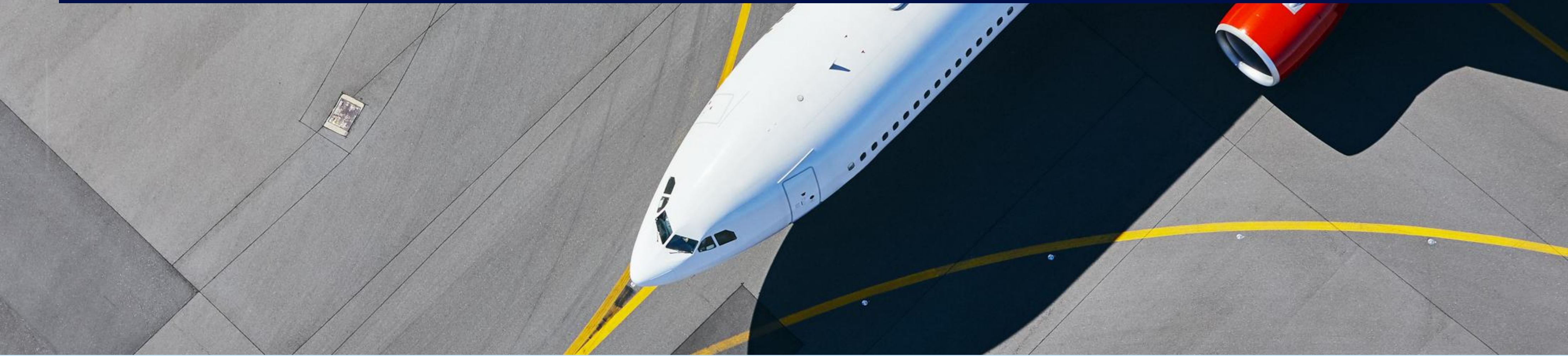


Aerospace and Aviation Supply Chain

Marsh Aviation Summit 2026

Navigating tomorrow's
aviation challenges



Agenda

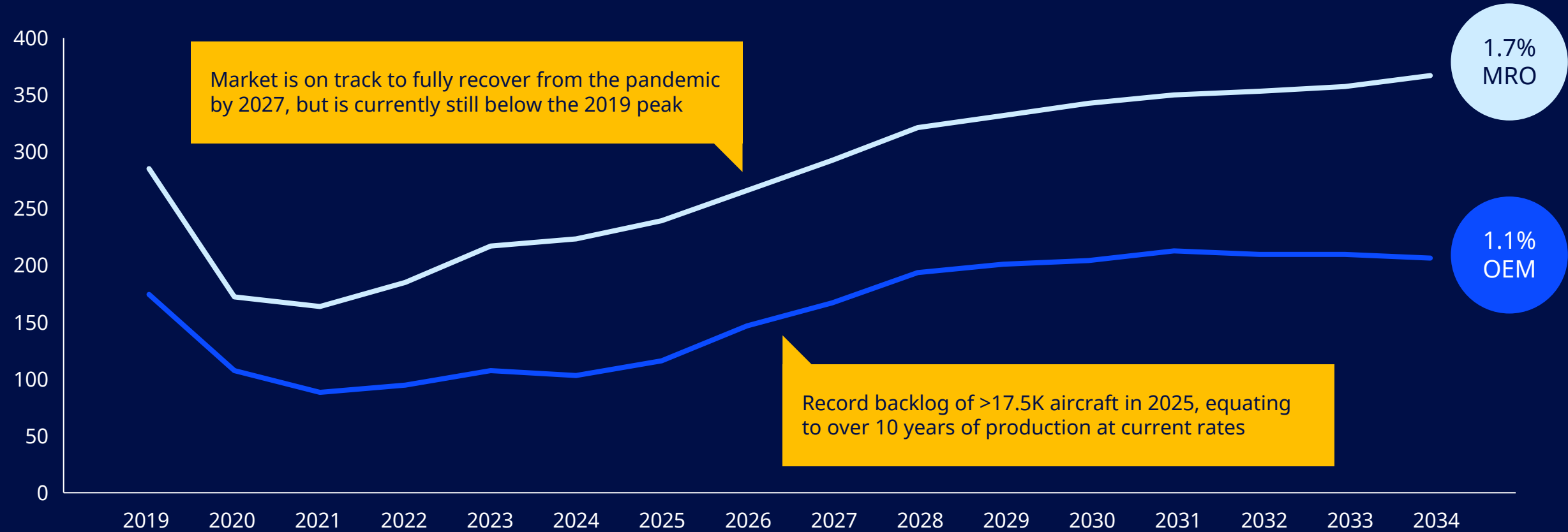
1. The macro supply chain landscape (IATA and OW report)
2. Deep dive on aerospace supply chain risks using Sentrisk insights
3. Call to action

Supply chain dynamics

01

The commercial aerospace market is rebounding, but record backlogs and limited production are keeping older, less efficient aircraft flying longer

