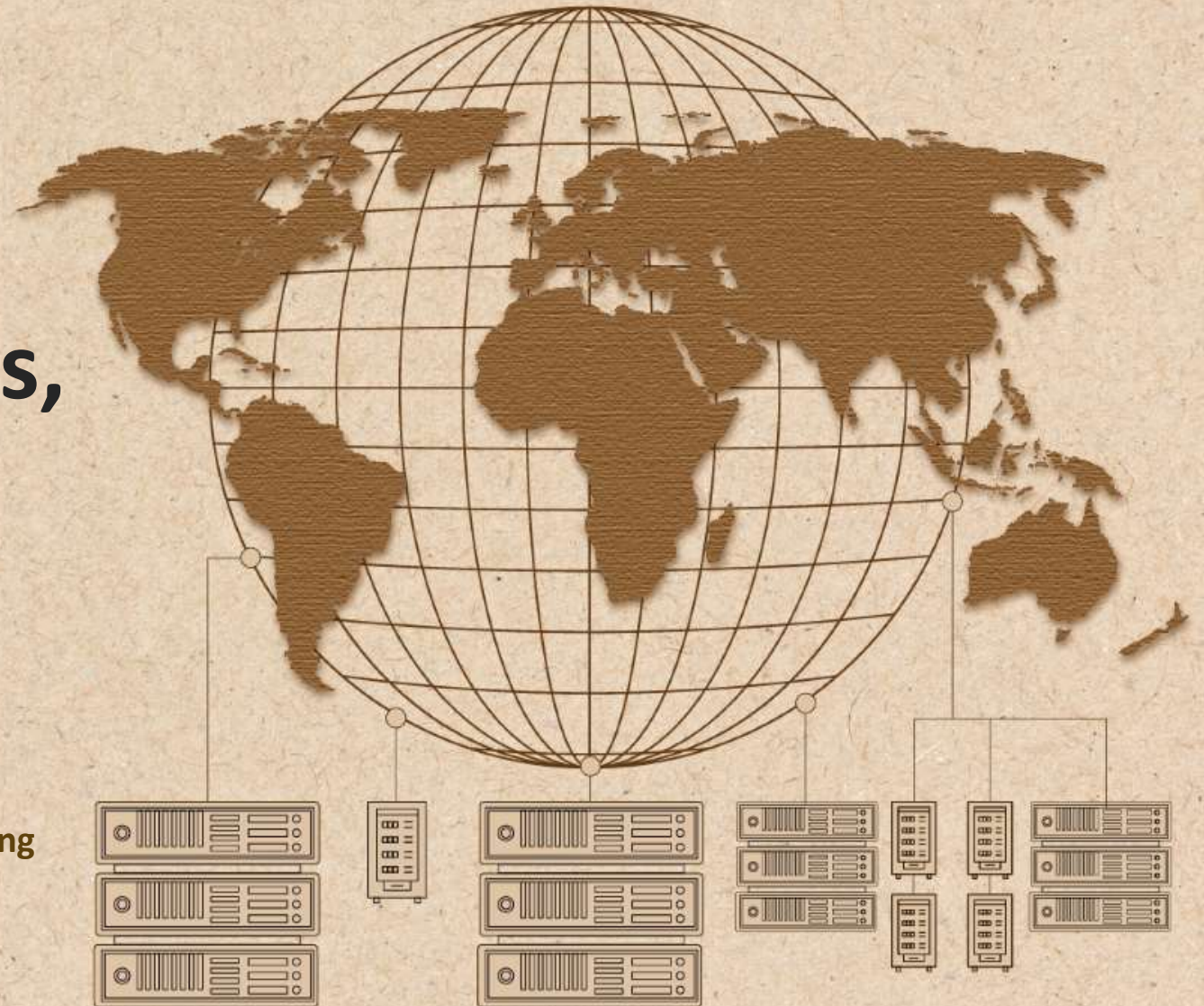


Global server supply chain status and analysis, 2023-2025: Top-6 EMS providers

Yen Chou, Kaylee Chiu, Nick Chen, Ricky Tu, and Chiawen Chang

DIGITIMES Research

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EXECUTIVE SUMMARY

The rise in artificial intelligence has led to a heightened demand for AI servers, with the importance of these systems becoming more pronounced due to geopolitical tensions that are impacting supply chains. Taiwanese firms dominate the electronic manufacturing services sector, accounting for 80% of shipments, which underscores their critical role in production logistics.

