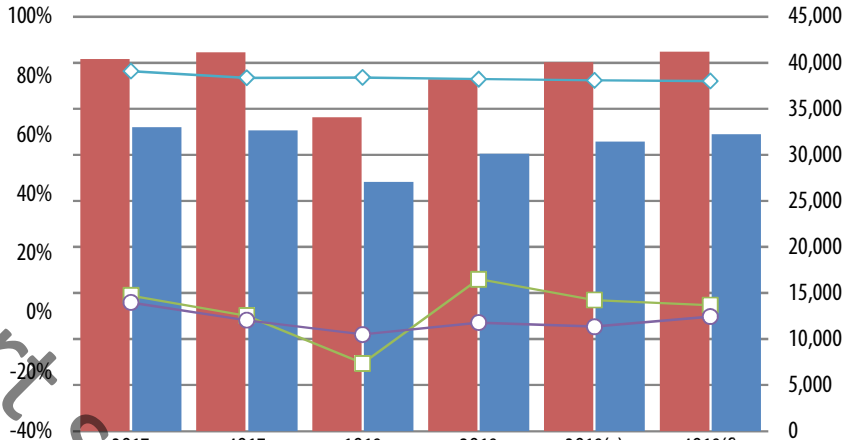
DIGITIMES Research: Mobile Device Tracker – 3Q 2018

Taiwan notebooks

Original Chinese: Jim Hsiao, DIGITIMES Research, October 2018
English edition: Joseph Tsai, DIGITIMES, November 2018

Introduction

Chart 1: Notebook shipments, 3Q17-4Q18 (k units)



	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
Shipments	32,990	32,659	27,071	30,145	31,440	32,240
WW Shipments	40,424	41,149	34,072	38,207	40,056	41,189
Q/Q	5.8%	-1.0%	-17.1%	11.4%	4.3%	2.5%
Y/Y	3.5%	-2.5%	-7.4%	-3.3%	-4.7%	-1.3%
WW share	81.6%	79.4%	79.5%	78.9%	78.5%	78.3%

Source: Digitimes Research, October 2018

Taiwan's notebook shipments grew 4.3% sequentially but decreased 4.7% on year in the third quarter of 2018, as Intel's CPU shortages affected vendors' overall order placements. The sequential growth was slightly weaker than what Digitimes Research had originally expected. (Note: Unless otherwise indicated, all figures and tables in this report refer to output from Taiwan makers.)

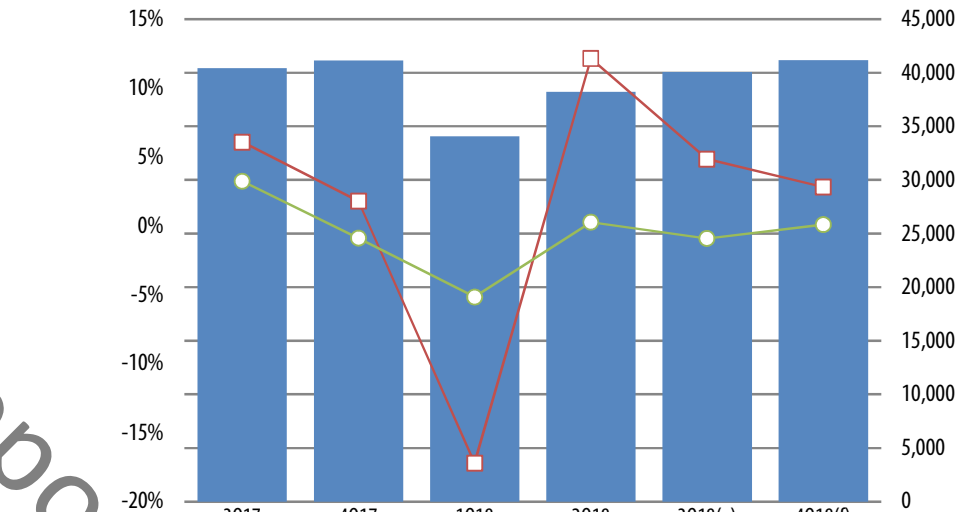
The Core i5 and Atom series processors had the tightest supply with shipments of mainstream and entry-level notebooks as well as entry-level Chromebooks being hit hardest.

Apple's new MacBook Air is expected to increase Taiwan's ODM notebook shipments in the fourth quarter, but the overall growth will be weaker than expected as some vendors are witnessing more serious CPU shortages than in the third.

Digitimes Research originally expected Taiwan's notebook shipments in the fourth quarter to see an on-year growth, but now expects them to drop by 1.3%.

As vendors have been outsourcing more orders to China-based makers, Taiwan's share of worldwide notebook shipments is on the decline and will slip to a new low at 78.3% in the fourth quarter.

Chart 2: Worldwide notebook shipments, 3Q17-4Q18 (k units)



	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
WW shipments	40,424	41,149	34,072	38,207	40,056	41,189
Q/Q	6.1%	1.8%	-17.2%	12.1%	4.8%	2.8%
Y/Y	3.2%	-0.9%	-5.2%	0.3%	-0.9%	0.1%

Source: Digitimes Research, October 2018

Worldwide notebook shipments performed better than Taiwan's volumes in the third quarter, rising 4.8% sequentially and falling only less than 1% on year, thanks to better-than-expected Chromoebook shipments.

Notebook vendors experienced slightly tight supply in the third quarter as a result of the shortages of Intel's mainstream and entry-level processors. Shipments of Intel's latest Whisky Lake processors were also limited in the quarter.