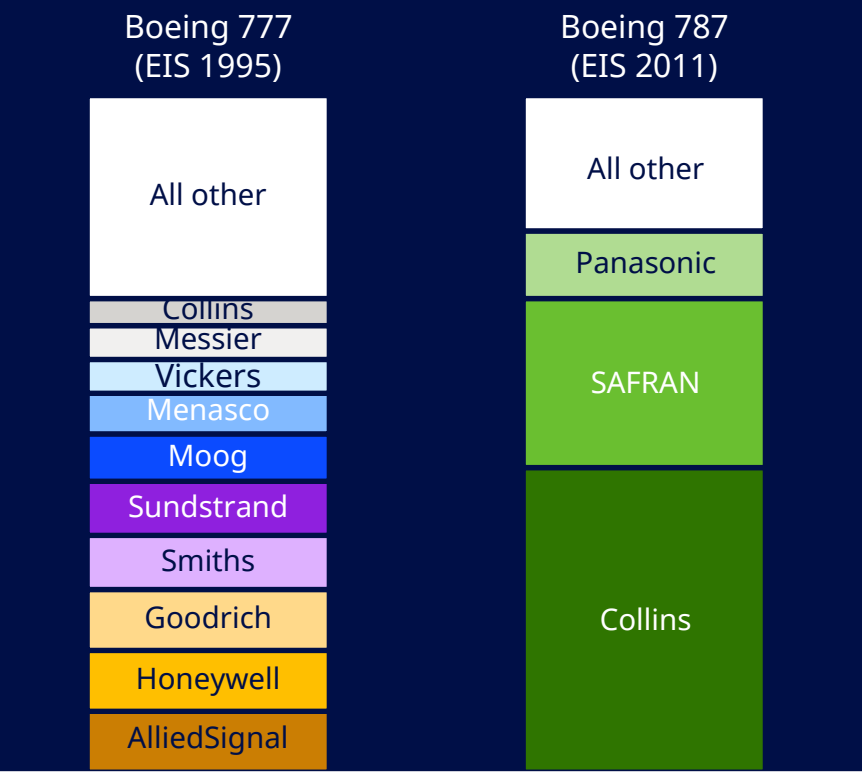
Global commercial aerospace market value
\$US BN, 2019 – 2034F



Source: Reviving the Commercial Aircraft Supply Chain (Oliver Wyman)

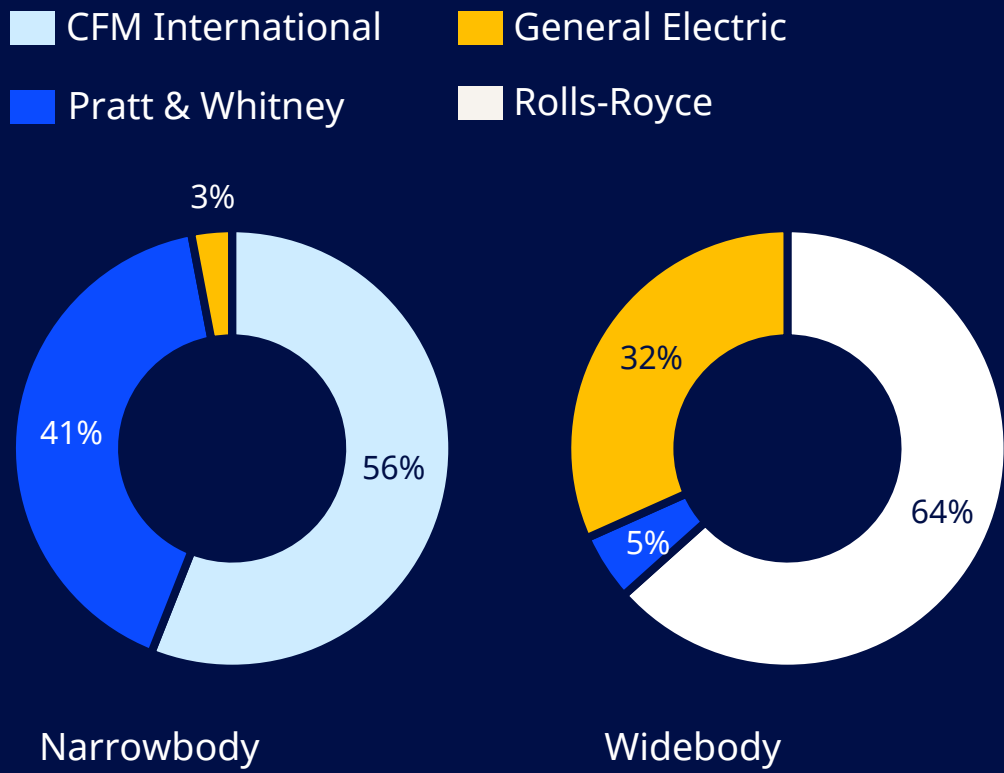
The commercial aerospace supply chain has become increasingly consolidated across airframe, engine and components

Component MRO spend for the B777 vs. B787
% of spend by component OEM



Source: Reviving the Commercial Aircraft Supply Chain (Oliver Wyman)