DIGITIMES analyzed production sites and supply chain relationships for major Taiwanese and Chinese EMS providers, concentrating on assembly levels L6 and L10-12. Key companies examined include Foxconn (Hon Hai), Wistron, Wiwynn, Quanta, Inventec, Mitac, and LCFC (Lenovo), reviewing over 500 server supply chain records from the past three years.

The report provides a comparative analysis of EMS companies' factories, illustrating upstream and downstream relationships. It highlights trends, including the manufacturing of upstream components in various regions before converging in Mexico for assembly, with final exports directed to the US.

This report aims to analyze component sources, EMS manufacturing sites, and end customer locations to understand how market changes and geopolitical factors are reshaping supply chains and to forecast future trends.

周延

Yen Chou

Analyst

Supply chain



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1. Research background and scope

As large language models proliferate, the global demand for servers, particularly those optimized for AI, is growing. However, increasing geopolitical awareness and the effects of renewed tariff policies are prompting a significant reshuffle in the global server supply chain. Server electronic manufacturing services (EMS) are especially affected by these changes, as they face diverse demands from customers across various markets. From a supply chain perspective, DIGITIMES explores the current dynamics and key features of the six leading server EMS providers, while also considering potential future shifts amid tariff and geopolitical challenges.

Definition of supply chain

The report gathers supply chain data from the end of 2022 to early 2025 for each manufacturing entity, focusing on key components such as thermal, network communication, PCB, power, semiconductor, machinery parts, materials, and equipment. This analysis excludes "indirect suppliers."