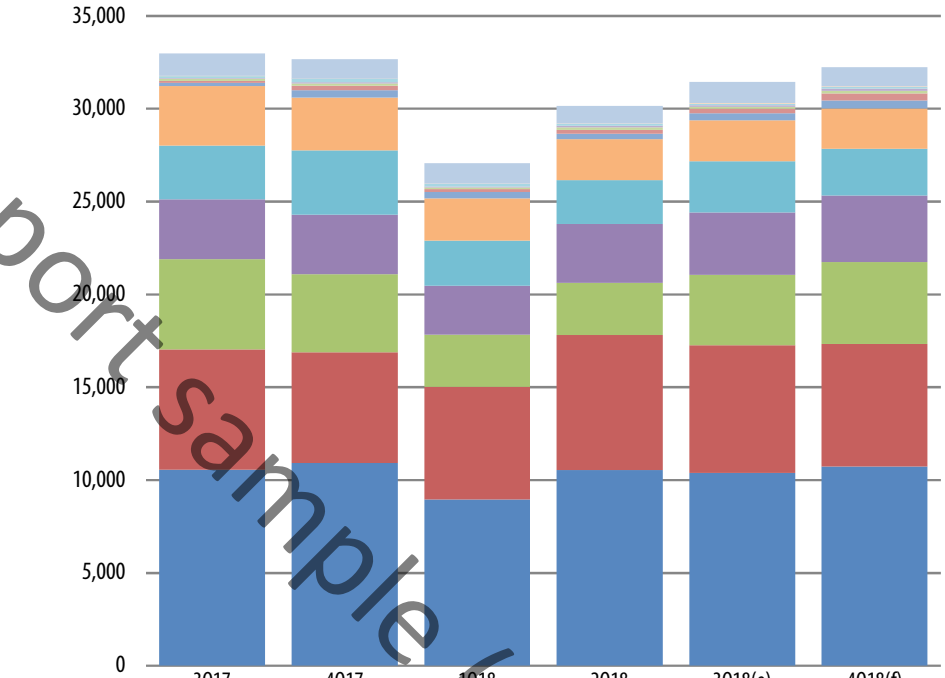
The worldwide notebook volumes are expected to increase 2.8% sequentially and stay flat on year in the fourth quarter, a performance weaker than Digitimes Research's original expectations, as Intel's CPU shortages will remain a problem.

Major vendors will focus on pushing inexpensive gaming notebooks with integrated discrete graphics cards in the fourth quarter. Models equipped with Nvidia's GeForce GTX 1050 graphics card will see their pricing slip below US$699 in North America, while in China, prices for same-specification models will fall below CNY5,000 (US$724.1).

Shipments breakdown

Clients

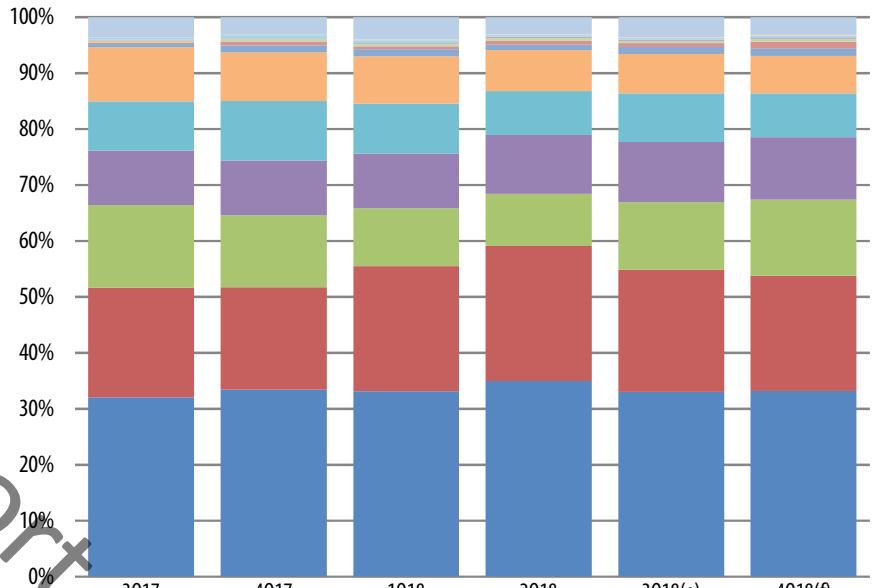
Chart 3: Notebook shipments by major client, 3Q17-4Q18 (k units)



	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
Others	1,219	1,045	1,098	941	1,121	1,030
VAIO	9	9	28	29	40	36
Microsoft	105	175	128	89	88	97
Fujitsu-Siemens	49	66	56	87	96	110
NEC	111	126	99	138	107	146
Huawei	98	242	143	220	233	377
Xiaomi	184	390	345	288	377	443
Lenovo	3,199	2,845	2,283	2,202	2,216	2,145
Asustek	2,905	3,481	2,420	2,353	2,751	2,538
Acer	3,211	3,180	2,646	3,165	3,360	3,579
Apple	4,850	4,215	2,802	2,820	3,800	4,410
Dell	6,485	5,970	6,055	7,271	6,870	6,610
HP	10,565	10,915	8,968	10,542	10,381	10,719

Source: Digitimes Research, October 2018

Chart 4: Notebook shipment share by major client, 3Q17-4Q18



	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
Others	3.7%	3.2%	4.1%	3.1%	3.6%	3.2%
VAIO	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Microsoft	0.3%	0.5%	0.5%	0.3%	0.3%	0.3%
Fujitsu-Siemens	0.1%	0.2%	0.2%	0.3%	0.3%	0.3%
NEC	0.3%	0.4%	0.4%	0.5%	0.3%	0.5%
Huawei	0.3%	0.7%	0.5%	0.7%	0.7%	1.2%
Xiaomi	0.6%	1.2%	1.3%	1.0%	1.2%	1.4%
Lenovo	9.7%	8.7%	8.4%	7.3%	7.0%	6.7%
Asustek	8.8%	10.7%	8.9%	7.8%	8.8%	7.9%
Acer	9.7%	9.7%	9.8%	10.5%	10.7%	11.1%
Apple	14.7%	12.9%	10.4%	9.4%	12.1%	13.7%
Dell	19.7%	18.3%	22.4%	24.1%	21.9%	20.5%
HP	32.0%	33.4%	33.1%	35.0%	33.0%	33.2%

Source: Digitimes Research, October 2018

Apple became the third-largest client of Taiwan makers in the third quarter due to the launch of its new MacBook Air, which began mass production in September.

Acer fell to fourth place as its Chromebook shipments in the third quarter performed weaker than in the second.

