

Issue No. 381 2nd Quarter 2024 July 2024

Strong Connector Bookings Support Positive Sales Growth June Bookings up +10.7% and Sales up +3.0%

Regional Performance:

YTD, all regions except Europe and Japan are showing growth, with the greatest growth in Asia Pacific, where YTD billings have increased +12.0%, followed by China where sales increased +8.3%. Japan and Europe, the only regions exhibiting a decline, have YTD billings of -21.8% and -1.6% respectively. See page 5.

Industry Backlog:

June backlog was \$22,070 million (12.7 weeks). See page 13.

2024 Currency Impact:

The industry registered a YOY increase in sales in June 2024, of +2.0% in local currency and an increase in sales of +3.0% in USD.

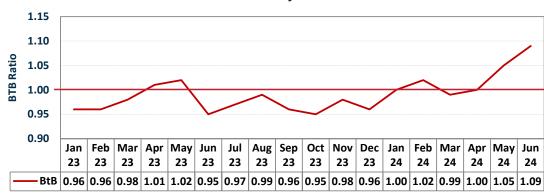
NEW BISHOP RESEARCH REPORT

Rectangular Input/ Output Connector Market 2024 June bookings increased +10.7% year-over-year and 7.0% year-to-date, while billings increased +3.0% year-over-year and 2.7% year-to-date.



The book-to-bill ratio in June was 1.09, up from 1.05 in May.

Connector Industry Book-to-Bill





Booking Highlights and Conclusions

Sequential, Year-Over-Year, and Year-To-Date Bookings Percentage Change – 2022/2023/2024

		Sequential		١	ear-Over-Ye	ar		Year-To-Date	•
Month	2022	2023	2024	2022	2023	2024	2022	2023	2024
Jan	1.6%	-1.3%	9.6%	14.8%	-18.4%	8.8%	14.8%	-18.4%	8.8%
Feb	10.0%	10.1%	5.1%	7.3%	-13.8%	7.3%	10.8%	-18.4%	8.1%
Mar	-5.1%	1.2%	-2.9%	7.1%	-12.9%	-0.9%	9.1%	-16.6%	4.9%
Apr	-8.5%	-5.1%	3.2%	-6.4%	-9.7%	10.7%	5.1%	-15.0%	6.3%
May	6.6%	13.5%	9.1%	-5.1%	-3.9%	6.3%	2.9%	-12.8%	6.3%
Jun	-6.5%	-12.7%	-7.7%	-3.2%	-10.3%	10.7%	1.9%	-12.4%	7.0%
Jul	-9.7%	0.3%		-9.9%	-0.3%		1.1%	-10.9%	
Aug	8.2%	9.2%		-9.6%	0.7%		-1.2%	-9.5%	
Sep	-1.1%	-5.4%		1.6%	-3.7%		-0.9%	-8.9%	
Oct	-12.0%	-3.2%		-16.3%	5.9%		-2.4%	-7.6%	
Nov	10.0%	11.8%		-15.9%	7.7%		-3.7%	-6.3%	
Dec	-7.2%	-13.7%		-16.1%	0.2%		-4.7%	-5.9%	

Bookings - YOY and YTD



- June bookings increased +10.7% year-over-year.
- Orders decreased -7.7% on a sequential basis in June.
- The book-to-bill ratio for June was 1.09. This is the third consecutive month of a book-to-bill ratio of 1.00 or greater.

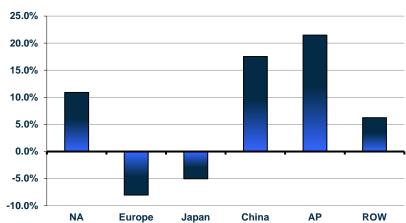


Regional Performance: BOOKINGS

June 2024 Bookings

Year-To-Date Bookings by Region





- Year-to-date, June bookings increased by +7.0%.
- Year-over-year orders in June rose in four of the six regions. North America, China, Asia Pacific, and the ROW region saw increases with Asia Pacific showing the most growth at +43.8%, followed by the ROW region where bookings increased +25.1% YOY. Europe, and Japan showed a year-over-year decrease, declining -10.5% and -16.5% respectively.
- YTD, all regions increased but Europe and Japan, where orders declined -8.0% and -5.0% respectively.

Note: Additional companies agreed to share their bookings with Bishop. As a result, the January through June 2024 monthly percentages may have changed slightly.

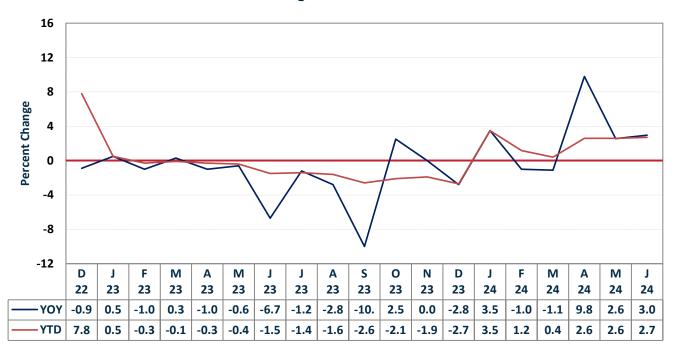


Billing Highlights and Conclusions

Sequential, Year-Over-Year, and Year-To-Date Billings Percentage Change - 2022/2023/2024