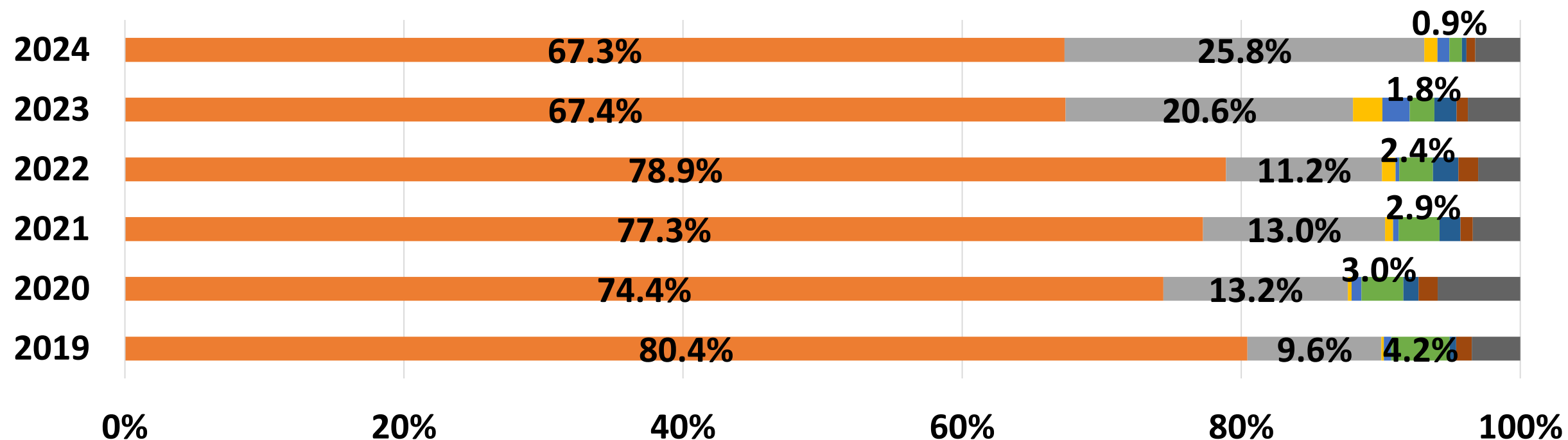
Methodology

- The report examines EMS providers involved in server production stages L6 and L10-12, focusing on six major Taiwanese manufacturers: Foxconn, Wistron, Wiwynn, Quanta, Inventec, and Mitac.
- Considering the ongoing global supply chain shift and US-China trade policies, which have prompted a supply chain division serving US and Chinese server customers separately, the report includes LCFC, a Chinese EMS subsidiary of Lenovo Group.

Mexico leads US server imports as Taiwan's share grows; China's falls below 1%

US server import source, 2019-2024

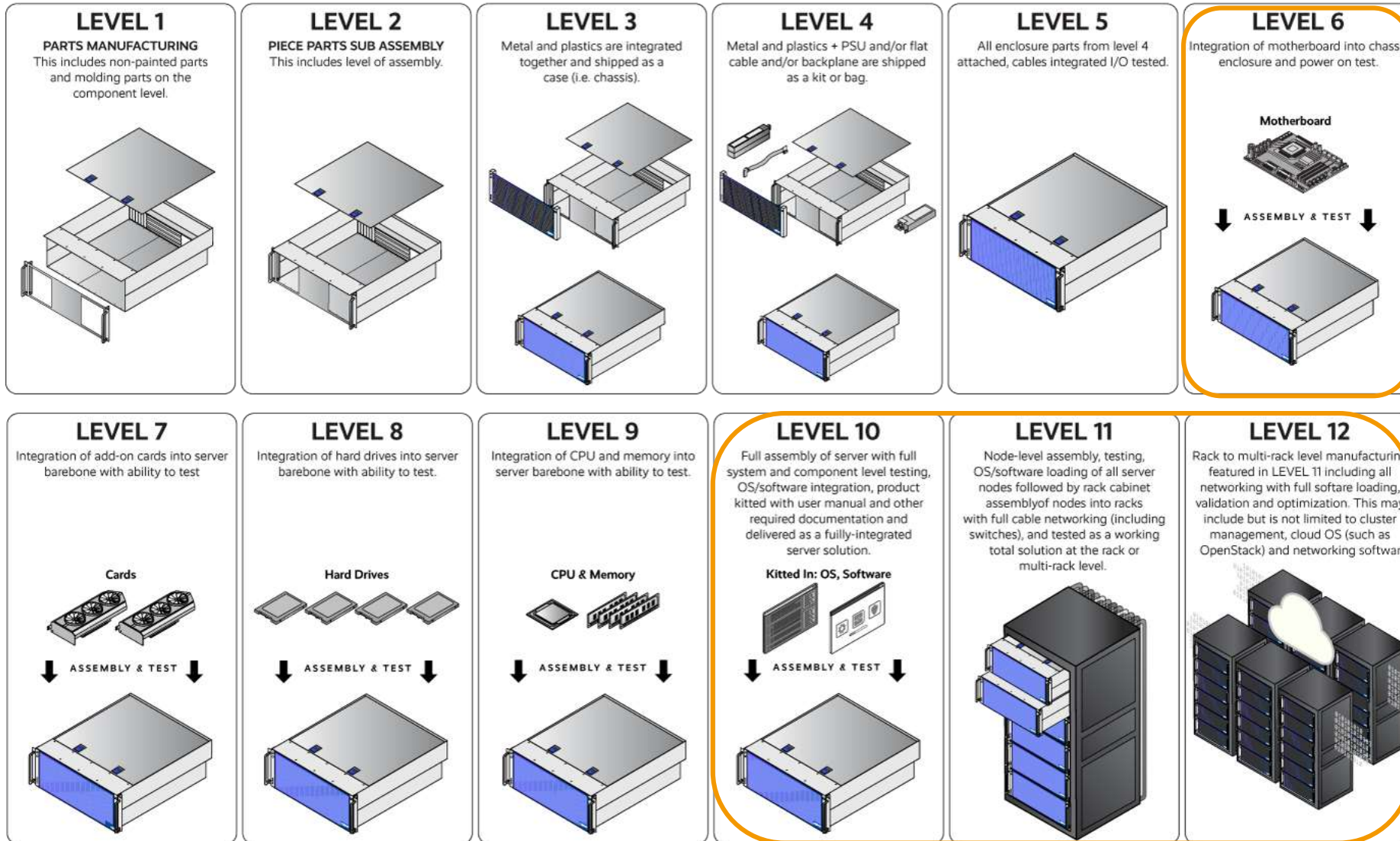
■ Mexico
 ■ Taiwan(ROC)
 ■ Thailand
 ■ Netherlands
 ■ China
 ■ Malaysia
 ■ Germany
 ■ Others