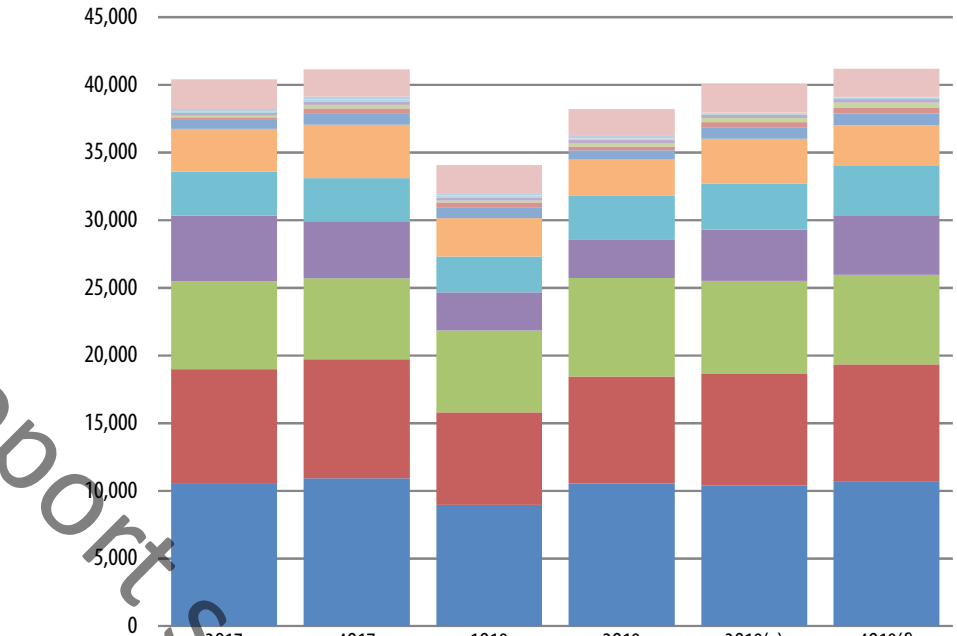
Hewlett-Packard (HP) failed to cash in on seasonal demand, with shipments to the US client slipped 1.5% sequentially in the third quarter primarily due to the CPU shortages, as well as extra inventory it had stocked up in the second quarter amid rising MLCC prices. Fierce competition from Lenovo also had some contributed to decrease in HP's shipments.

Dell's shipments declined 5.5% sequentially in the third quarter due to slumping Chromebook shipments and the shortages of Atom processors.

Apple's shipments are expected to rise by over 16% sequentially to come to above four million units in the fourth quarter due to strong demand for the new MacBook Air.

Asustek will see its shipments decline 7.7% sequentially in the fourth quarter as its gaming notebook volumes will be undermined by competitors. Its internal personnel problems will also affect its shipments.

Chart 5: Global major vendors' shipments, 3Q17-4Q18 (k units)



	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
Others	2,199	2,024	2,078	1,997	2,101	2,092
Fujitsu-Siemens	180	184	182	175	-	-
VAIO	16	17	33	35	47	43
Microsoft	105	175	128	89	88	97
Toshiba	225	250	210	245	265	265
Huawei	98	242	143	220	311	377
Xiaomi	184	390	345	288	377	443
Samsung	680	830	795	670	850	880
Asustek	3,175	3,931	2,849	2,683	3,317	3,009
Acer	3,234	3,200	2,646	3,265	3,390	3,614
Apple	4,850	4,215	2,802	2,820	3,800	4,410
Dell	6,485	5,970	6,061	7,278	6,870	6,610
Lenovo	8,428	8,806	6,832	7,900	8,259	8,630
HP	10,565	10,915	8,968	10,542	10,381	10,719

Source: Digitimes Research, October 2018

Lenovo's shipments went down 4.5% sequentially in the third quarter and were also weaker than those of the same quarter a year ago, as Intel's CPU shortages hit the China-based vendor more seriously than they did to US-based ones. Lenovo had a shortfall of around 5% in the quarter with the supply of Intel's Atom series being the tightest, as a major portion of the China-based vendor's shipments are entry-level models.

Starting from third-quarter 2018, Digitimes Research is integrating Fujitsu Siemens' shipments into Lenovo's in the global vendor shipments chart, as Lenovo has officially completed its acquisition of Fujitsu's PC business. Of the global top-3 vendors, Lenovo will perform the best in the fourth quarter as its CPU shortage problem will not be as serious as in the third and will see strong notebook demand due to seasonal factors.

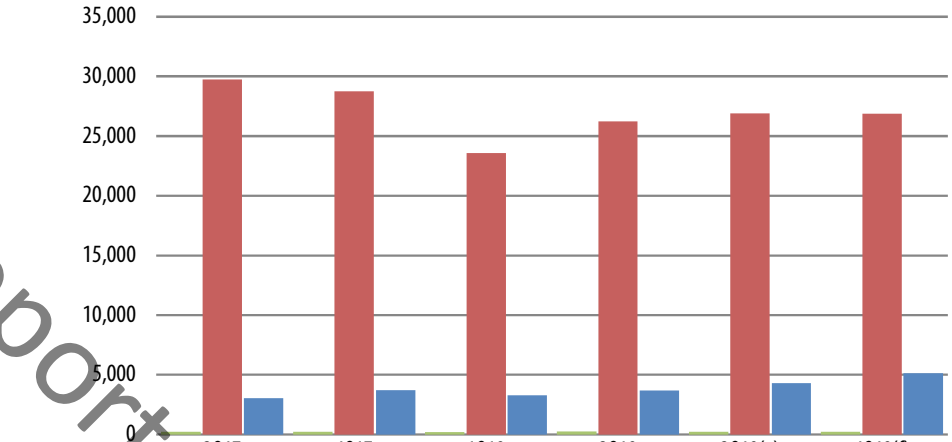
Dell, which has a strong focus on the enterprise sector, will not benefit much from year-end holiday sales as it only has about 40% of its revenues coming from the consumer products.

Both Xiaomi and Huawei will see rising shipments in the fourth quarter. Xiaomi has been renewing its notebook products, while Huawei is launching devices targeting mainly the high-end and mainstream sectors. Both companies are enjoying rising sales in China.

Apple's new MacBook Air may achieve shipments of two million units in the fourth quarter.

