipment verification in light of recent geopolitical turmoil.

Tailwinds

- + Inventory Management Software market size expected to reach \$4.9tn by 2027 (9.9% CAGR 21-27)
- + More detailed and timelier information about consumers' demand

Challenges

- + Existing established market solutions offered by legacy ERP companies
- + Lower adoption amongst small and medium-sized businesses

Technologies and Subsectors

Fleet Management and Delivery Services

Score: 6

Technological advances in autonomous delivery are on their way to disrupt the highly labour-intensive transportation industry. Artificial intelligence and real-time data inflows will enable clients to improve their assets' productivity.

Tailwinds

- + Underutilisation of assets (25% of US trucking capacity is unused)
- + 5G expansion to increase the speed at which information travels, reducing latency and increasing productivity

Challenges

- + Slower adoption among small fleet owners
- + Recent rise in operational and fuel costs with recent geopolitical tensions and microchip shortage

Market Map

Supply Chain Optimisation



Warehousing Technologies



Inventory Management and Demand Forecasting



Fleet Management and Delivery



Top Asset Light Startups

flexport.

Developer of a freight forwarding platform designed to provide visibility and control over the entire supply chain.

\$2.5bn raised to date



project44

Developer of a logistics technology platform designed to digitise the shipment life cycle.

\$983m raised to date



©forto

Developer of a digital freight forwarder and shipping management platform designed to manage logistics.

\$617m raised to date



Flexe

Developer of an omnichannel logistics platform to create an open logistics network that optimises the global delivery of goods.

\$263m raised to date



SHIPPEO

Supply chain visibility platform that provides shippers instant access to predictive information of all deliveries.

\$90m raised to date



Future of Work



Future of Work

B2B Future of Work comprises a set of tools that connect and streamline operations within and across different business units of an organisation

\$2.5tn

Spend on digital transformation technologies and services by 2024

\$20bn

Market size of workflow automation industry

84%

Of small businesses still rely on some sort of manual process

52%

Of business leaders believe that 10-30% of their daily tasks can be automated

Back-office automation has evolved significantly over the years and has now extended to the front office, addressing critical operational tasks. This trend benefits both large multinational corporations aiming to increase their profit margins and SMBs seeking substantial productivity improvements.

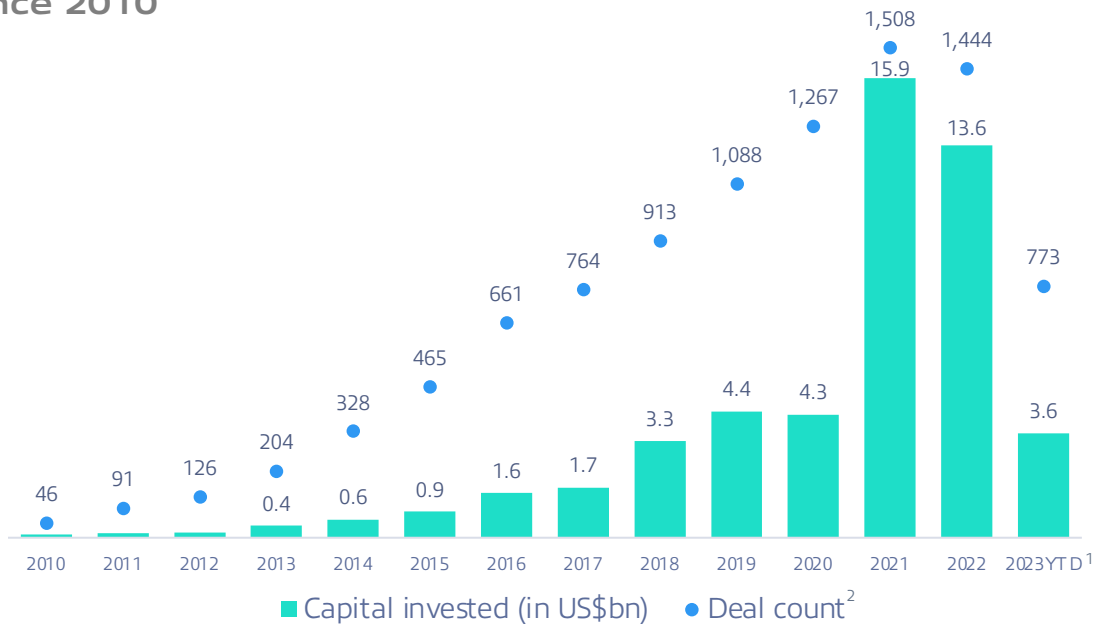
We expect notable advancements in the streamlining and automating processes across Talent Management, Sales and Marketing, and others. These advancements will be driven by smart tools that drastically reduce reliance on manual labour, such as Conversational Artificial Intelligence and Intelligent Document Processing.