Narrowbody and widebody new build turbofan engine market
% share by OEM, 2024



The aerospace supply chain is structurally fragile, built on a highly consolidated, aftermarket-dependent model with growing labour constraints

Key challenges for commercial aerospace market

Challenges to aftermarket dynamics

OEM increasing focus on aftermarket creates a more challenging low-competition model for airlines

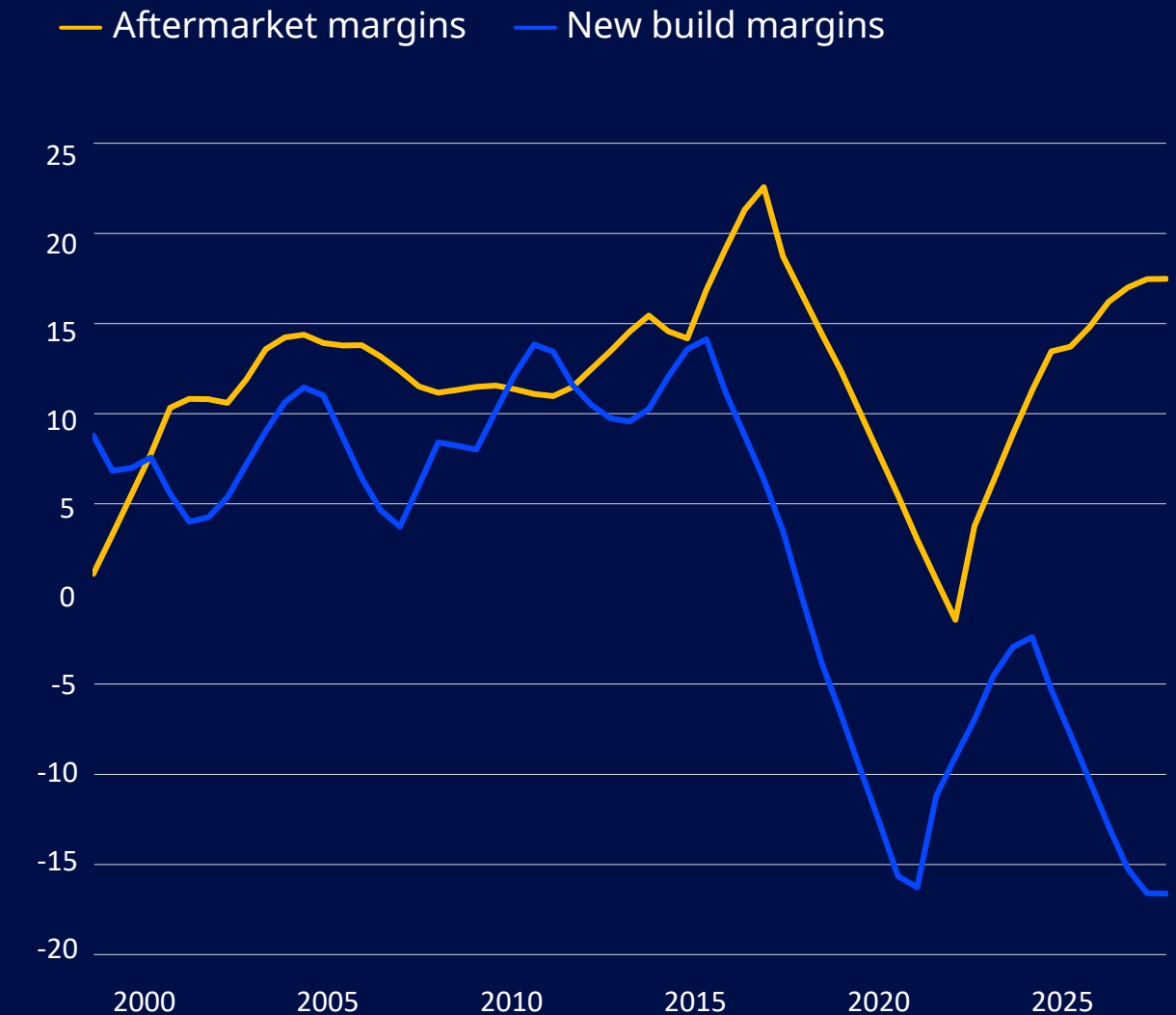
Supply chain disruptions

Overlapping disruptions are constraining capacity growth and slowing recovery across the supply chain

Labour and skill constraints

Growing maintenance labour shortage is increasingly constraining industry capability and productivity

Indicative airframe OEM operating margins %, 2000-2024



Ongoing supply chain challenges are translating into significant additional airline costs, increased operational disruptions and higher industry emissions

Financial impact (\$b)

~\$4.2

Delayed fuel efficiency
Flying older aircraft for longer than planned drives materially higher fuel burn

~\$3.1

Additional maintenance
Ageing fleets plus teething issues on new engines increase MX frequency/complexity

~\$2.6

Excess engine leasing
Extended turnaround times due to parts/labour shortages require additional spares

~\$1.4

Extra inventory holding
Material constraints & geopolitical shocks require more spares to buffer parts supply