CPUs

Chart 6: Notebook shipments by CPU, 3Q17-4Q18 (k units)



	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
AMD	3,035	3,690	3,295	3,678	4,307	5,126
Intel Mobile CPU	29,724	28,740	23,578	26,226	26,913	26,888
Other	231	229	198	241	220	226

Source: Digitimes Research, October 2018

Chart 7: Notebook shipment share by CPU, 3Q17-4Q18

	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
Other	0.7%	0.7%	0.7%	0.8%	0.7%	0.7%
Intel Mobile CPU	90.1%	88.0%	87.1%	87.0%	85.6%	83.4%
AMD	9.2%	11.3%	12.2%	12.2%	13.7%	15.9%

Source: Digitimes Research, October 2018

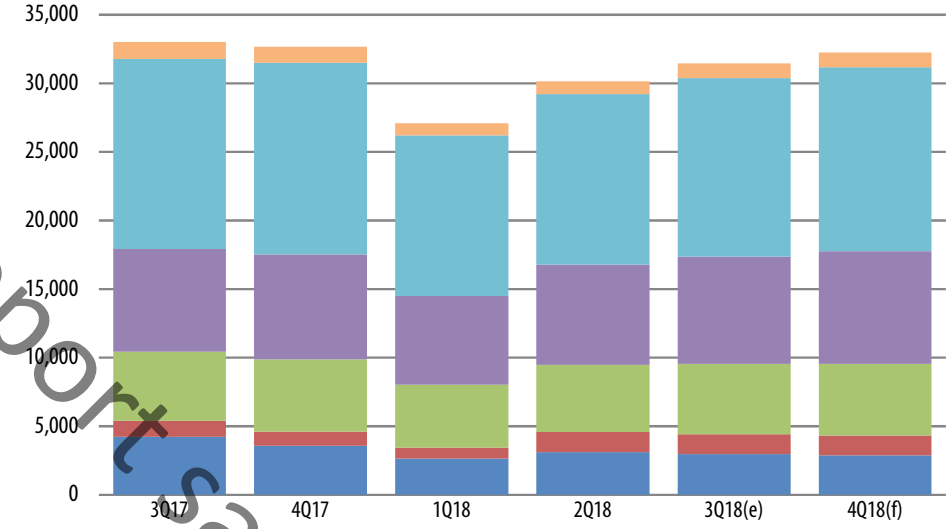
Because of Intel's CPU shortages, several vendors have turned to release models based on AMD's solutions, boosting Taiwan's AMD-based notebook shipments by 13.7% sequentially and over 40% on year in the third quarter. This also increased the share of AMD-based products by 1.1pp on quarter to reach a new high at 13.7%.

Vendors including HP, Lenovo and Dell have been increasing their adoption of AMD-based products to fill the gap in their entry-level lineups that was created by the CPU shortages.

The fourth quarter will be the shipment peak of Taiwan's notebook industry for 2018 and AMD-based notebook shipments are expected to rise further to above five million units with a share surpassing 15%.

Screen size

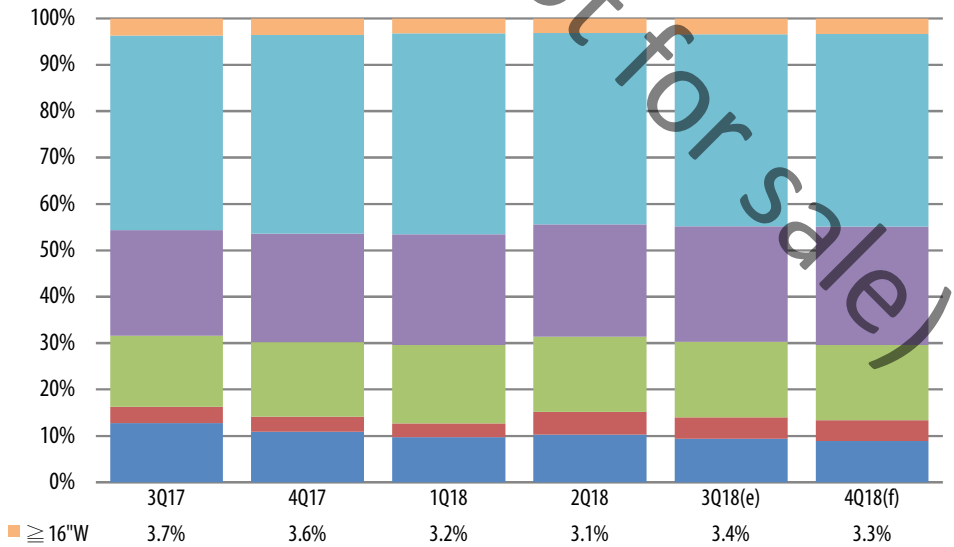
Chart 8: Notebook shipments by screen size, 3Q17-4Q18 (k units)



	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
≧16"W	1,221	1,176	866	935	1,069	1,064
15"W	13,855	13,978	11,722	12,450	13,016	13,412
14"W	7,489	7,642	6,470	7,295	7,829	8,221
13"W	5,047	5,258	4,575	4,883	5,125	5,223
12"W	1,155	1,045	812	1,477	1,446	1,451
<12"W	4,223	3,560	2,626	3,105	2,955	2,869

Source: Digitimes Research, October 2018

Chart 9: Notebook shipment share by screen size, 3Q17-4Q18



	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
≧16"W	3.7%	3.6%	3.2%	3.1%	3.4%	3.3%
15"W	42.0%	42.8%	43.3%	41.3%	41.4%	41.6%
14"W	22.7%	23.4%	23.9%	24.2%	24.9%	25.5%
13"W	15.3%	16.1%	16.9%	16.2%	16.3%	16.2%
12"W	3.5%	3.2%	3.0%	4.9%	4.6%	4.5%
<12"W	12.8%	10.9%	9.7%	10.3%	9.4%	8.9%