Technology	WSC Score	Notes
Intelligent Process Automation	9	Demand for automation
Sales and Marketing	7	Large horizontal market
Intelligent Document Processing	7	Large horizontal market
Conversational Artificial Intelligence Solutions	5	
Talent Management	4	

Market Drivers

Capital invested in B2B Future of work software increased 15x from 2015 to 2022, indicating a strong appetite for this sector

Future of Work Software: Capital Invested and Deal count since 2010



Source: Pitchbook (2023)

Shift in workforce demographics

By 2030, millennials will constitute 40% of the workforce. Unlike previous generations, they are averse to engaging in manual, repetitive tasks and hold high expectations for their digital workplace experiences to mirror their seamless consumer interactions. This will drive the adoption of B2B Future of work applications to increase efficiency.

Rapid advancement of artificial intelligence and machine learning

2023 is the breakout year for generative artificial intelligence. AI investment could reach U\$200bn globally by 2025. This rapid advancement and investment in AI-related tech accelerate the development of automation tools by enhancing data processing, improving predictive analytics, reducing errors, etc.

Increasing adoption of digital transformation and automation

Organisations are increasingly undergoing digital transformation to stay competitive. 91% of businesses are engaged in some form of digital initiative. By 2025, 75% of business executives will be able to adapt to new markets and industries using digital platforms. As such, this provides a good foundation for automation software as digital transformation pushes companies to collect, store, and leverage data.

In fact, 70% of respondents in McKinsey Global Survey say their organisations are at least piloting automation technologies in one or more business units or functions, up from 66% in 2020 and 57% in 2018.

Source: WSC Analysis (2023), US department of labour, Goldman Sachs, Gartner, Quixy, McKinsey, Pitchbook (2023)

Notes: 1) As of October 2023 2) Pitchbook filter: Productivity Software across functions incl. in HR, Sales&Mkt, Automation

Technologies and Subsectors

Intelligent Process Automation

Score: 9

Intelligent Process Automation tools are software that automates business processes by enabling the orchestration of diverse sets of actors (human, systems, bots) involved in executing simple and more complex processes.

Tailwinds

- + Solutions to reduce corporate cost structure with a lasting impact

Challenges

- + Complex to implement due to lack of skilled manpower and technical expertise required for a successful deployment
- + Time-consuming and requires significant initial capital investment, which can be a barrier for some organisations
- + Potential resistance from employees due to concerns about job displacement

Sales and Marketing

Score: 7

Companies are operating in a data-rich world. There has been a rise of data-driven and technology-focused approaches with the introduction of tools to automate and personalise communication, track sales, execute and manage different marketing tools, etc.

Tailwinds

- + Improved user engagement and retention
- + Increase in topline growth by leveraging the sales and marketing datasets, among the largest and most liquid in a company

Challenges

- + Complexity of handling various software vendors and ensuring smooth integrations and upgrades while seeing rapid changes in technology
- + Overwhelming quantity of available technologies with redundancies complexify the selection process

Intelligent Document Processing

Score: 7

These platforms use machine learning and natural language processing to enhance business efficiency by automating data extraction from complex documents with semi-structured or unstructured formats.