		Sequential		`	/ear-Over-Yea	r		Year-To-Date)
Month	2022	2023	2024	2022	2023	2024	2022	2023	2024
Jan	-5.1%	-3.1%	5.8%	11.4%	0.5%	3.5%	11.4%	0.5%	3.5%
Feb	11.4%	9.7%	2.8%	10.2%	-1.0%	-1.0%	10.8%	-0.3%	1.2%
Mar	-2.2%	-0.9%	0.4%	9.1%	0.3%	-1.1%	10.2%	-0.1%	0.4%
Apr	-6.7%	-7.9%	1.4%	3.0%	-1.0%	9.8%	8.4%	-0.3%	2.6%
May	11.6%	12.1%	4.4%	7.4%	-0.6%	2.6%	8.2%	-0.4%	2.6%
Jun	0.2%	-6.0%	-5.0%	11.9%	-6.7%	3.0%	8.8%	-1.5%	2.7%
Jul	-7.1%	-1.7%		6.1%	-1.2%		8.4%	-1.4%	
Aug	8.9%	7.2%		6.3%	-2.8%		8.1%	-1.6%	
Sep	5.1%	-2.7%		14.4%	-10.0%		8.9%	-2.6%	
Oct	-14.0%	-2.1%		1.9%	2.5%		8.2%	-2.1%	
Nov	10.6%	7.9%		3.0%	0.0%		7.6%	-1.9%	
Dec	-9.8%	-12.4%		-1.6%	-2.8%		7.8%	-2.7%	

Billings - YOY and YTD



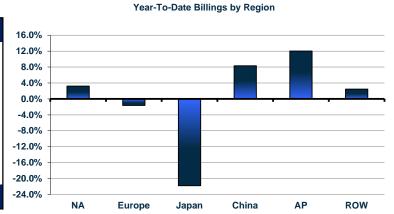
- June billings grew +2.7% year-to-date and +3.0% year-over-year.
- Sequentially, June billings decreased -5.0%.



Regional Performance: BILLINGS

June 2024 Billings

Region **Sequential** YOY YTD NA -3.7% 4.4% 3.2% **Europe** -8.3% -7.2% -1.6% **Japan** 1.9% -19.7% -21.8% 8.3% China -5.8% 9.0% AP -2.1% 22.0% 12.0% **ROW** -5.1% 2.1% 2.5% -5.0% 3.0% 2.7% **Total**



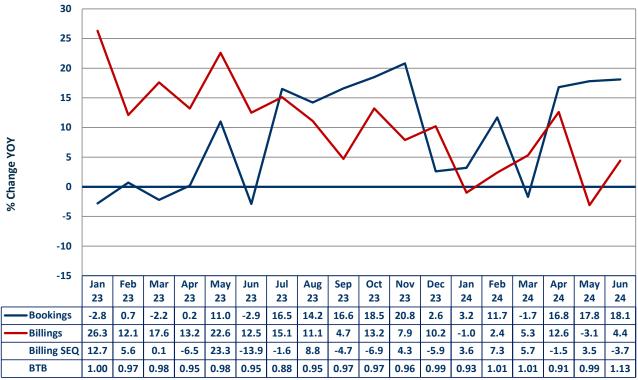
- June connector sales increased by +3.0% compared to the same period last year.
- Only one region saw a sequential increase, Japan, increasing +1.9%. All other regions saw a decline, with Europe declining the most with a decrease of -8.3%, followed by China with a decline of -5.8%.
- Year-over-year, all regions but Europe and Japan saw an increase, with the greatest increase in the Asia Pacific region at +22.0%, followed by China with YOY growth of +9.0%. Japan saw the greatest decrease, declining -19.7%, while Europe saw a decline of -7.2%.
- YTD, all regions but Europe and Japan saw an increase, declining -1.6% and -21.8% respectively. The greatest growth YTD was in the Asia Pacific region, where sales grew +12.0%, followed by China, where sales grew +8.3%.

Note: Additional companies agreed to share their billings with Bishop. As a result, the January through June 2024 monthly percentages may have changed slightly.



North America: The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill (BTB) ratio is also displayed.

North America Bookings and Billings Year-Over-Year Percentage Change & Book-To-Bill Ratio



North America Performance

- Sales increased +4.4% year-over-year in North America in June, while orders grew +18.1%. Sequentially, North American billings decreased -3.7%. The book-to-bill ratio was 1.13.
- According to the US Bureau of Labor Statistics, the US inflation rate for June was 3.0%, down from 3.3% in May and 3.4% in April.
- Industrial production in the US rose 0.6% in June, after advancing 0.9% in May 2024. For the 2nd quarter as a whole, industrial production increased at an annual rate of 4.3%.
- Manufacturing PMI stood at 48.5 in June, after registering 48.7 in May and 49.2 in April.
- US unemployment increased slightly to 4.1% in June, after increasing from 3.9% to 4.0% in May.
- June retail trade sales were down 0.1% from May 2024, and up 2.0% above last year.
- According to TD Economics', "US vehicle sales fell 4.0% month-on-month to 15.3 million units in June well below consensus expectations for 15.8 million units. Passenger vehicle sales fell 10.0% year-on-year while sales of light-trucks were down 1.7% year-on-year."
- The Consumer Price Index for All Urban Consumers (CPI-U) fell 0.1% seasonally adjusted in June, and rose 3.0% over the last 12 months, not seasonally adjusted, according to the U.S. Bureau of Labor Statistics.



Europe: The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.