Year	2019	2020	2021	2022	2023	2024
US server imports (US\$b)	31.36	32.06	32.73	42.67	37.06	61.76

Source: ITC, US Trade; DIGITIMES, March 2025

Typical server assembly process and focus of the report



Server assembly is typically divided into 12 processes.

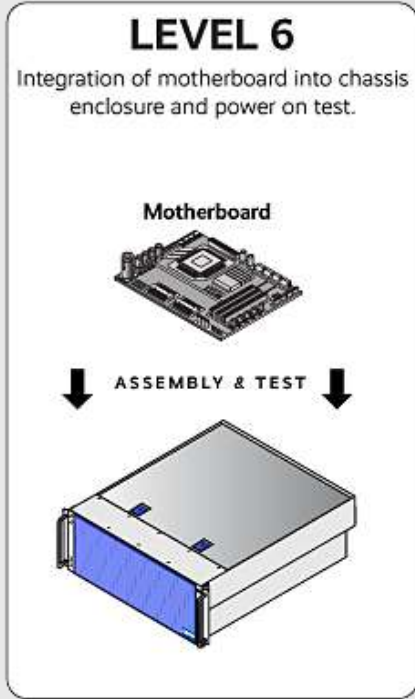
This report focuses on Taiwanese and Chinese server EMS providers in the two major production phases of L6 and L10-12.



- The report defines upstream and downstream vendors by their shipment relationships with server manufacturers.
- Only direct vendors are included.