Tailwinds

- + Key driver in digital transformation efforts across various industries
- + Good ability to convert unstructured data (e.g. emails, text messages, photos, PDFs, others) into meaningful insights crucial for informed business decisions
- + Enable companies to handle the growing volume of data and document processing requirements in a scalable way

Challenges

- + Managing data access and rights to prevent data misuse
- + Handling various types of documents, particularly those with complex formats and quality, posing a significant challenge

Technologies and Subsectors

Conversational Artificial Intelligence Solutions

Score: 5

Conversational Artificial Intelligence solutions are poised to be pivotal in enhancing automation, flexibility, and remote work capabilities while improving customer service and workplace communication.

Tailwinds

- + Market set to grow at a CAGR of 22.6% from 2023 to 2028, reaching nearly \$30bn by 2028
- + Development of chatbots with advanced emotional intelligence, enabling more nuanced and empathetic interactions
- + Growing trend of integration with other technologies

Challenges

- + Constant evolution of human language requires continually adjusting to new trends and speech patterns
- + Significant challenges in effectively engaging customers and at risk of being commoditised with generative artificial intelligence
- + Potential latency, breakdowns, and high costs associated with implementing and maintaining API solutions

Talent Management

Score: 4

There is a shift toward all-in-one platforms, integrating various workforce-related functions into a single streamlined system for enhanced efficiency and user experience. Emerging solutions combine everything from recruitment tools, storing employees' files to performance tracking.

Tailwinds

- + Improve employee and employer experience and engagement from onboarding to ongoing career development and performance monitoring
- + Allow for more informed decision-making, trend analysis, and predictive insights related to workforce management
- + Accentuate shift from human resources to talent management, supporting employees' professional growth

Challenges

- + Concerns over security and privacy of data
- + Artificial Intelligence faces a challenge in replacing human tasks, particularly in conflict resolution

Market Map

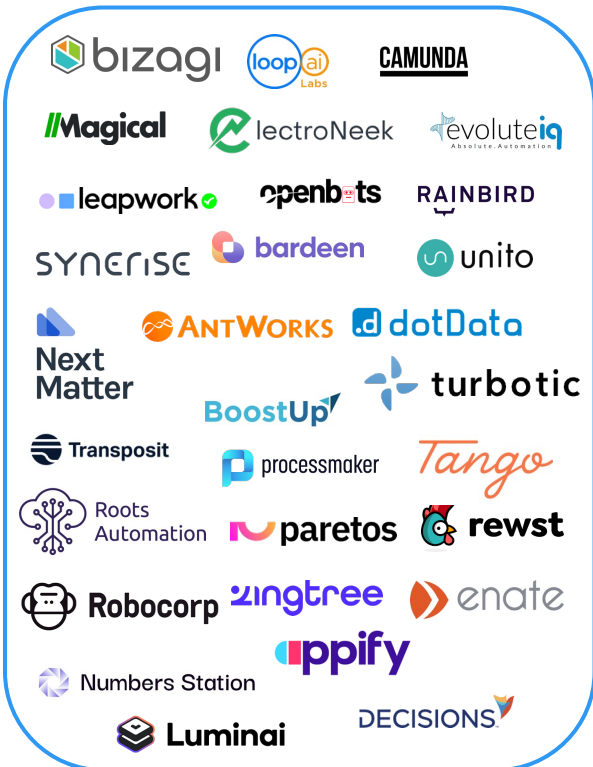
Talent Management



Sales and Marketing



Business process automation



Task-specific Tools



Top Asset Light Startups



Developer of an artificial intelligence-based research and deployment platform.

\$13bn raised to date



Developer of marketing automation platform offering marketing pitches, web development, etc.

\$760m raised to date



Developer of human resources management and recruitment platform designed to serve small and medium-sized organisations.

\$725m raised to date



Developer of AI-based enterprise software designed to reduce monotonous manual entry and automate office work.

\$299m raised to date



Developer of process orchestration software that offers detailed visibility into business operations across distributed systems.

\$127m raised to date



Financial Applications



Financial Applications

B2B Fintech solutions aim to digitise financial operations and transactions that occur between businesses.