Europe Bookings and Billings Year-Over-Year Percentage Change & Book-To-Bill Ratio



Europe Performance

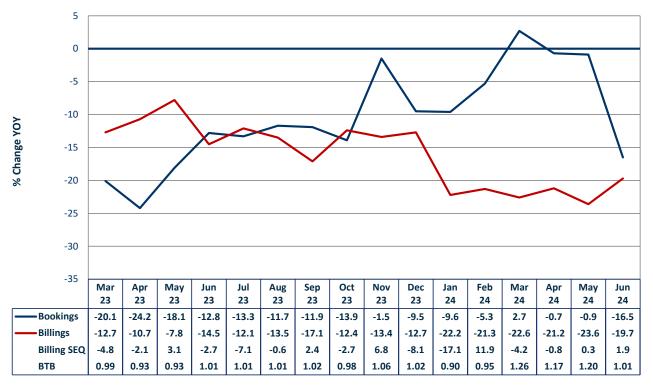
- Bookings decreased -10.5% year-over-year in June, while billings decreased -7.2%. Sequentially, sales decreased -8.3%. The book-to-bill ratio was 0.97, up from .96 in May.
- Industrial output in the euro area decreased by 0.6% and 0.8% in the EU month-on-month in seasonally adjusted terms in May*. In May 2024 versus May 2023, industrial production decreased by 2.9% in the euro area and by 2.5% in the EU.
- The euro area annual inflation rate dropped to 2.5% in June 2024, versus 2.6% in May 2024. The HCOB Eurozone Manufacturing PMI was revised higher to 45.8 in June 2024 from a preliminary estimate of 45.6.
- In May* 2024, compared with April 2024, the seasonally adjusted retail trade volume increased by 0.1% in both the euro area and the EU, according to first estimates from Eurostat, the statistical office of the European Union
- The euro area's unemployment rate remained at 6.4% in May*, down from 6.5% in May 2023. The EU unemployment rate was 6.0%, stable when compared to April 2024 as well as with May of 2023.
- In June 2024, DG ECFIN's flash estimate of the consumer confidence indicator edged up further, by 0.3 percentage points (pps.) in both the EU and the euro area.

^{*}June readings not published at the time of this reporting.



Japan: The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.





Japan Performance

- June, year-over-year bookings declined -16.5%, while sales dropped -19.7%. Sequentially, sales increased +1.9%. Japan's book-to-bill ratio was 1.01, down from May's high of 1.20.
- In June 2024, the year-on-year growth rate of the core Consumer Price Index (CPI) in Tokyo Prefecture stood at 2.1%. The monthly core inflation in Tokyo increased from 1.9% in May* 2024.
- Industrial production growth in Japan was revised upward to 3.6% month-over-month in May* 2024 from flash data of a 2.8% increase. Yearly, industrial output rose by 1.1% in May, indicating the first expansion in seven months and swinging from a 1.8% decline in April. Manufacturing PMI in Japan was revised lower to 50.0 in June from 50.1 in preliminary reading and after a final of 50.40 points in May of 2024.
- The core consumer price index in Japan, which excludes fresh food but includes fuel cost, increased by 2.6% year-on-year in June 2024, accelerating for the second straight month following a 2.5% gain in May. Japan's core inflation rate has now stood at or above 2% for over two years.
- According to MarkLine, Japanese passenger car OEM data, May* 2024 production volumes in Japan increased 4.4% year-over-year to 616,678 units.

^{*}June readings not published at the time of this reporting.



China: The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.

China Bookings and Billings Year-Over-Year Percentage Change & Book-To-Bill Ratio



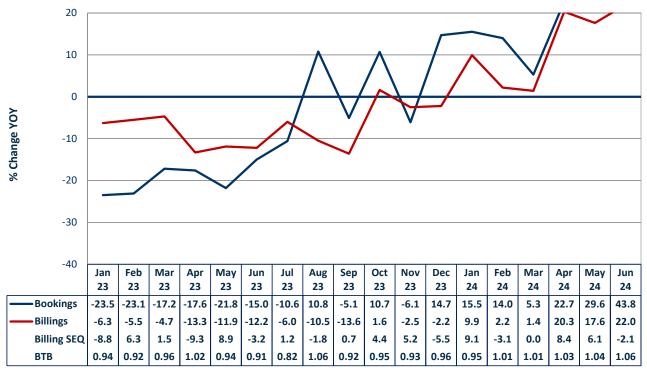
China Performance

- China's June sales grew +9.0% on a year-over-year basis, while orders grew +16.6%. Sequentially, sales decreased by -5.8%. The BTB climbed to 1.08, after sliding to 1.00 and 1.01 in April and May respectively.
- According to US News & World Reports, "China's exports beat forecasts in June, customs data showed while imports grew less than expected. Exports grew 8.6% from the same time last year, beating estimates of about 7.4% to 8% growth."
- In June 2024, the monthly inflation rate in China ranged at 0.2% compared to the same month in the previous year. China's consumer price index (CPI) in June rose 0.2% from a year earlier, against a 0.3% uptick in may, the slowest in three months.
- According to Beijing's National Bureau of Statistics, "in June, the total retail sales of consumer goods went up by 2.0% year-on-year. May's figure was 3.7%
- In June, vehicle production and sales volumes totaled 2.507 million units and 2.552 million units, down 2.1 YoY and 2.7% YoY, respectively. Year-to-date (YTD) production and sales volumes were 13.891 million units and 14.047 million units, up 4.9% YoY and 6.1% YoY, respectively.
- China's unemployment rate in urban areas of China ranged at 5%, remaining flat from the previous month.



Asia Pacific: The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.