Source: Digitimes Research, October 2018

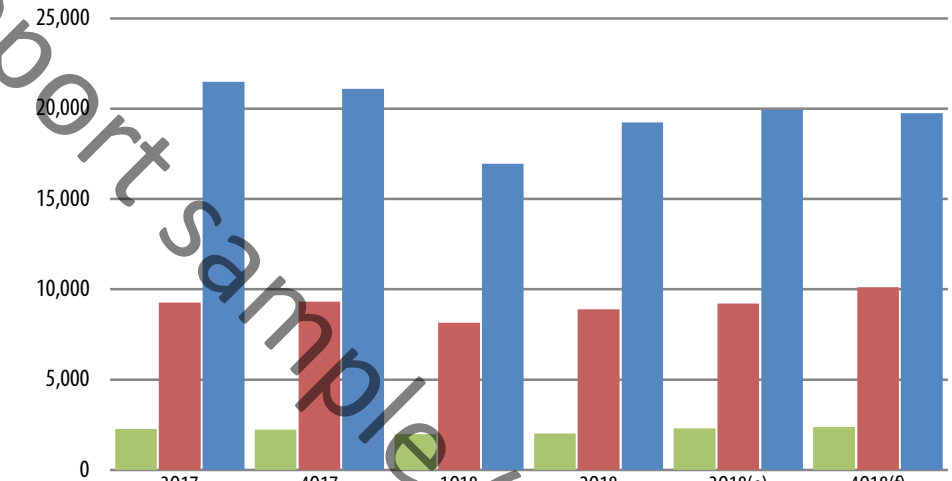
Shipments of notebooks with smaller than 12-inch displays decreased nearly 5% sequentially in the third quarter as Intel's Atom series processors, which were in serious shortages, were mainly adopted in 10- to 11-inch entry-level models.

In the fourth quarter, shipments to the sub-12-inch segment will continue slipping due to the ongoing shortages of the Atom series.

Shipments to both the 14- and the 15-inch segments will achieve above average sequentially growths in the fourth quarter as more enterprise models have begun adopting 15-inch form factor designs, while consumer demand for 14-inch narrow-bezel devices has been rising.

Makers

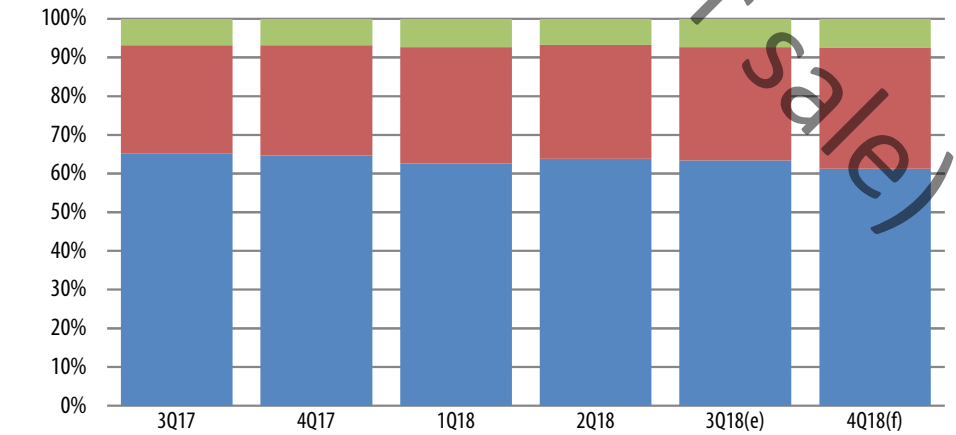
Chart 10: Notebook shipments by maker tier, 3Q17-4Q18 (k units)



	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
Top 2	21,480	21,095	16,948	19,240	19,926	19,742
Top 3-5	9,252	9,325	8,141	8,889	9,208	10,115
Non-top 5	2,258	2,239	1,982	2,016	2,306	2,383

Source: Digitimes Research, October 2018

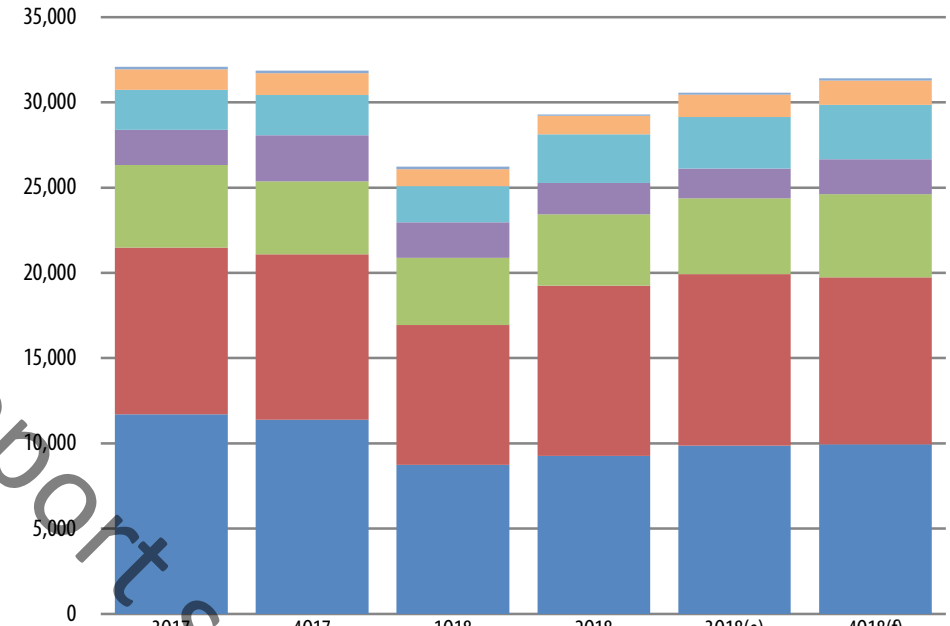
Chart 11: Notebook shipment share by maker tier, 3Q17-4Q18



	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
Non-top 5	6.8%	6.9%	7.3%	6.7%	7.3%	7.4%
Top 3-5	28.0%	28.6%	30.1%	29.5%	29.3%	31.4%
Top 2	65.1%	64.6%	62.6%	63.8%	63.4%	61.2%

Source: Digitimes Research, October 2018

Chart 12: Top makers' notebook shipments, 3Q17-4Q18 (k units)