\$725bn

Revenue from B2B Fintech by 2030, up 9x from 2021

80%

Of B2B transactions expected to be online by 2025

70%

Of jobs and GDP composed of SMBs, who will benefit the most from B2B Fintech

68

B2B Fintech unicorns to date

Historically, B2B financial services and operations have been very manual, leading to inefficiencies and lower productivity. Advancements in technology and user preferences have made adopting B2B Fintech much more feasible today.

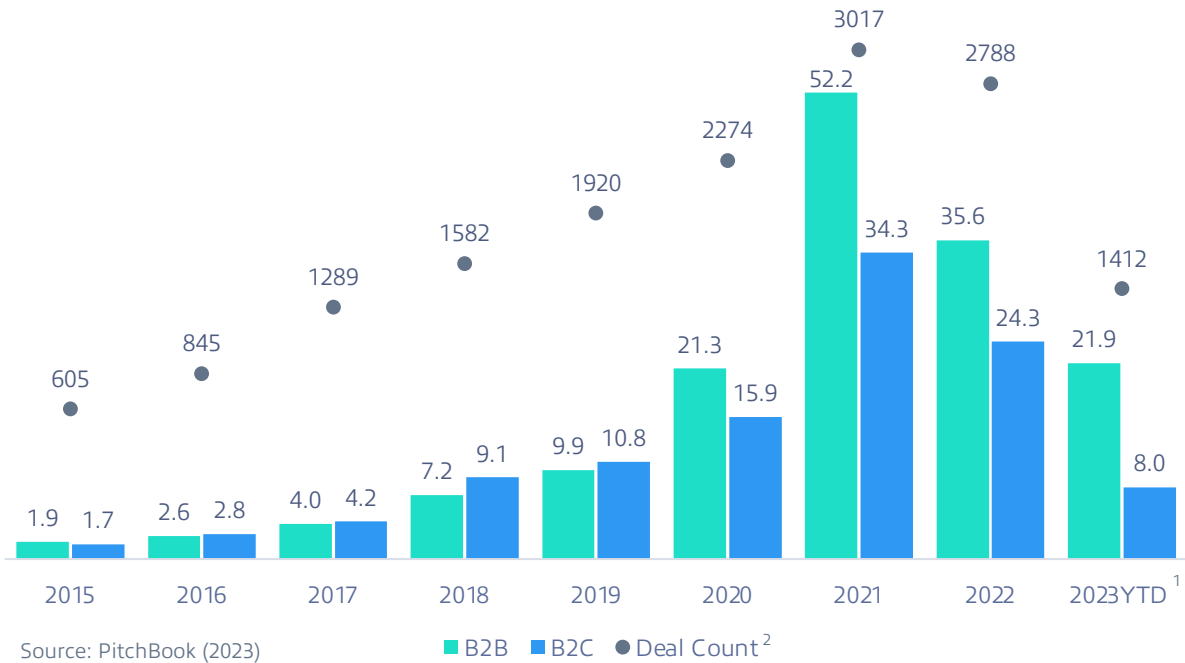
The next wave of Fintech innovation is expected to enable business operations and transactions, targeting the CFO stack, B2B payments, Banking and Fintech as a Service, SMB lending, insurance and enabling infrastructure.

Technology	WSC Score	Notes
CFO Stack	8	Demand for automation
Banking and Fintech as a Service	8	Digitalisation trend
Insurtech Tools	8	Digitalisation trend
B2B Payments	7	Large international market
Enabling Infrastructure	6	
Lending for small and mid-size businesses	5	

Market Drivers

B2B Fintech funding has risen steadily and surpassed B2C, supported by strong policy support and push to digitalise financial services

B2B Fintech: Capital Deployed (\$bn)



Policies and Regulation

Governments globally are making a regulatory push to encourage digital invoicing. Various members of the EU have committed to shifting to mandatory e-invoicing as part of the EU Commission's initiative, *VAT in the Digital Age (ViDA)*. Many governments also implemented open finance regulations, albeit to varying degrees, creating access to data that enables various forms of Fintech innovation. This includes *PSD2* in the EU and *Consumer Data Right* in Australia. Moreover, companies are pressuring their governments to reform the traditional financial sector. Canadian Fintech leaders signed an open letter in November 2023 calling on the government to move forward with open banking.