Asia Pacific Performance

- Year-over-year, June orders were up a whopping +43.8%, while billings increased +22.0%. Sequentially, sales decreased -2.1%. The book-to-bill ratio was 1.06, up from 1.04 in May.
- According to S&P International "The seasonally adjusted HSBC India Manufacturing PMI increased from 57.5 in May to 58.3 in June, thus indicating a sharper improvement in business conditions."
- India's retail inflation jumped to 5.08% in June from 4.75% in May 2024, according to the latest Ministry of Statistics and Programme Implementation data." The rise was primarily attributed to higher food prices.
- The consumer price index in South Korea rose 2.4% higher in June from a year earlier, slower than the 2.7% rise in May and the weakest since July 2023, according to Statistics Korea.
- According to Trading Economics, "the S&P Global South Korea Manufacturing PMI rose to 52.0 in June 2024 from 51.6 in May, posting above the 50 no-change mark and improving for the second straight month, while hitting the highest level since April 2022."
- The seasonally adjusted June unemployment rate in South Korea remained unchanged for the fourth consecutive month at 2.8%.



 Rest of World: The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.

ROW Bookings and Billings Year-Over-Year Percentage Change & Book-To-Bill Ratio



Rest of World Performance

- Orders increased +25.1% while billings increased +2.1% year-over-year in June. Sequentially, sales decreased by -5.1%. The book-to-bill ratio was 1.07, up from 0.99 in May.
- According to Trading Economics, "The annual inflation rate in Brazil rose to 4.23% in June of 2024, up
 from the 3.93% in the prior month. This marks the second consecutive month of rising consumer
 prices, following a seven-month period of easing."
- According to the Brazilian Report, "May* manufacturing data brings the first signs that Brazil's
 economic activity has slowed down in Q2. The sector was down 0.9% month-on-month (the second
 consecutive drop) and 1% against May 2023, erasing gain obtained earlier this year."
- According to Trading Economics, "The S&P Global Brazil Manufacturing PMI rose to 52.5 in June of 2024, marking a sixth consecutive month of expansion and improving from May's 52.1, indicating solid sector improvement. Output growth was supported by backlog clearing and better demand for certain goods, though political issues and economic difficulties stymied broader growth."

^{*}June readings not published at the time of this reporting.



Regional Summary Snapshot

The following table shows a snapshot of the performance of each region. The table displays the latest metric available, and the trend of the metric compared to prior months/quarters.

	North America	Europe	Japan	China	Asia Pacific	ROW
GDP Growth YOY	2.8% Growing	0.4% Growing	-1.8% Declining	4.7% Steady	N/A	N/A
Industrial Production Growth	0.6% Up	-0.6% Down	+3.6% Up	5.3% Up	N/A	N/A
Manufacturing PMI*	48.5 Down	45.8 Down	50.0 Down	50.5 Down	N/A	N/A
Inflation Rate	3.0% Down	2.5% Down	1.9% Up	0.2% Steady	N/A	N/A
Unemployment Rate	4.1% Up	6.4% Steady	2.6% Flat	5.0% Steady	N/A	N/A
Retail Sale Growth YOY	0.1% Down	+0.1% Up	1.2% Up	2.0% Up	N/A	N/A
June Connector Sales	4.4%	-7.2%	-19.7%	9.0%	22.0%	2.1%
YTD Connector Sales	3.2%	-1.6%	-21.8%	8.3%	12.0%	2.5%
June Connector Orders	18.1%	-10.5%	-16.5%	16.6%	43.8%	25.1%
YTD Connector Orders	10.9%	-8.0%	-5.0%	17.5%	21.5%	6.2%

^{*} Purchasing Manager Index - Below 50 is contracting factory activity



The Industry Backlog Is 12.7 Weeks

The industry shipped \$1,736 million per week in June. As the table below displays, in June the ending backlog is \$22,070. Assuming the industry's weekly sales of \$1,736 million remain constant, the backlog represents 12.7 weeks of sales.

The following table shows the world connector backlog of orders ending June 2024.

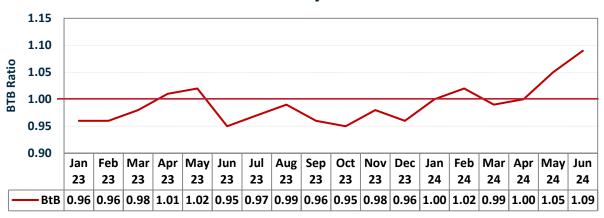
Industry Backlog

	2023	June 2024
BtB Ratio	0.98	1.09
Beginning Backlog	\$22,983.0	\$21,017.0
Bookings	\$79,888.0	\$43,316.0
Billings	\$81,854.0	\$42,263.0
Ending Backlog	\$21,017.0	\$22,070.0
Backlog in Weeks	13.4	12.7

\$ Millions

The book-to-bill ratio in June was 1.09. The following displays the trend of BTB ratios since January of 2023.

Connector Industry Book-to-Bill



The June 2024 ending backlog of \$22,070 million is \$1,053 million more than the 2023 ending backlog of \$21,017 million.

Change in Backlog

2023 Ending Backlog	\$21,017
2024 June Ending Backlong	\$22,070
Backlog Growth	\$1,053

\$ Millions



Currency Fluctuations Reduce Performance between USD and Local Currency

The dollar has been fluctuating against the euro, the yen, and the yuan. The following table measures the impact for June 2023 versus June 2024 and shows results for these three currencies.

Local Currency to One USD 2023 YTD versus 2024 YTD

Currency	2023	2024	% Change
Euro	0.9227	0.9289	-0.7%
Yuan	7.1492	7.2534	-1.4%
Yen	141.1550	157.9846	-10.7%

Europe, China, and Japan account for approximately 60% of world connector sales. Currency fluctuation against the US dollar can have a significant impact on our reporting of sales performance in US dollars.

The following table shows June YOY performance by region in US dollars and local currencies.