Server assembly process

L6 - module level



CPU+
accelerator
module

Peripheral
boards

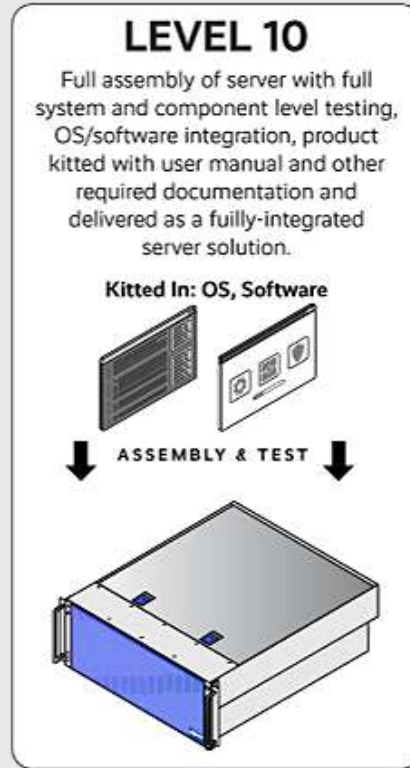
MB

Networking



L7-L9:
CPU\GPU,
HDD, memory,
other parts

L10 – system level



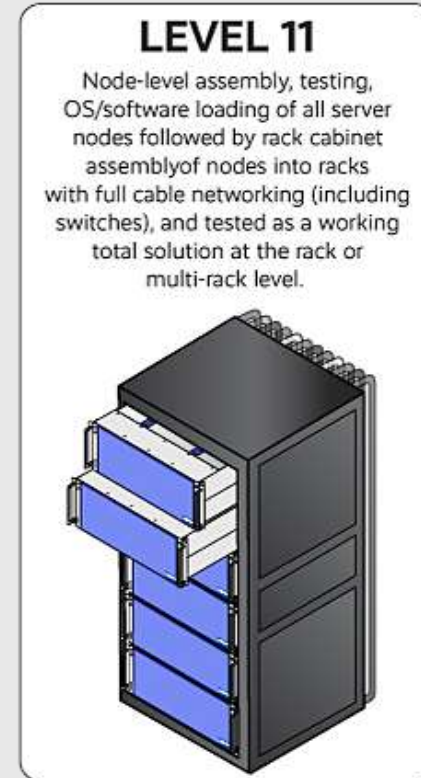
Compute
system

AI Server
system

Switch
sub-system

Mechanical
& cooling

L11 – rack level



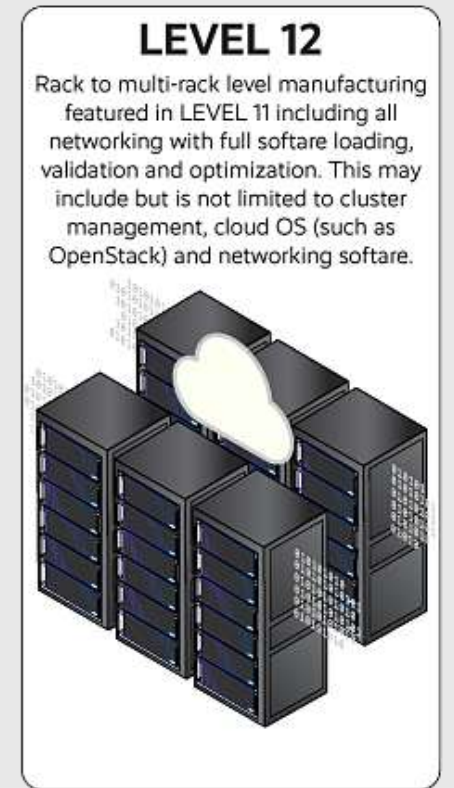
Compute
rack

Power shelves
& cable

AOC
& transceivers

Other
switch

L12 – multi-rack level

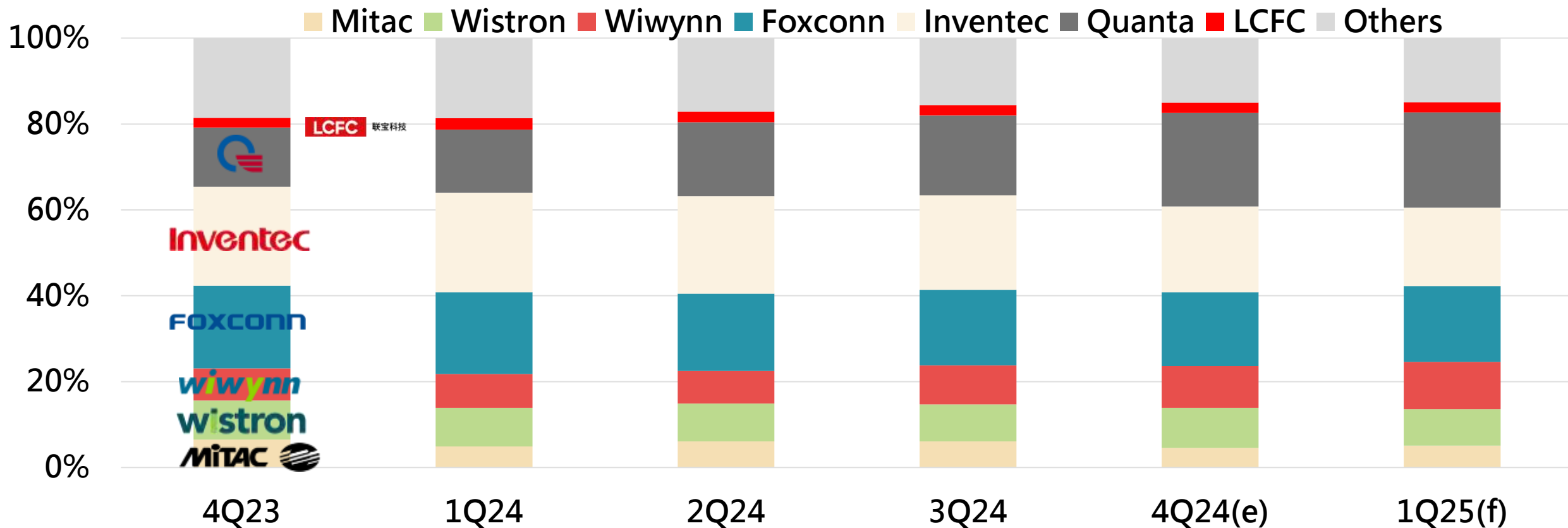


Accelerator
cluster

Optical cables
& transceivers

Taiwanese server EMS companies continue to expand their market share

Global server shipment share by EMS provider, 4Q23-1Q25



Quarter	4Q23	1Q24	2Q24	3Q24	4Q24(e)	1Q25(f)
Shipment (k units)	3,300	3,157	3,418	3,576	3,578	3,433

Note: The shipment volume is estimated based on the number of motherboards.

Source: DIGITIMES, March 2025

Foxconn server production bases in Asia

Location	Manufacturing entity	Year of establishment and expansion	Server production stage