Shift in workforce demographics

Millennials and Gen Zs use mobile banking 5x more than their parents. They are digital natives; their familiarity and comfort with technology will drive businesses to adopt more advanced fintech solutions to increase efficiency and transparency, supporting a digitalised work experience.

Real-time payments (RTP)

RTP technology has increasingly become the focal point for financial institutions, payment providers, and businesses. RTP catalyses B2B fintech by significantly reducing time and cost for payment transactions, improving cash management, and providing a wealth of data in real-time.

Technologies and Subsectors

CFO Stack

Score: 8

Teams need to allocate resources to strategic initiatives. Hence there is need for tools to streamline manual finance workflows such as accounting, AP/AR, spend management and payroll.

Tailwinds

- + Increase in hybrid work arrangements calls for software to enable automation and collaboration
- + Shift in CFO's focus from being an accountant to strategic leader

Challenges

- + Finance stacks are often complicated and intermingled
- + Adoption and implementation can be long drawn

Banking and Fintech as a Service

Score: 8

Banks and non-banks need access to digital banking capabilities and services in a digital-first world. Platforms that provide this digital experience are beneficiaries of digitalisation.

Tailwinds

- + Growing demand for digital user experience design and user interface design (UI/UX) driven by the increasing share of the millennial workforce
- + Push for cost optimisation, which drives traditional institutions towards digital offerings

Challenges

- + Highly regulated sector
- + Risk of being disintermediated as a middleman

Insurtech Tools

Score: 8

The insurance industry is served by large and traditional incumbents. The main innovation in this space is technology tools to enhance and improve the efficiency of incumbents.

Tailwinds

- + Insurers increasingly prioritising improvements in operational efficiency and customer experience through digital solutions

Challenges

- + Consolidated customer base (insurers) reduces bargaining power
- + Industry is mature and can be reliant on legacy systems

Technologies and Subsectors

B2B Payments

Score: 7

Paper and offline remain the standard mode of payment even in the most developed economies. There is huge potential for digital B2B payment solutions across checkout, cross-border, real-time, billing, BNPL and other payments infrastructures.

Tailwinds

- + B2B payment market is expected to reach \$200tn by 2028, which is 5x the B2C market
- + B2B digital payments significantly lag in adoption vs B2C; only 30% of global B2B expenditures are processed electronically compared to 60% for B2C

Challenges

- + B2B payments are complex and hence more difficult to digitalise
- + Adoption of digital payments can be long drawn

Enabling Infrastructure

Score: 6

Both finance and non-finance companies are increasingly looking to provide or digitalise financial services. Infrastructure providers are key enablers, supporting on compliance and fraud, open banking and API integrations, amongst others.

Tailwinds

- + Growing demand to provide digitalised financial services
- + Strong regulatory support for digital financial transactions and open access to financial data

Challenges

- + Highly complex operating environment
- + Heavily subjected to changes in regulation and policy

Lending for small and mid-size enterprises

Score: 5

Small and mid-size enterprises have traditionally lacked access to bank loans. With advancements in technology and underwriting abilities, tech-enabled lenders are now providing alternative sources of financing.

Tailwinds

- + Advancements in technology such as big data and AI/ML that enable smarter underwriting
- + White space untapped by traditional banks

Challenges

- + Rising cost of capital makes it more difficult to profit on loans
- + Can be capital intensive to scale