+

Operational impact
More frequent and longer grounded aircraft and last-minute part sourcing increases operational disruptions

Sustainability impact
Slower fleet renewal keeps legacy aircraft flying, adding ~17 million tonnes of avoidable CO₂ in 2025

Supply chain challenges have led to ~\$11B in incremental costs, as well as additional operational and sustainability impacts

Rebalancing incentives, opening up capacity/competition, and collaborating on data & talent enables a more resilient commercial aerospace supply chain

	Increase collaboration on best practices, promote resiliency	Build end-to-end supply chain visibility	Leverage data & predictive MX	Expand repairs and use alternative parts	Invest in the workforce
Description	OEMs to set realistic run rates, and provide early constraint warnings; airlines to share best practices and standardise documentation	Map all tiers and logistics; monitor OEM support agreements; use digital tools for track-and-trace and risk mapping	Leverage fleet data for predictive maintenance/ virtual parts pooling; support open data initiatives to improve forecasting & part access	Accelerate development and approval of repairs; increase use of PMA/User Serviceable Material; harness additive manufacturing	Modernise training, capture knowledge from retiring experts, diversify talent pipelines, and consider industry-wide campaigns
Example	Multi-airline parts pooling agreement to share critical spares and reduce AOG risk	Smart contracts to track source of parts and automate supplier performance triggers	AI-driven predictive maintenance engine that optimises reorder points and spare allocation	USM + PMA strategy with independent MROs to unlock alternate repair & parts capacity (e.g., Lufthansa/Chromalloy JV)	VR-based technician training program co-designed by OEMs, airlines, and MROs

