High-Tech Industry Digital Services 2021–2022 RadarView – Report Excerpt

Navigating through industry disruption

October 2021

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Executive summary

Key recommendations for high-tech companies

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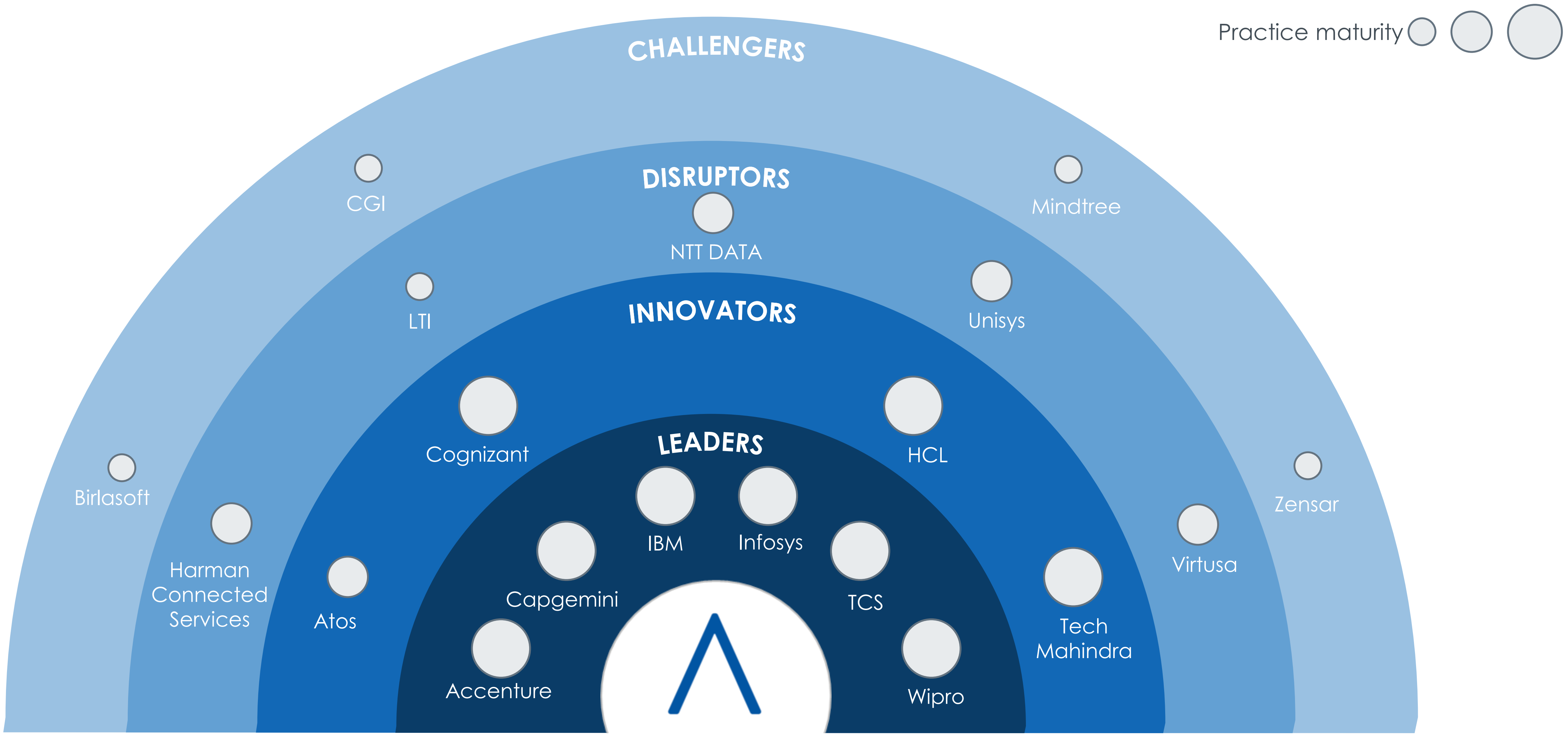
Accelerate Industry 4.0 transition to optimize processes and reduce costs	• Scale up the digitalization of processes across the value chain such as AI (product design), IoT (production), and automation (procurement) to contain costs and drive efficiency. • Leverage next-gen technologies such as immersive reality for remote collaboration and autonomous robots to perform repetitive tasks in order to reduce human dependency and errors.
Chart aggressive investment plans to reduce existing workforces' skills gaps	• Assess workforces' existing skills and map these with required skill sets (which evolve with digital adoption) to identify gaps. • Realign workforce strategies with identified skills gaps and accordingly evaluate partnering with third parties for external training and investment in self-paced learning.
Modify GTM strategy to reimagine customer experiences and expectations	• Analyze the preferences, buying patterns, and demands of customers to provide personalized products (laptops and smartphones) and value-added services (bots for customer services). • Promote "as-a-service" models to reduce financial burdens, provide updated and regular security, and increase the flexibility of devices for managing customer expectations.
Double down investment on AI and automation to mitigate supply chain disruptions	• Leverage AI and predictive analytics to shortlist, identify, and assess the right set of vendors and predict the baseline prices of raw materials to shorten lead times and expedite decision-making. • Deploy AI and automation solutions to manage inventory based on demand forecasting and segregate returned products or their parts under repair, recycle, and repackage.
Assess companies for acquisitions to drive business growth and strengthen digital capabilities	• Acquire specialized companies to broaden product portfolios to align with client requirements, enter adjacent spaces to expand revenue, and reduce external dependencies to reduce lead times. • Partner with or acquire digitally native companies to upgrade offerings for expanding product portfolios (based on verticals) and providing differentiated experiences.