Market Map

CFO Stack



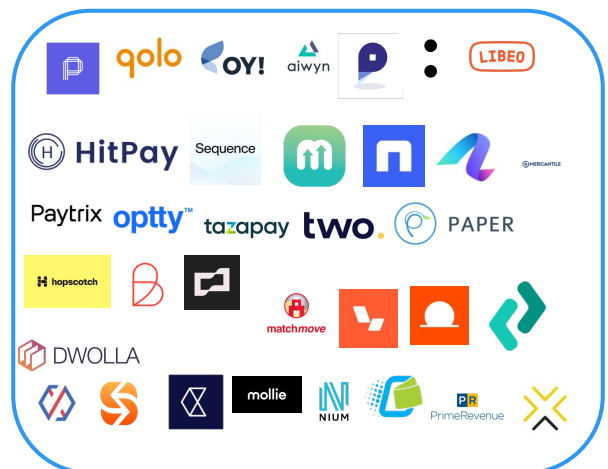
Banking and Fintech as a Service



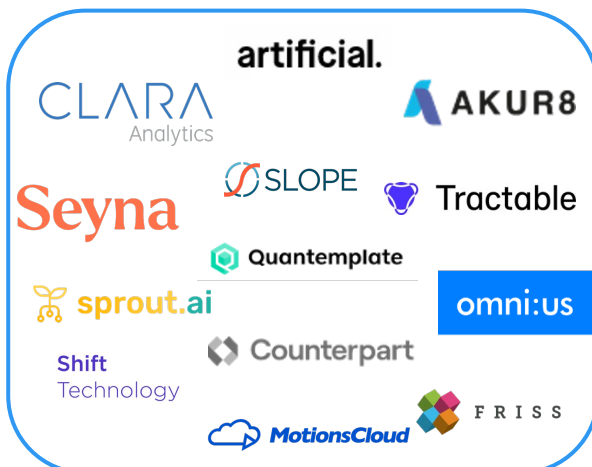
SMB Lending



B2B Payments



InsurTech Tools



Enabling Infrastructure



Top Asset Light Startups



Cloud-native core banking platform designed to identify banking problems.

\$636m raised to date



Billie

Online payments platform designed to expedite B2B invoicing and payments.

\$348m raised to date



SHIFT

Cloud-based security platform designed to improve the insurance claims process.

\$315m raised to date



Cloud-based accounting software designed to make online invoicing easy and secure.

\$314m raised to date



Finance management platform to make business banking easy, fast and transparent.

\$300m raised to date



Real Estate Technology



Real Estate Technology

Proptech has the potential to disrupt one of the world's oldest and largest industries to tackle critical issues related to housing affordability

\$228tn

Value of the global real estate industry, the largest of any asset class

\$19.5bn

Value of the global proptech market

10-20%

Commercial real estate will be repurposed

96,000

New affordable homes need to be built globally every day to tackle the housing crisis by 2030

Real estate technology companies will navigate new challenges in today's difficult macroeconomic climate, housing crisis, and shifting demand patterns. The real estate technology sector currently lags behind many other asset classes in digitalisation. The sector is ripe for disruptive innovation with many intermediaries involved and a noticeable lack of transaction transparency.

Successful proptech startups will find solutions in scaling their operations and achieving vertical integration to deliver a consistent user experience, optimise data utilisation, and streamline transaction processes, all while embracing sustainability as an opportunity for growth.