Aviation Sentrisk Data Insights

02

Sentrisk analysis of over 24,000 unique aerospace suppliers

963

Tier 1 sites

20,128

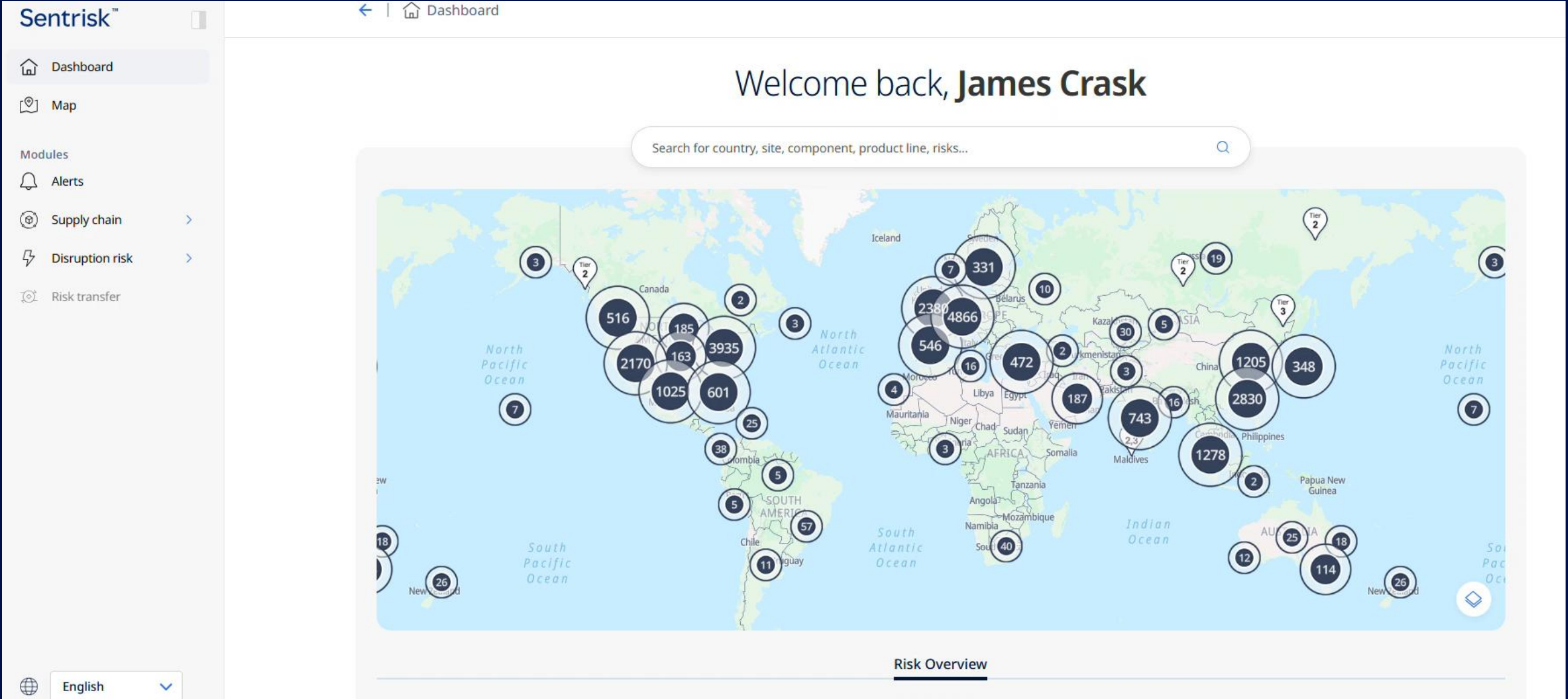
Tier 3 sites

10,096

Tier 2 sites

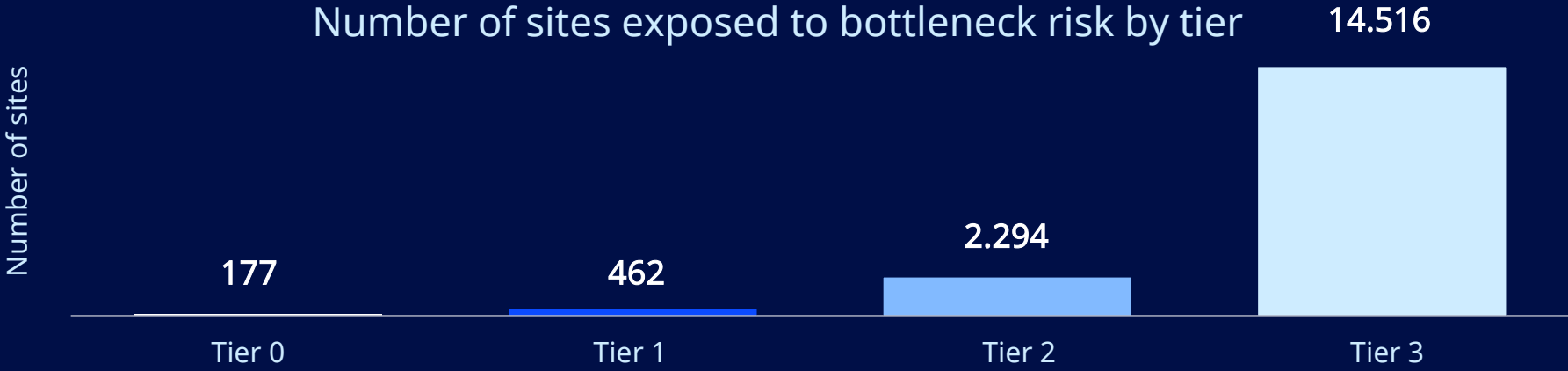
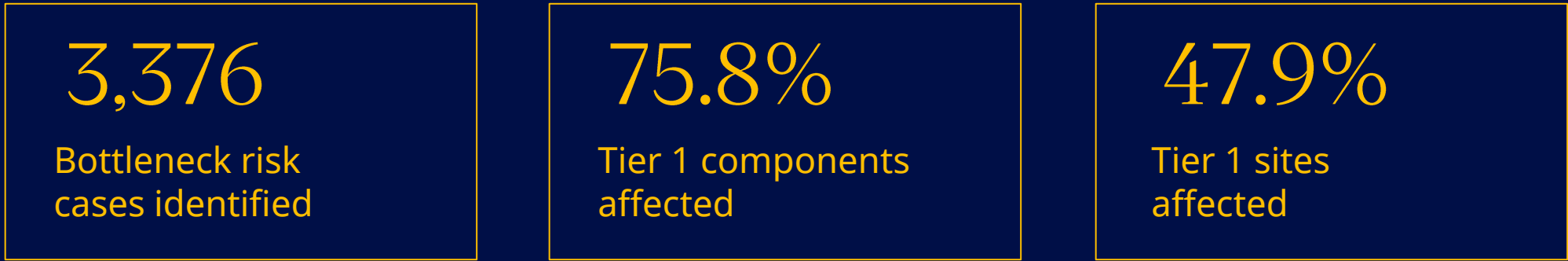
152

Unique components



Bottlenecks are common in aerospace supply chains, we identified 3,376 cases in our sample