Industry Sales Performance June 2024 USD-vs-Local Currencies

Region	U.S.\$	Local Currency
North America	4.4%	4.4%
Europe	-7.2%	-7.8%
Japan	19.7%	-28.3%
China	9.0%	7.5%
Asia Pacific	22.0%	22.0%
ROW	2.1%	2.1%
World	3.0%	2.0%

Connector sales in June of 2024 increased +2.0% when measured in local currencies, versus growth of +3.0% in US dollars.



2024 Outlook: YTD June, Halfway

Over the past decade, sales through June average 48.9% of full year sales. Since industry sales are now \$42,263 million, 2024 sales should be \$86,427 million. This would lead to sales growth of +5.6% over 2023 sales of \$81,854 million.

The least the first half represented of full year sales was 45.6%. The most 51.2%. Using a decade of sales history, we can project a range of possible outcomes for 2024.

2024 Historical Analysis Through June 2024

	Historical Percentage	Sales YTD June	2024 Forecast	Percent Growth
Low	45.6%	\$42,263	\$92,682	13.2%
Medium	48.9%	\$42,263	\$86,427	5.6%
High	51.2%	\$42,263	\$82,545	0.8%

\$ Millions

The following table shows the range of possible outcomes for 2024 using the historical perspective methodology. The Bishop forecast is also shown in the table.

2024 Forecast Range

	2024 Forecast	2023 Actual	Percent Growth
Low	\$92,682	\$81,854	13.2%
Medium	\$86,602	\$81,854	5.8%
Bishop	\$86,427	\$81,854	5.6%
High	\$82,545	\$81,854	0.8%

\$ Millions

The Bishop forecast of 5.8% is slightly higher than the historical average. We feel comfortable that the second half of 2024 will result in improved connector demand.



The connector industry achieved sales in 2Q23 of \$20,982, up +5.0% in US dollars compared to 2Q23. We anticipate the third quarter to be up a strong 10.6% and the fourth quarter to be up 7.3%, leading to a year-over-year growth of 5.8%.

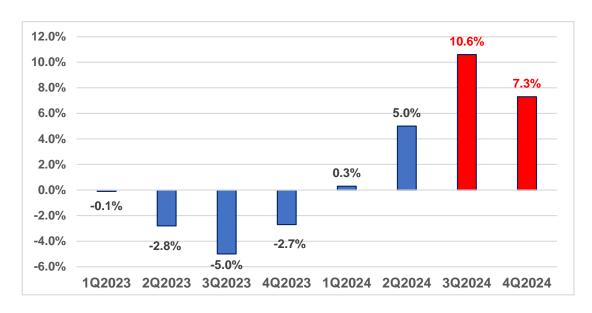
The following table shows industry sales by quarter for 2022, 2023, and 2024.

Connector Industry Quarterly Sales Results/Forecast 2022, 2023, and 2024

	2022	2023	YOY	2024	YOY
Quarter	Actual	Actual	Change	Actual	Change
1Q	\$21,200	\$21,179	-0.1%	\$21,253	0.3%
2Q	\$20,560	\$19,981	-2.8%	\$20,982	5.0%
3Q	\$22,160	\$21,060	-5.0%	\$23,300	10.6%
4Q	\$20,171	\$19,634	-2.7%	\$21,067	7.3%
Total	\$84,091	\$81,854	-2.7%	\$86,602	5.8%

\$ Millions, Bishop & Associates © 2024, Forecast in Red

Quarterly Sales by Percent Change 2023 through 2024





The following table provides Bishop & Associates' 2024 forecast by geographic region.

2024 Bishop Forecast

Region	2023	2024F	Percent Change
North America	\$18,840.8	\$20,313.5	7.8%
Europe	\$17,992.7	\$18,582.6	3.3%
Japan	\$4,683.7	\$4,822.2	3.0%
China	\$24,977.1	\$26,606.2	6.5%
Asia-Pacific	\$11,310.0	\$12,113.2	7.1%
ROW	\$4,049.8	\$4,164.1	2.8%
Total World	\$81,854.1	\$86,601.8	5.8%

\$ Millions

You will notice we project North America to achieve better growth than China or Asia.



Significant Events

July 2024 News

Industry News

Amphenol Corporation to Acquire Mobile Networks Businesses from CommScope

Amphenol Corporation (NYSE: APH) announced a definitive agreement to acquire CommScope's (NASDAQ: COMM) mobile networks businesses for \$2.1 billion in cash, subject to customary post-closing adjustments. The deal includes the purchase of CommScope's Outdoor Wireless Networks (OWN) segment as well as the Distributed Antenna Systems (DAS) business which resides in CommScope's Networking, Intelligent Cellular and Security Solutions (NICS) segment. These combined businesses are currently expected to have full-year 2024 sales and EBITDA margins of approximately \$1.2 billion and 25%, respectively. Assuming a continuation of current economic conditions, the acquisition is expected to be accretive to Amphenol's Diluted Earnings Per Share in the first full year after closing, excluding acquisition-related costs.

Amphenol Corporation to Complete Acquisition of Lutze

During the second quarter 2024, Amphenol announced they had signed a definitive agreement to acquire Lutze, a leading provider of harsh environment cable and cable assembly solutions for high-technology applications in the industrial market. The acquisition includes two businesses: Lutze US, based in North Carolina, and Lutze Europe, based in Germany. In May, they closed on Lutze US, which has annual sales of approximately \$75 million, and we expect to close on Lutze Europe, which has annual sales of approximately \$100 million, by the end of the third quarter of 2024. The Lutze businesses are reported in their Harsh Environment Solutions segment.