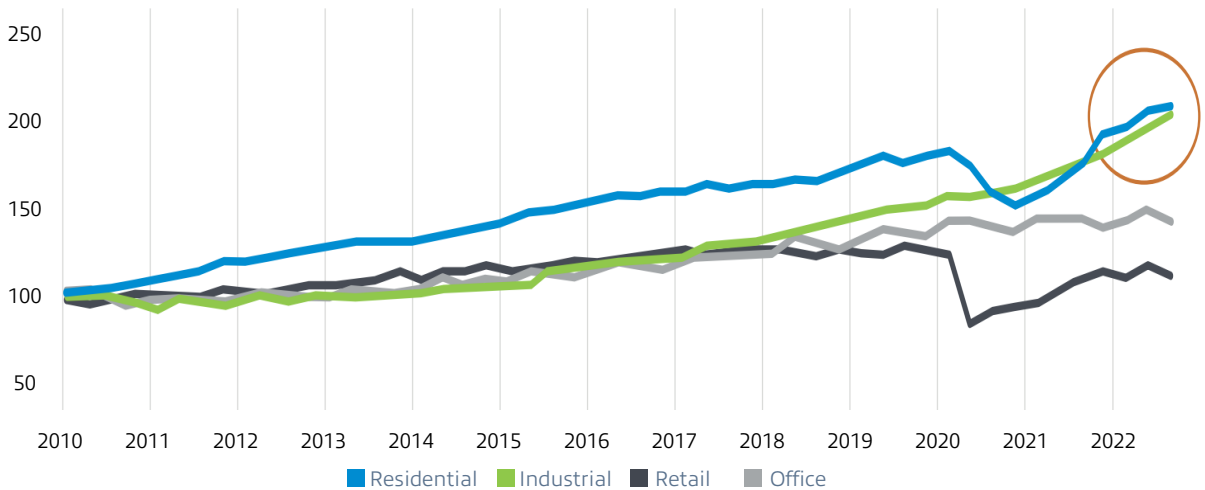
Technology	WSC Score	Notes
Data and Opportunity Discovery	8	Large horizontal market
Agent Tools and Facility Management	8	The need to streamline operation
Transactional Tools	7	Demand for online transaction and adherence to compliance
Investing and Leasing	6	
Design, Engineering and Construction	6	

Market Drivers

The evolving dynamics of supply and demand in the real estate sector present stakeholders with the opportunity to leverage advanced technological tools for enhancing the efficiency and effectiveness of real estate construction, sales, resales, and property management processes

Major Sectors Net Operating Income (NOI) Growth (indexed to 100 in 2010)

Indicating high occupancy and strong rent growth for residential and industrial sectors



Source: National Council of Real Estate Investment Fiduciaries

Affordability and Housing Trends

Migration towards affordable housing is on the rise, and there's a significant demand for innovative policies and technologies to meet this demand efficiently.

However, increasing interest rates offset the positive affordability impacts of any potential decrease in home prices.

In addition, affordability pressures are forcing many potential purchasers to consider renting homes instead of buying, further impacting a constrained supply in the rental market and leading to increasing rents, thereby worsening the affordability crisis.

Supply and demographic change

Housing construction has slowed down since 2022 due to labour shortages and the high cost of borrowing. Alongside the persistent migration trend toward developed countries, there is a supply backlog for construction and property transactions.

Real estate professionals are increasingly turning to innovative technologies to accelerate the speed of construction while also facilitating the simplification of intricate real estate deals, thus ensuring that the industry remains agile and responsive in meeting the ever-growing demand.

Technologies and Subsectors

Data and Opportunity Discovery

Score: 8

The rapid adoption of artificial intelligence and big data enables companies and individuals to analyse vast data quickly. This technology empowers modern real estate developers with tools for immediate market analysis, democratising the industry previously dominated by seasoned investors.

Tailwinds

- + Access to new and unconventional data sources such as resident surveys and mobile phone signal patterns helps leverage more advanced insights
- + Predictive-model outputs can forecast future risks and opportunities in a hyperlocal area

Challenges

- + Building and accessing advanced analytics into a portfolio is time-consuming and costly
- + Progress in AI is frequently exponential, with late adopters possibly failing to integrate it into their business model

Agent Tools and Facility Management

Score: 8

Technological platforms such as property management tools, CRMs, 3D virtual tours, and smart buildings provide agents and property managers with innovative software to streamline operations, enhance customer experiences, and improve overall efficiency.

Tailwinds

- + Data-driven decision-making allows agents to personalise the customer journey
- + Scalability and flexibility of digital tools streamline the adaptation process in an ever-changing industry

Challenges

- + Implementing advanced technological tools often requires a significant upfront investment

Transactional Tools

Score: 7

Digital transactional solutions streamline the transaction process by centralising critical information, enhancing collaboration, ensuring compliance, and enabling accurate data management, which increases transparency in the real estate transaction lifecycle.