Avasant has recognized 19 top-tier service providers supporting the high-tech industry in digital transformation



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Sample report pages

Semiconductor companies are transforming to meet customer challenges

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The semiconductor shortage has negatively impacted many industries.

GM	Had to halt production for a week in three plants and reduce it by 50% in one assembly plant in Feb 2021.
XBOX	Could not meet a surge in demand for Xbox Series X and S during the pandemic.
ENPHASE	Experienced constraints in the semiconductor supply chain for its microinverter systems.
	Had to slow down the production of iPhones and iPads because of a shortage of legacy nodes.

To resolve challenges such as shortage, long lead times, supply chain disruption, and lack of R&D investments, companies are implementing strategic initiatives.

Investing in US-based manufacturing facilities	intel	Announced an investment of USD 20B for two new chipmaking facilities, called "fabs," at its Arizona campus, thereby shifting some manufacturing to the US.
Acquiring companies for product expansion	AMD	Acquired Xilinx for USD 35B to capitalize on opportunities in high-growth verticals by building a strong portfolio of high-performance processor technologies.
Increasing the production of essential products	tsmc	Increased the manufacturing of automotive semiconductors by 60% in 2021 by enhancing demand visibility through digitalization of the supply chain
Funding AI-based projects to foster innovation	Qualcomm	Launched the Qualcomm Ventures AI Fund with USD 100M to target startups, focusing on next-gen use cases for autonomous cars, robotics, and ML platforms.

The demand for semiconductors will continue to rise; semiconductor companies must monetize this opportunity by evaluating strategies such as acquisitions, partnerships, investments, and digitization.

Sources: Avasant Research, Company filings

High-tech companies are offering "as-a-service" models versus traditional models to reduce complexities and costs

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"As-a-service" models	Summary	Illustrative examples
Device-as-a-service	Leverages cloud platforms to offer smart and customized solutions across smart devices, personal computers, and data centers to boost productivity and control IT-related costs.	Launched Lenovo Device as a Service (DaaS) to manage device life cycles and remote working. (Lenovo)
Desktop-as-a-service	Uses cloud platforms to deliver virtual desktops to end users; used primarily to reduce costs, increase device flexibility, and facilitate remote working.	Launched Windows Virtual Desktop (WVD), through which customers can access enterprise desktop and apps. (Microsoft)
IoT-as-a-service	Provides digital transformation to verticals that are highly dependent on IoT devices such as supply chains, connected spaces, healthcare, manufacturing, and higher education.	Launched the Qualcomm IoT Services Suite, delivering end-to-end solutions for smart cities and smart spaces. (Qualcomm)
Solutions-as-a-service	Integrates pay-per-use cloud services with high performance computing systems to tackle data-intensive workloads, power AI-based initiatives, and create new experiences.	Launched HPE GreenLake Cloud Services, which are fully managed, pre-bundled services that leverage HPC offerings. (hp)

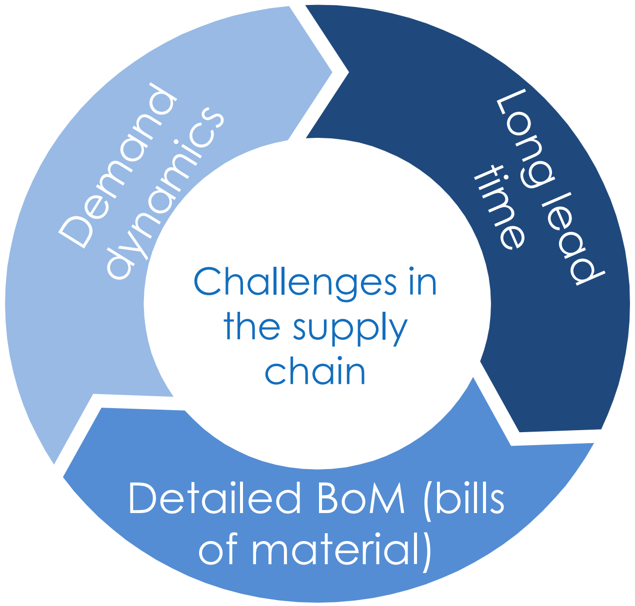
As the adoption of digital workplaces increases, "as-a-service" models are becoming popular as they reduce IT-related costs, provide updated security, expedite deployment, and increase device flexibility.