Hukou, Hsinchu; Luzhu, Taoyuan; Dayuan, aoyuan	Ingrasys Technology Inc	<ul style="list-style-type: none"> • 2012: Dayuan • 2019: Luzhu • 2022: Hukou 	<ul style="list-style-type: none"> • L6 • L10-12
Bac Giang, Vietnam	Công Ty TNHH Precision Technology Component Fulian	<ul style="list-style-type: none"> • 2023 • 2024: land lease and factory expansion 	<ul style="list-style-type: none"> • L6 (f) • L10-12 (f)
Singapore	Cloud Network Technology Singapore Pte Ltd	<ul style="list-style-type: none"> • 2017 	<ul style="list-style-type: none"> • L6 • L10-12



Lenovo server production bases in China

Location	Manufacturing entity	Year of establishment and expansion	Server production stage
Hefei, Anhui, China	LCFC (Hefei) Electronics Technology Co., Ltd.	<ul style="list-style-type: none">• 2011	<ul style="list-style-type: none">• L6• L10-12
Shenzhen, Guangdong, China	Lenovo Systems Technology (Shenzhen) Co Ltd Lenovo Information Products Shenzhen Co Ltd	<ul style="list-style-type: none">• 2023	<ul style="list-style-type: none">• L6• L10-12
Sichuan, Chengdu, China	Lenovo Chengdu Electronic Technology Co Ltd	<ul style="list-style-type: none">• 2010	<ul style="list-style-type: none">• L10-12 (f)