Tailwinds

- + Embedded compliance features help adhere to legal requirements and reduce the risk of non-compliance.
- + Remote work pushes transactions to be completed online within a shorter time frame

Challenges

- + Real estate professionals prefer interoperability and a one-stop-shop platform for their transaction needs while avoiding long onboarding and training periods

Technologies and Subsectors

Investing and Leasing

Score: 6

Changing demographic needs have led to the urbanisation of house ownership while short-term and long-term rental platforms have fundamentally transformed cities. Investment and leasing tools allow owners to repurpose their real estate assets.

Tailwinds

- + Population growth creates increased demand for housing, commercial properties, and infrastructure development
- + Sustainability and environmental consciousness is driving demand for energy-efficient, eco-friendly properties, promoting green building practices and technologies

Challenges

- + Interest rates and a volatile macroeconomic environment have decreased customer appetite for real estate.

Design, Engineering, and Construction Technology

Score: 6

Advances in construction technology tools is helping tackle the affordable housing crisis and changing consumer needs with innovations like augmented reality property design, modular building, and robotics, which decrease construction costs and time by automating tasks and minimising labour. Younger generations of homebuyers reflect the demand for homes that suit individual lifestyle needs.

Tailwinds

- + Opportunities are ripe for consolidation in a heavily fragmented, point-solutions-driven market
- + The rise of platform solutions that comprises multiple use cases will increase customer stickiness and revenue

Challenges

- + Lower amounts of investments in digital transformation translate into slower innovation speed
- + Market volatility and supply chain bottle necks can significantly impact the profit margin of Contech companies

Market Map

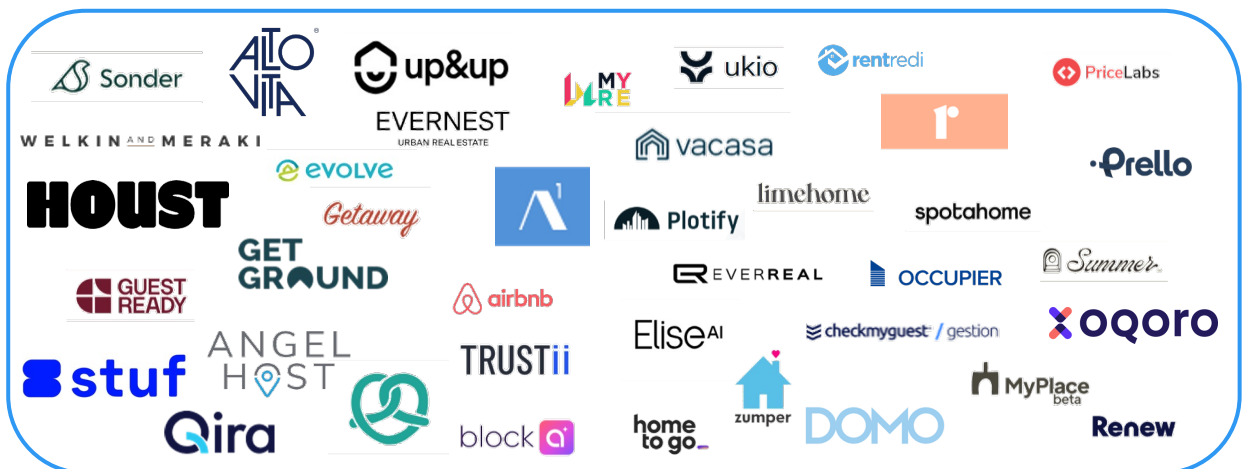
Data and Opportunity Discovery



Design, Engineering and Construction



Investing and Leasing



Transaction tools



Agent Tools and Facility Management



Top Asset Light Startups

COMPASS

Provider of an end-to-end platform that empowers residential real estate agents to deliver exceptional service to clients.

\$2.1bn raised to date



nested

Operator of a real estate platform designed to help in buying and selling homes.

\$232m raised to date



BLOCK

Developer of a streamlined home renovation platform intended to plan, design, and build homes.

\$105m raised to date



Operator of an online property listing marketplace intended for sale and rent.

\$89m raised to date



Developer of a direct channel technology designed to make it convenient for vacation rental marketing.

\$49m raised to date