	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
ECS	130	140	140	100	135	138
Foxconn	1,215	1,301	997	1,072	1,306	1,415
Inventec	2,345	2,363	2,118	2,859	3,005	3,196
Pegatron	2,068	2,691	2,085	1,826	1,748	2,043
Wistron	4,839	4,271	3,938	4,204	4,455	4,876
Compal	9,763	9,706	8,197	9,957	10,044	9,795
Quanta	11,717	11,389	8,751	9,283	9,882	9,947

Source: Digitimes Research, October 2018

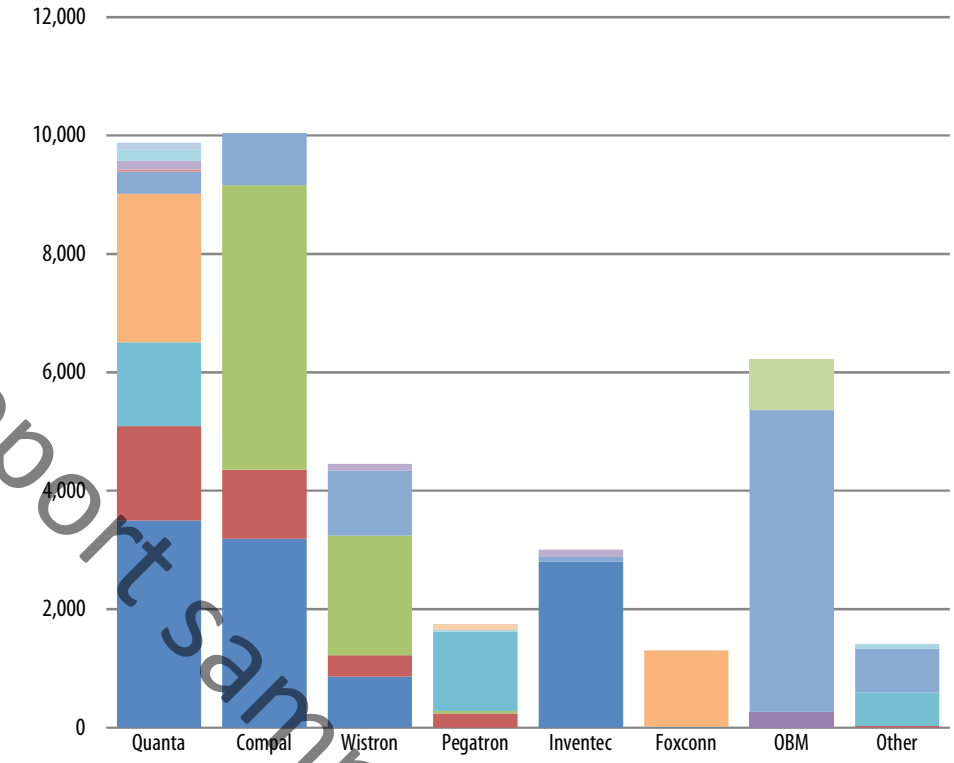
Compal Electronics' shipments stood at above 10 million units in the third quarter thanks to pick-ups in orders from HP and Acer.

Inventec also saw shipments go above three million units in the third quarter with increases in orders from HP.

Quanta Computer will return as the largest maker in the fourth quarter with shipments to rise to nearly 10 million units, thanks to mass shipments of Apple's new MacBook Air and the growth in Huawei's orders.

Wistron is expected to enjoy a sequential growth of 9.5% in fourth-quarter shipments due to more orders from Acer and HP.

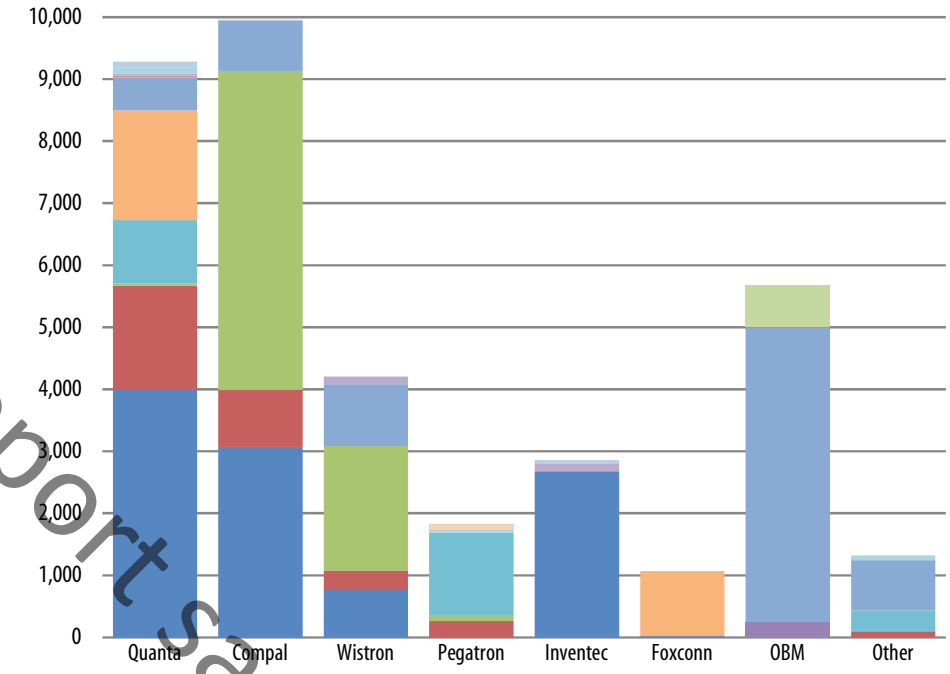
Chart 13: Vendor-maker partnership, 3Q18 (k units)



	Quanta	Compal	Wistron	Pegatron	Inventec	Foxconn	OBM	Other
Others	114			7				
Microsoft				88				
Huawei	198			35				78
Xiaomi	141		112		124			
Samsung							850	
VAIO	40						7	
Lenovo	371	879	1,098		71		5,101	739
Apple	2,510					1,290		
Asustek	1,418			1,333				566
Toshiba							265	
Dell		4,805	2,020	45				
Acer	1,590	1,170	360	240				30
HP	3,500	3,190	865		2,810	16		

Source: Digitimes Research, October 2018

Chart 14: Vendor-maker partnership, 2Q18 (k units)