Worldwide Smartphone Market Grew 6.5% in the Second Quarter of 2024 as Momentum Continues to Build

According to preliminary data from the International Data Corporation (IDC) Worldwide Quarterly Mobile Phone Tracker, global smartphone shipments increased 6.5% year over year to 285.4 million units in the second quarter of 2024 (2Q24). Although this marks the fourth consecutive quarter of shipment growth and builds the momentum towards the expected recovery this year, demand has yet to come around in full and remains challenged in many markets.

"While recovery is well under way with the top 5 companies all making year-over-year gains, we are seeing increasing competition amongst the leaders and a polarization of price bands. As Apple and Samsung both continue to push the top of the market and benefit the most from the ongoing premiumization trend, many leading Chinese OEMs are increasing shipments in the low end in an attempt to capture volume share amidst weak demand. As a result, the share of mid-range devices is challenged," said Nabila Popal, senior research director with IDC's Worldwide Tracker team.

"Still, there is lots of excitement in the smartphone market today thanks to higher average selling prices (ASPs) and the buzz created by Gen AI smartphones, which are expected to grow faster than any mobile innovation we have seen to date and forecast to capture 19% of the market with 234 million shipments this year."

The preliminary market results show that Samsung captured the top position in 2Q24 with 18.9% share of shipments, thanks to a strategic focus on its flagships and a strong AI strategy. Apple finished the quarter in



second place with 15.8% share with improved performance in China and other key regions. The leading companies both saw modest growth year over year. Xiaomi placed third in 2Q24 with 14.8% share while vivo and OPPO tied* for the fourth position with 9.1% and 9.0% share respectively. Xiaomi and vivo both saw double-digit growth with strong performances in emerging markets and China, while OPPO's 1.8% growth was due to a successful ongoing expansion outside China. As competition increases, IDC expects a very positive and interesting second half of the year with a tight race among the leading OEMs.

PC Recovery Continues as the Market Grows 3% in the Second Quarter

The Traditional PC market delivered its second quarter of growth following eight consecutive quarters of decline. According to preliminary results from the International Data Corporation (IDC) Worldwide Quarterly Personal Computing Device Tracker, worldwide shipments reached 64.9 million units in the second quarter of 2024 (2Q24), representing year-over-year growth of 3.0%. While the overall market benefited from favorable comparisons to 2023, weak results in China continued to hold the market back. Excluding China, worldwide shipments grew more than 5% year over year.

Manufacturing Slump Continues; Price Pressures Ease

U.S. manufacturing contracted for a third straight month in June as demand remained muted while an index measuring prices paid by factories dropped to a six-month low, suggesting inflation could be easing.

The U.S. factory index – the PMI — declined by 0.2 percent to 48.5 as the first half of 2024 closed, according to the Institute for Supply Management. Any number below 50.0 indicates contraction. Demand remained in contraction in June but improved by 3.9 percent to reach a level of 49.3. The prices index dropped 4.9 percent to a level of 52.1.

Hon Hai Sales Surpass Escalating Estimates

Hon Hai Precision Industry Co's second-quarter sales outperformed analysts' rising expectations on the strength of the company's growing artificial-intelligence (AI) server business.

The iPhone assembler, also known as Foxconn said that its revenue last month was NT\$490.7 billion (US\$15.1 billion), making for a total of NT\$1.55 trillion for the quarter, up 19 percent. An average of analyst estimates pointed to a 13.8 percent rise, with expectations growing after Hon Hai said a month earlier that it expected the AI business to help it beat estimates for the quarter.

Hon Hai said revenue last quarter marked the strongest second quarter performance in the company's history and greatly exceeded its own expectations.

Gartner Forecasts Worldwide IT Spending to Grow 7.5% in 2024

Worldwide IT spending is expected to total \$5.26 trillion in 2024, an increase of 7.5% from 2023, according to the latest forecast by Gartner, Inc. This is a decrease from the previous quarter's forecast of 8% growth, but an increase of the overall spend forecast of \$5.06 trillion.

"Generative AI (GenAI) is being felt across all technology segments and subsegments, but not to everyone's benefit," said John-David Lovelock, Distinguished VP Analyst at Gartner. "Some software spending increases are attributable to GenAI, but to a software company, GenAI most closely resembles a tax. Revenue gains from the sale of GenAI add-ons or tokens flow back to their AI model provider partner."

Data Center Systems Spending Booms Under GenAl

Spending on data center systems is expected to increase 24% in 2024, up from the previous quarter's forecast of 10% growth. This is due in large part to increased planning for GenAI.



IT services spending is now projected to grow 7.1% in 2024, down from 9.7% within the last forecast, due in part to slower spending across subsegments that include consulting and business process services.

China Nationalizes Rare Earth Resources

China introduced stringent regulations on rare earth elements, effective from October 1.

The rules assert state ownership of rare earth resources, prohibiting unauthorized exploitation or damage. They mandate protective mining practices and establish a management framework overseen by key ministries.

According to Xinhua, the South China Morning Post, and Reuters, on June 29, China introduced stringent regulations governing the mining, smelting, and trade of rare earth elements, underscoring their critical role in national security and industrial strategy. Issued by the State Council of China and set to take effect on October 1, these regulations assert that rare earth resources are state-owned, with strict controls aimed at protecting their supply chain.

The regulations, signed by Chinese Premier Li Qiang and consisting of 32 articles, state that rare earth resources belong to the state, prohibiting any organization or individual from encroaching upon or damaging these resources.

China will implement protective mining practices for rare earth resources and enhance the management framework. The regulation assigns responsibilities to relevant departments under the State Council, including the Ministry of Industry and Information Technology and the Ministry of Natural Resources, for rare earth management. It also specifies that local governments at or above the county level are responsible for related rare earth management within their respective regions.