Risk summary



Highest risk components by supply chain Tier

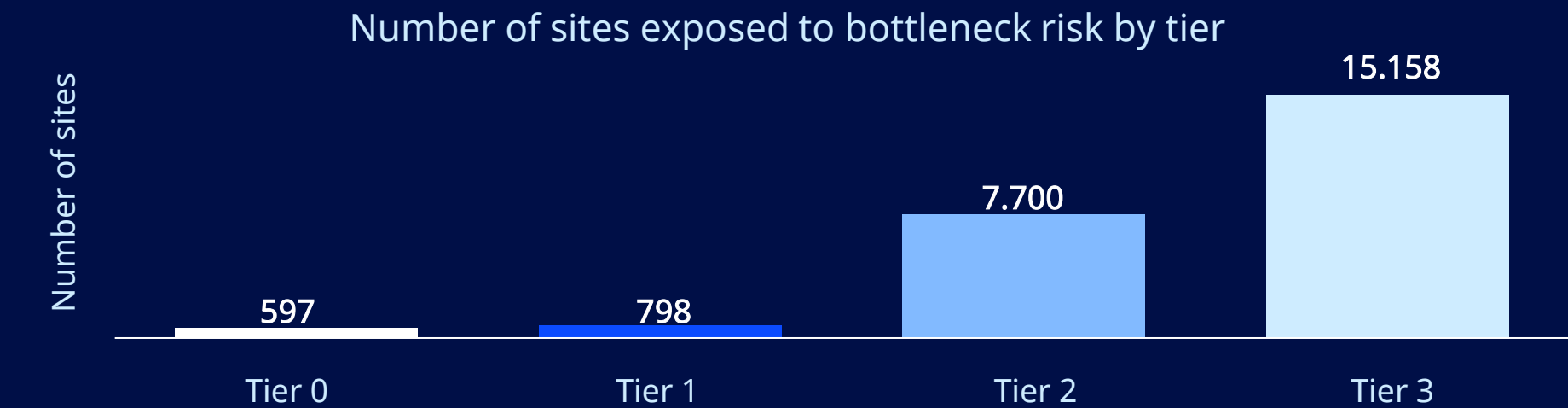
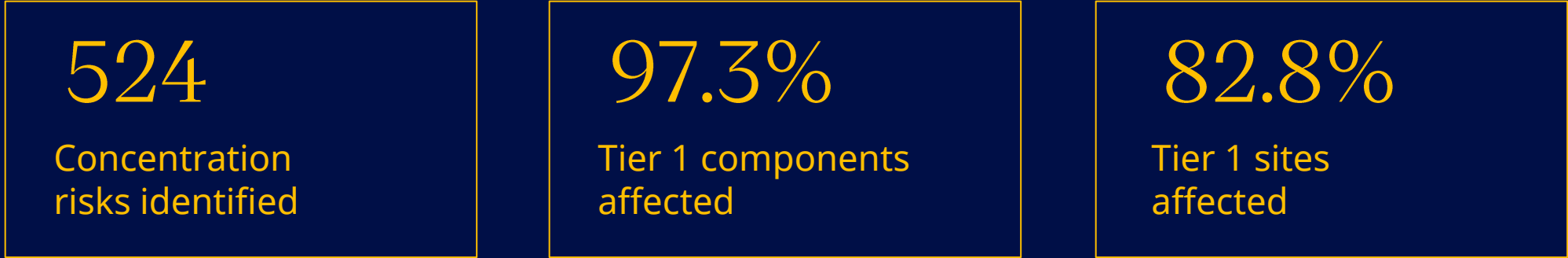
Aluminum	Insulating fittings	Glass
Tubing	Electrical capacitors	Titanium
Silicones	Optical fibers	Metal components
Copper	Fin/Rudder	Aircraft launching gear
Ball or roller bearings	Visual signaling equipment	Air conditioning machines

Why does this matter?

- Bottlenecks create single points of failure
- Most are hidden upstream in the supply chain
- Disruption can occur without much warning

Concentration risks occur when multiple suppliers are in the same area and can be the source of asymmetric impacts

Risk summary



Highest risk components by supply chain Tier

Iron or steel	Boards and panels	Boards and panels
Boards and panels	Measuring instruments	Metal base mounts
Consoles	Regulating or controlling instruments	Electrical apparatus
Controlling instruments	Monitors and projectors	Insulated wires
Metal base mounts	Seats	Aluminum

Why does this matter?

- Concentration risks help to create supply chain efficiencies
- But, the risks that impact on a single geographical area can have outsize impacts
- Natural hazard events and geopolitical risks can lead to widespread impacts

Case study

Suppliers in the Middle East region have an outsized impact relative to their overall number, with many exposures hidden in upstream supply chains

Data from our AI powered supply chain platform Sentrisk™

1.2m

Supplier sites analysed

2%

Of these suppliers are in the Middle East

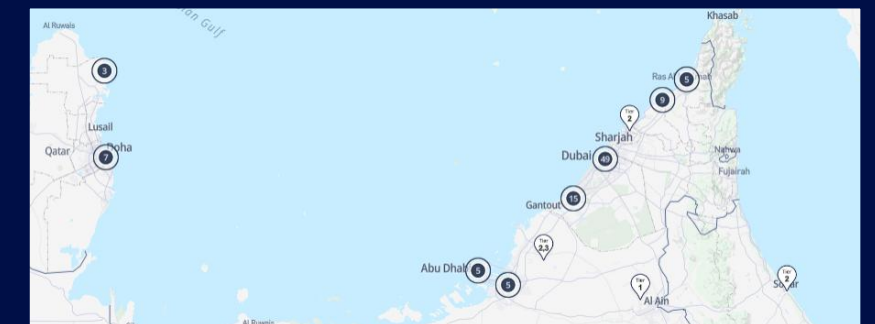
76%

Are found at Tier 3 in the supply chains we analysed

Top comments

- Chemicals
- Plastics
- Precision instruments
- Machinery
- Electrical parts
- Aluminium

From our aerospace sample



Concentrations are found across the globe, and often intersect broader geopolitical risk concerns (1/2)