Source: Avasant Research

Redesign the supply chain for business growth and sustainability

Unpredictable demand for abstract and expensive products

Specialized products needing more time to be produced than actual products



Complicated and detailed list of raw materials and subcomponents

High-tech companies are evaluating their sourcing strategies.

Reducing dependency on one nation	Adopt a “China Plus One” strategy, wherein companies procure from other Asian and European countries with lower operational costs.
Optimizing logistics	Reoptimize inventory levels to mitigate the risks of supply abundance and shortages due to high demand and supply variability.
Global pegging	Plan production operations by pegging the components of orders at the deepest BoM level to get real-time alerts in case of shortages.
Supply chain risk management	Manage risk from unforeseen circumstances such as weather events, labor disruptions, and technology failures by providing real-time alerts.
Demand-driven operations	Redirect supply chain decisions to focus more on the demand side of products to reoptimize inventory levels and maintain cash flows.
Integrated business planning and execution	Sync the demand and supply planning process with the sales and operations planning (S&OP) process to shorten lead times and make accurate sales forecasts.

To hedge supply chain disruptions, high-tech companies must restructure their supply chain priorities to shorten lead times, regularize cash flows, and manage inventory.

Source: Avasant Research

Harness the power of AI and analytics to expedite processes, contain costs, and enhance customer engagement

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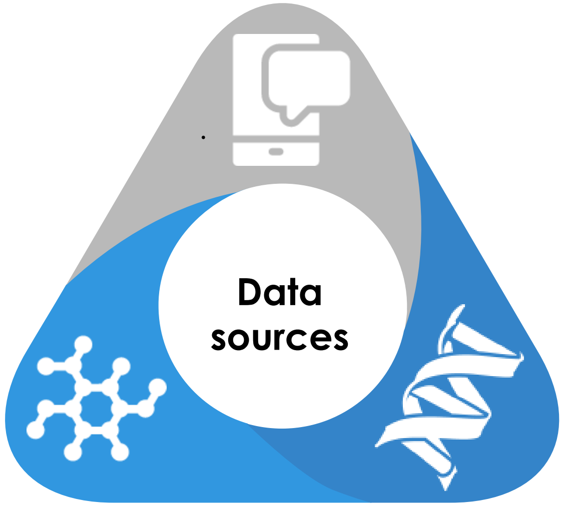
Mine data from various sources . . .

Structured and unstructured data generated from end customers.



Real-time data generated during the product life cycle

Structured data from partners within the ecosystem

. . . to develop predictive analytics and AI use cases to improve the product designing and engineering cycle, manage supply chain disruptions, and elevate customer experience.

Research and product engineering	**Product research and design** • Generate multiple product design options for one product by using ML-based generative designs. • Predict the success of projects during the research and designing phase.	**Product engineering** • Reduce trial-and-error costs and expedite time to market by creating several simulations and tests in the preproduction phase. • Deploy robots for hazardous and labor-intensive jobs.	**Quality assurance** • Detect differences between new and usual products by leveraging machine vision. • Trigger alerts during the production process in case of low quality to make relevant adjustments.
Supply chain management	**Sourcing of raw materials** • Predict material prices and build baselines for price comparisons across suppliers. • Help procure materials by understanding contexts, identifying patterns, and unifying information.	**Inventory and order management** • Identify optimal inventory levels at warehouses and stores through demand forecasting. • Manage different omnichannel order complexities via AI-based order management.	**Last mile delivery & return management** • Analyze and optimize logistics networks through real-time tracking of delivery vehicles. • Determine decision-making of returned products under repair, repackage, and recycle categories.
Customer engagement	**Personalized communication** • Deploy AI-based bots to answer product-related queries, provide personalized recommendations, and assist in decision-making. • Send personalized alerts for products by analyzing customer behavior and preferences.	**Customized products & services** • Modify the designs of products and services to incorporate customers' specific desires.	**Value-added services** • Sync with health-related wearables and devices to analyze and suggest health-related recommendations. • Provide complimentary software updates and enhanced features and trigger alerts for cyber-related threats.

Increased investment in AI-based predictive analytics will enable high-tech companies to resolve crucial business challenges such as long lead times, outdated product designs, defective products, supply shortages, and long wait hours for customer services.

Source: Avasant Research

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