China Dominates Global Automobile Exports in 2023 as EV Demand Surges

China's automobile exports have shown significant growth in recent years, with the export volume reaching 5.22 million units in 2023, nearly 800,000 more than Japan's, making China the world's largest automobile exporter. According to DIGITIMES Research's latest report covering China's automobile exports, China's automobile export shows several obvious characteristics such as rapidly rising volume and value, electric vehicles becoming mainstream models, and diversifying export markets.

In the past, Japan was a major automobile-exporting country until China overtook it in 2023, when China's automobile exports reached 5.22 million units, surpassing Japan by nearly 800,000 units. Historical data shows that China's automobile exports broke the one million mark in 2018 and began gaining momentum until after 2021, with the export volume for 2023 being 4.5 times higher than that of 2018, the report's figures showed.

The rapid growth was attributed to the saturation of the Chinese automobile market and changes in the structure of export vehicles and regions. These changes also led to the rise of the average export price of Chinese automobiles to CNY137,000 (US\$19,180) in 2023.

Electric vehicles (EVs) have become the main growth driver of China's automobile exports. Their export volume increased from 147,000 units in 2018 to 1.77 million units in 2023, a 12.1-fold increase in six years, far exceeding the 4.5-fold increase in total automobile exports.

The proportion of EVs relative to total automobile exports has also increased yearly, reaching 34% in 2023. This indicates the competitiveness and growth potential of China-made EVs in overseas markets.



Furthermore, DIGITIMES Research has observed differences in demand for various types of automobiles in the top ten export outlets of Chinese automobiles in 2023. For example, the top two export destinations, Russia and Mexico, primarily demanded fuel vehicles, whereas Europe and Southeast Asia preferred EVs.

Notably, Europe's mature EV market attracted Chinese companies to enhance their presence there, and in Southeast Asia, Chinese companies held an approximately 80% share in the EV market in Thailand in 2023. These regions have become important destinations for Chinese EV exports.

China-built EVs Hit with EU Tariffs

The European Union confirmed its decision to hike tariffs on electric vehicles imported from China.

The European Commission, the executive arm of the European Union, announced plans for such levies in June after concluding in an investigation that producers of battery EVs in China benefit from "unfair" subsidization.

European regulators confirmed that these duties, which have been lightly tweaked to range from 17.4% to 37.6%, will come into effect soon. The levies will affect automakers from Chinese giant BYD to, potentially, European brands that make cars in China, and even U.S. giant Tesla, which has a factory in Shanghai.

The EU's decision comes at a time when Chinese automakers have been aggressively expanding into Europe with competitively priced offerings, posing a threat to the region's top automakers, many of which have lagged behind in EVs. The European Commission says these carmakers have benefitted from "unfair subsidization."

New Google Report Reveals the Hidden Cost of Al

Energy consumed by data centers and Google's supply chain contributed most to the increase. Google wants to get to net zero emissions by 2030, but its AI investment is making its environmental commitment more challenging.

Google released its 2024 environmental report and reported a nearly 50% increase in greenhouse gas emissions within the span of four years. In 2023, the tech giant's emissions totaled 14.3 million tonnes of carbon dioxide equivalent, a 13% increase from 2022 and a 48% increase since 2019.

Energy consumed by data centers and Google's supply chain contributed most to the increase.

Xiaomi Unveils New Autonomous Smart Factory That Operates 24/7 Without Human Labor

In what could be a worrying sign of things to come, Chinese phone maker Xiaomi has built a new autonomous smart factory that can not only make 10 million handsets per year but can also identify and correct production issues while optimizing the entire process.

Xiaomi CEO Lei Jun said the 860,000-square-foot facility, located in the Changping district on the northeast outskirts of Beijing, follows a lab-level smart factory built in 2019 that produced around 1 million phones per year – it handled the entire production of the Xiaomi Mix Fold.

The new facility is described by Jun as a truly automated mass-production factory. It features 11 production lines, able to produce the company's upcoming flagship MIX Fold 4 and the MIX Flip phones at a constant rate of one every few seconds.

These types of 24/7 factories aren't new, but Xiaomi's facility further reduces the need for human workers by using AI to identify and solve any issues that may appear during production.



Robots have been replacing factory workers for a couple of decades now; one of the largest cuts came in 2016 when Foxconn reduced its workforce by 60,000 by swapping them out for unpaid machines that toil 24/7. But Xiaomi's smart factory takes automation to the extreme by potentially replacing those who would diagnose or fix problems with the production and help optimize processes.

It's not just manufacturing plants where robots are taking human jobs. Amazon has recently started ramping up the use of autonomous machines in its fulfillment centers and warehouses, from 350,000 robots in 2021 to more than 750,000 by June 2023.

Chrome Proves to be the Fastest Browser, But is it the Best?

The first attribute most people want in a browser is speed – waiting even three or four extra seconds for a page to load can seem an eternity in internet time. If that is the only thing important to you, then look no further than Chrome, which beat five other browsers in tests for web page rendering, JavaScript and graphics. But there are other considerations, too, starting with Chrome's habit of collecting a voracious amount of user data.

How fast a web page loads depends on many factors, starting, of course, with your broadband speed. But the browser you are using can have a significant impact as well, as PCWorld set out to prove.

Browsers such as Chrome, Firefox, or Safari will perform differently when interpreting HTML, executing scripts, or loading graphics and videos, contributor Steffen Zellfelder pointed out. To find out which browser performed best at these tasks, the publication tested them on a mid-range system that featured an AMD Ryzen 5 3600 CPU, Nvidia RTX 3060 Ti graphics, 16 GB of DDR4-3200 memory, and a Samsung 970 Evo SSD. For the operating system, it opted for Windows 10 version 22H2.