Poland



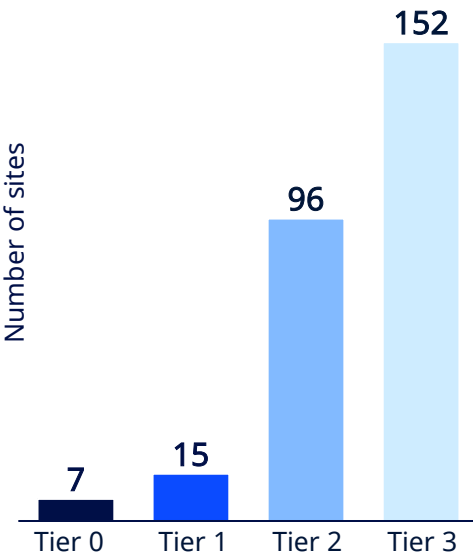
184

Supplier sites identified

Map of suppliers



Number of sites by tier



T1 components produced



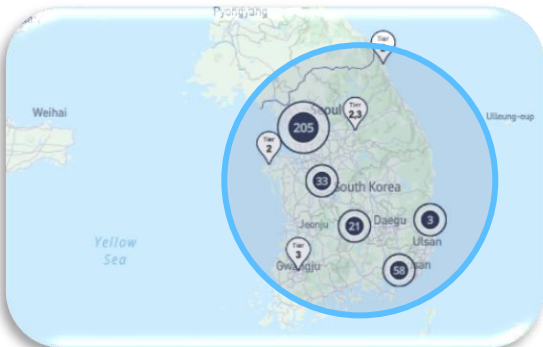
South Korea



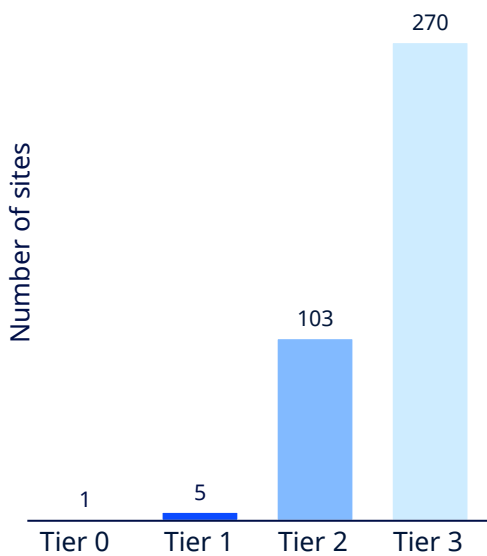
324

Supplier sites identified

Map of suppliers



Number of sites by tier



T1 components produced



Concentrations are found across the globe, and often intersect broader geopolitical risk concerns (2/2)

China

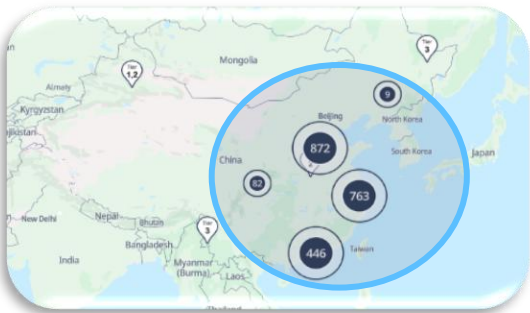
There is a heavy dependence on China across a broad range of components.
Of particular risk are certain rare earth metals where alternatives and processing capacity is hard to source

2,176

Supplier sites identified

- 44 Tier 1
- 920 Tier 2
- 1,775 Tier 3

Map of suppliers



Taiwan

The significance of the semi-conductor industry in Taiwan is well documented and would have a profound impact should a disruption occur

685

Supplier sites identified

- 4 Tier 1
- 267 Tier 2
- 595 Tier 3

Map of suppliers



Russia

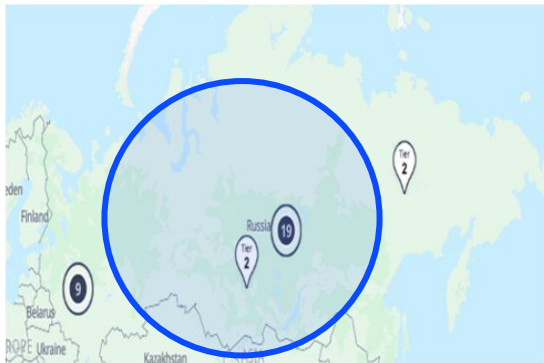
The extent of Russian supply chain reliance is less than what it was demonstrating a move away from Russian suppliers post Ukraine War

30

Supplier sites identified

- 1 Tier 1
- 19 Tier 2
- 23 Tier 3

Map of suppliers



Natural hazard risks are present across the supply chain network creating significant exposures relating to flood and earthquake