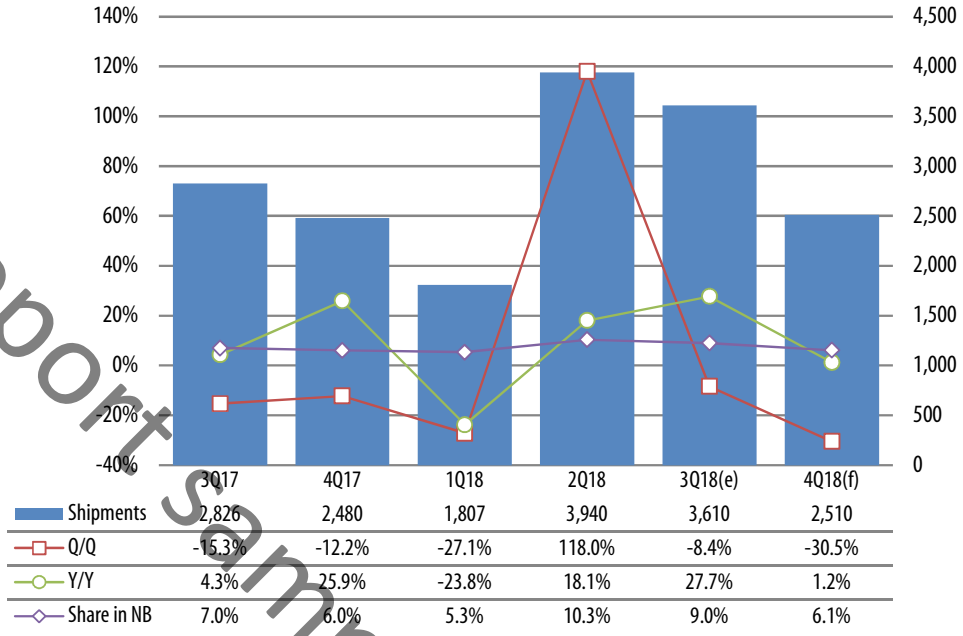


	Quanta	Compal	Wistron	Pegatron	Inventec	Foxconn	OBM	Other
Others	95	11		4	50			
Microsoft				89				
Huawei	97			47				76
Xiaomi	35		124		129			
Samsung							670	
VAIO	29						6	
Lenovo	534	816	990				4,750	810
Apple	1,770					1,050		
Asustek	1,017			1,336				330
Toshiba							245	
Dell	36	5,140	2,010	85				7
Acer	1,680	920	300	265				100
HP	3,990	3,070	780		2,680	22		

Source: Digitimes Research, October 2018

Chromebook

Chart 15: Chromebook shipments, 3Q17-4Q18 (k units)



	3Q17	4Q17	1Q18	2Q18	3Q18(e)	4Q18(f)
Shipments	2,826	2,480	1,807	3,940	3,610	2,510
Q/Q	-15.3%	-12.2%	-27.1%	118.0%	-8.4%	-30.5%
Y/Y	4.3%	25.9%	-23.8%	18.1%	27.7%	1.2%
Share in NB	7.0%	6.0%	5.3%	10.3%	9.0%	6.1%

Source: Digitimes Research, October 2018

Worldwide Chromebook shipments performed better than expected in the third quarter, down only 8.4% sequentially and up 27.7% on year. Educational procurement orders from North America saw better-than-expected growth.

HP and Dell both shipped around one million Chromebooks in the third quarter with Acer delivering almost 900,000 units and Samsung over 300,000 units. Asustek and Lenovo each shipped around 100,000 units.

The fourth quarter is the slow season for the Chromebook market and shipments are expected to be down over 30% on quarter.

In the fourth quarter, Google is unlikely to allocate budgets on Chromebook promotions in the consumer market and will put more attention on the education sector.

For the education sector, Google continues offering more tools in Chrome OS such as G Suite that are able to assist students and teachers.

Important factors

Components

Intel's overall CPU shortfall is expected to shrink to around 3% in the fourth quarter of 2018, down from third-quarter's 3-4%.

Processors that are affected by the shortages include the U series Core i5 family, which is mainly adopted by mainstream notebook models, and the Atom series used in inexpensive notebooks and Chromebooks. Of the Core i5 series, Intel's quad-core Kaby Lake Refresh-based CPUs had the worst shortfall.

Intel's new Whiskey Lake processors will only be supplied in a small volume in the fourth quarter.

Some vendors, such as HP and Lenovo, have turned to adopt AMD's solutions replacing Atom processors for their entry-level products.

Panel prices will rise by less than US$1 in the fourth quarter due to tight driver IC supply and the increase will only have limited impact on notebook shipments.

MLCC supply is still tight, but its impact on notebook shipments has been much smaller than that of CPUs.

New MacBook Air

Apple announced its new 13-inch MacBook Air using a Full HD display with pricing starting from US$1,199, which is US$200 higher than the starting price of the previous-generation MacBook Air.

Since the new MacBook Air has similar hardware specifications to the existing entry-level MacBook Pro, but with a thinner and lighter form factor, Digitimes Research expects the new MacBook Air to cannibalize the MacBook Pro.

US-China trade tensions

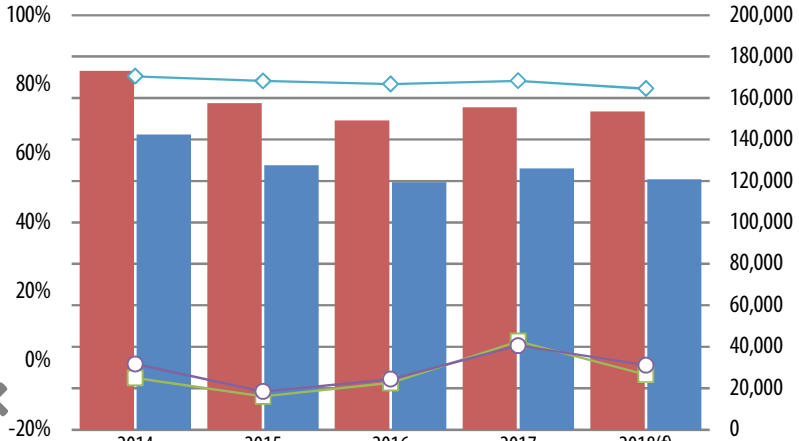
Digitimes Research expects the US-China trade war to have only limited impact on the worldwide notebook market.