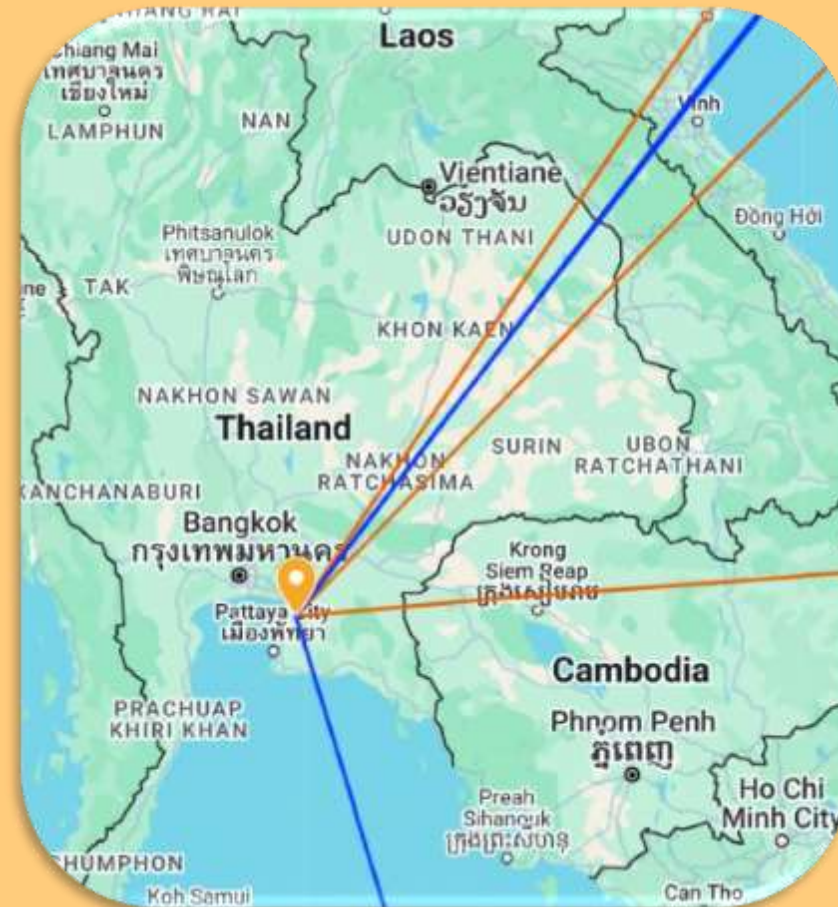
Note: This report analyzes the supply chain of LCFC (Hefei) Electronics, a Lenovo Group subsidiary in the server EMS business.

Source: Lenovo and media reports; DIGITIMES, March 2025

Basic information about Quanta's server factory in Thailand

Qmb Co Ltd

- Location: Ban Pueng District, Thailand
- Establishment: 2019
- Capital increase: Capital increased by THB2 billion (US\$59.3 million) in 2020, increased by THB850 million in 2024
- Products: NB, PC, PoS, motherboard for L6 server



Supply chain partners of Quanta's server factory in Thailand



Supply chain map for Quanta's server factory in Thailand

Red line: upstream suppliers **Blue line: downstream customers** **Yellow dot: affiliates**



China key supply hub for six major server EMS players

Number of facility

Location	Wistron	Wiwynn	Quanta	Mitac	Inventec	Lenovo	Foxconn	Total
China	34	24	13	5	14	17	57	160
Taiwan	13	8	7	2	4	1	13	48
Vietnam	6	3	4	1	3		10	27
India		2	1	1	5		9	18
Philippines	4	1	2	3	3		5	18
Singapore	1	1			4		7	13
Mexico	7		1				3	11
US	7						4	11
Thailand		2	2			1	2	7
Japan	3						2	5
Malaysia	1	1				1	2	5
South Korea					1		2	3
Indonesia				2				2
Germany					1			1
Slovakia			1					1
UK			1					1
Costa Rica					1			1
Total	76	42	32	14	36	20	116	336

The Taiwanese server EMS in Mexico sources materials from the Asia-Pacific, assembles them locally, and ships to the US.

Supply chain map of Mexican factories of Foxconn, Wistron, Wiwynn, and Inventec



Appendix

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[Disclaimer](#)



OUR TEAM

Yen Chou
Analyst
Supply chain



Chiawen Chang
Analyst
Supply chain



Ricky Tu
Analyst
Supply chain



Kaylee Chiu
Analyst
Server & component



Nick Chen
Analyst
Server & component



About DIGITIMES Research

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Contact Us

For any inquiries, feel free to contact us. We're here to help!

Service hours: Mon - Fri, 09:00-18:00 (UTC+8)
TEL: +886-2-8712-5398

Fax: +886-2-8712-3366
Email: subscription@digitimes.com

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