Risk summary

722 XR

Your overall natural hazard XR2

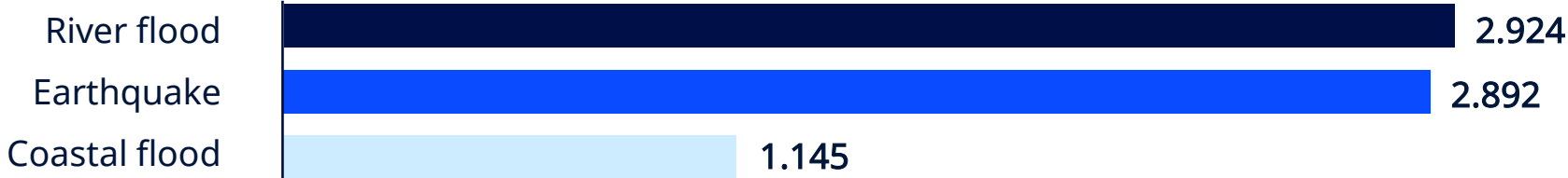


River flood
Highest natural hazard risk

Top 5 countries with highest natural hazard risk scores (>700 XR)

		# suppliers	T1 suppliers affected
	USA	1,232	109
	Taiwan	552	100
	Japan	336	101
	Hong Kong	261	100
	China	223	106

Top natural hazards and suppliers impacted



Suppliers exposed to high natural hazard risks appear in all continents



Call to action

03

Rebalancing incentives, opening capacity, collaborating on data & talent, and improved upstream mapping, enables a more resilient commercial aerospace supply chain

Oliver Wyman & IATA collaborated to write a thought leadership piece on the commercial aircraft supply chain, which formed the basis of this presentation



Reviving the Commercial Aircraft Supply Chain
October 2025

Increase collaboration on best practices, encourage resiliency

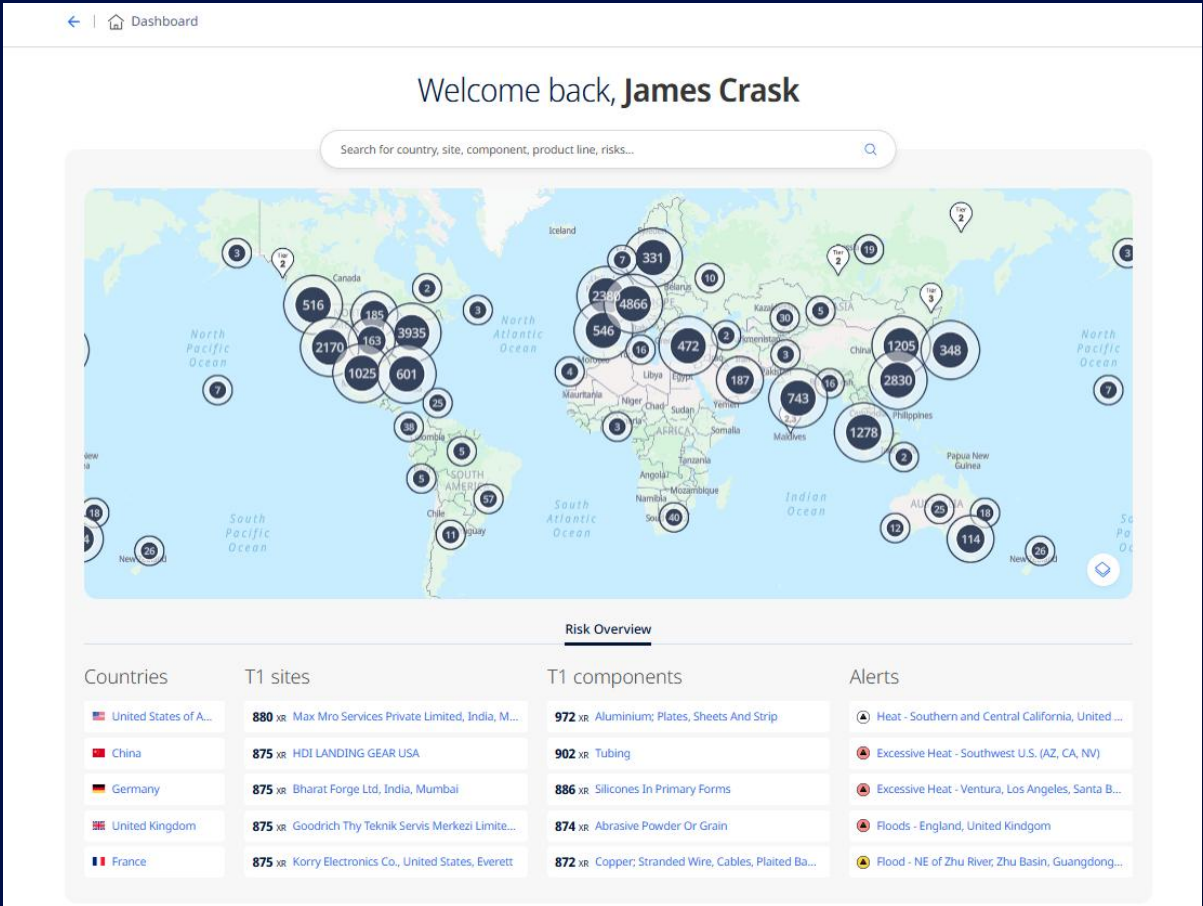
Build end-to-end supply chain visibility

Leverage data & predictive MX

Expand repairs and use alternative parts

Invest in the workforce

Use Sentrisk to deliver upstream supply chain mapping and risk assessment bespoke to you



Thank you