It remains rather difficult for the notebook supply chain to completely move its production out of China. Digitimes Research believes that the best that the supply chain can accomplish by the end of 2019 will be moving high-end product assembly lines and motherboard production to places such as Mexico and Taiwan.

In addition, with three of the global top-5 vendors being US-based players, they are likely to make serious efforts trying to prevent the US government from imposing tariffs on notebooks.

Annual shipments

Chart 16: Taiwan and worldwide notebook shipments, 2014-2018 (k units)



	2014	2015	2016	2017	2018(f)
Taiwan shipments	142,432	127,606	119,373	126,063	120,896
Worldwide shipments	173,078	157,613	149,142	155,601	153,524
Taiwan Y/Y	-5.0%	-10.4%	-6.5%	5.6%	-4.1%
Worldwide Y/Y	-1.0%	-8.9%	-5.4%	4.3%	-1.3%
Taiwan share	82.3%	81.0%	80.0%	81.0%	78.7%

Source: Digitimes Research, October 2018

In the first half of 2018, worldwide notebook shipments already suffered a single-digit percentage drop sequentially due to shortages of passive components such as MLCC and capacitors and with the second half's worsening shortages of Intel's CPUs and weakening demand from consumers in China, overall global notebook shipments in 2018 are expected to slide 1.3% on year to arrive at 153 million units.

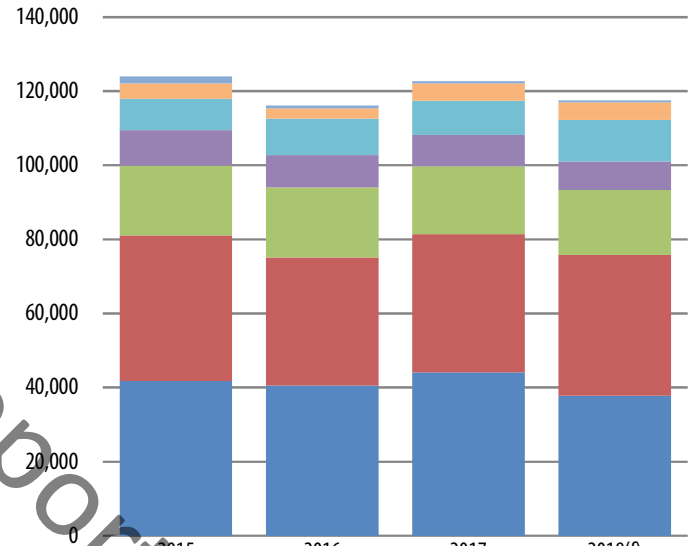
Taiwan's shipments will have a worse decline in 2018, resulting in a drop in their worldwide share to below 80%.

For 2019, Digitimes Research expects global shipments to slip another 1% to around 152.1 million units with the volumes from the consumer sector to suffer a much sharper on-year decline than in 2018, while those from the enterprise sector will witness a growth weaker than in 2018.

With the exception of the top-3 vendors, all the other vendors' business strategies are expected to turn their focus to notebooks with high profitability and simply product lineups. However, the new strategies will also constrain their shipment output in 2018.

Microsoft will stop providing updates to Windows 7 for free in 2020, but users will still be able to obtain the updates until 2022 through paid services. Digitimes Research expects some enterprises to postpone their PC hardware renewal by accepting the paid services, which will weaken the PC replacement trend in the enterprise sector for the upcoming few years.

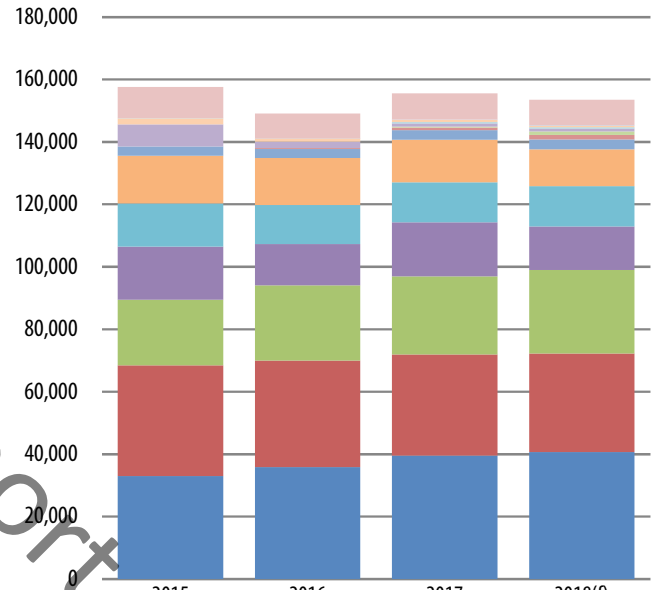
Chart 17: Top makers' shipments, 2015-2018 (k units)



	2015	2016	2017	2018(f)
ECS	1,820	720	620	513
Foxconn	4,195	2,735	4,667	4,790
Inventec	8,503	9,894	9,251	11,178
Pegatron	9,565	8,722	8,461	7,702
Wistron	18,820	18,894	18,244	17,473
Compal	39,307	34,496	37,332	37,993
Quanta	41,753	40,622	44,118	37,863

Source: Digitimes Research, October 2018

Chart 18: Global major vendors' shipments, 2015-2018 (k units)



	2015	2016	2017	2018(f)
Others	9,908	7,958	8,434	8,268
VAIO	70	63	62	158
Fujitsu-Siemens	1,930	1,090	802	357
Microsoft			315	402
Toshiba	7,200	2,009	1,045	985
Huawei			380	1,051
Xiaomi		291	815	1,453
Samsung	2,955	2,855	3,035	3,195
Asustek	15,260	15,077	13,676	11,858
Acer	13,860	12,439	12,767	12,915
Apple	16,915	13,285	17,335	13,832
Dell	21,020	24,105	24,955	26,819
Lenovo	35,492	34,159	32,404	31,621
HP	33,003	35,811	39,576	40,610

Source: Digitimes Research, October 2018