Zellfelder put Google Chrome, Mozilla Firefox, Opera, Microsoft Edge, Brave, and Vivaldi through their paces using three benchmark tools: Speedometer 3.0, Jetstream2 and Motionmark 1.3.

Speedometer tests web page rendering. Jetstream is more focused on assembly and JavaScript. To perform well in this test, browsers must start quickly and not waste time executing code. Motionmark tests in-browser graphics, which means the browsers have to fulfill complex tasks and achieve a certain frame rate in complex animations.

The bottom line is that Chrome came first in Speedometer and second in the other two benchmarks by a very thin margin. PCWorld dubbed Google's browser the clear winner – especially as it was only a few points short of taking first place three times.

But there are other considerations when selecting a browser. As PCWorld noted, Google's business model is based on data processing and Chrome collects a disproportionate amount of user data. Meanwhile, Firefox, which came in last place for Jetstream and the graphics benchmark, makes data protection a priority.

Security is also an important factor to most users who want to see robust features and frequent updates to protect against threats. In this case, Brave has been ranked as one of the most secure browsers available. Also, if you use multiple devices, a browser that can sync bookmarks, passwords, and browsing history across platforms would be important to you. Here, Chrome is a leading candidate as it has built-in sync functionality that is easy to turn on.

And while the average web surfer may not be interested in this, market share can be important too, as the more popular browsers often have better support and compatibility with websites.



Samsung's New Foldables Boosted by Al, Annual Sales Growth to Exceed 20%

On July 10, Samsung Electronics unveiled its new generation of foldable smartphones. Samsung announced the Galaxy Z Fold 6 and Flip 6 series, along with new products such as the Galaxy Watch Ultra, Galaxy Watch7, and the true wireless Bluetooth earphones Galaxy Buds3 Pro and Galaxy Buds3. Following the announcement, Samsung partnered with telecom and distribution partners to outline pre-sale and sales plans for these products on July 11.

Jacob Chen, President of Samsung Taiwan's Mobile Communications Division, stated that with hardware upgrades and the support of Generative AI (GenAI), the overall sales of the new foldable smartphones in 2024 are expected to grow by more than 20% compared to the Galaxy Z Fold 5 and Flip 5 series in 2023.

The prices of the new foldable smartphones are nearly NT\$3,000 (US\$92.26) higher than last year's models. Chen explained this increase is mainly due to hardware upgrades and exchange rates. However, Samsung plans to launch promotional programs and enhance consumer experiences with GenAl to stimulate sales.

All Eyes on Al to Drive Big Tech Earnings

The quarterly results of tech giants will offer a glimpse of the bankability of artificial intelligence (AI) and whether the major investments AI requires are sustainable for the long haul.

Analysts at Wedbush Securities Inc, one of Wall Street's biggest believers in Al's potential, expect "growth and earnings to accelerate with the Al revolution and the wave of transformation" it is causing.

The market generally agrees with this rosy AI narrative. Analysts forecast double-digit growth for heavyweights Microsoft Corp and Google, in contrast to Apple Inc, a latecomer to the AI party, with only 3 percent growth expected.

The iPhone maker unveiled its new Apple Intelligence system only last month and plans to roll it out gradually over the next months, and only on the latest models.

CFRA Research analyst Angelo Zino said Apple's upcoming earnings would show improvement in China sales, a black spot since last year.

Zino said he was a little bit more concerned about Meta Platforms Inc, which raised its investment projections in April last year as it devoted a few billion dollars more on the chips, servers and data centers needed to develop generative AI.

CFRA expects Meta's growth to decelerate through the end of the year. Combined with the expected increase in spending on AI, that should put earnings under pressure.

As for the earnings of cloud giants Microsoft and Amazon, "we expect them to continue to report very good results, in line with or better than market expectations," Zino said.

Microsoft is among the best positioned to monetize generative AI, having moved the fastest to implement it across all its products, and pouring US\$13 billion into OpenAI, the start-up stalwart behind ChatGPT.

Bishop & Associates has released a new 221-page five-chapter research report providing a detailed analysis of the worldwide market for rectangular input/output connectors. This timely report furnishes sales data by region for the years 2022, 2023, 2024F, and forecasts for 2029F, broken down by key applicable connector types.



The world rectangular I/O connector market is complex and diverse. While products developed several years ago including D-subs, micro-, nano-, and Thunderbolt connectors are experiencing growth, a few are in rapid decline, while several newer products are expanding fast including small form factor types (SFP, SFP+, etc.) HDMI, and other multi-media connectors, M.2 packaging for solid state drives, etc. To illustrate technology, production now includes M24308 D-sub equivalents with RF performance to 110 GHz -- *in standard Size 20 contact cavities* -- for 5G, SATCOM, radar, and test instrumentation.

The report covers sales data for 2022 and 2023 with sales forecast for 2024F and 2029F, for primary types of rectangular connectors, and -- for the first time -- data also *includes sales of cable assemblies, reviews distribution, and analyzes major counterfeiting problems.* The report covers US and international specifications applicable to rectangular I/O connectors. Major manufacturers are listed with reviews of key suppliers.

Both technology and economics have pushed rectangular I/O connectors to the forefront of increased application use. Rectangular (or square) connectors can offer over 21% more space than equivalent circular connectors. SWaP-C prompts for density gain and weight reduction have led to EN4165 replacing D38999 circulars and rectangular EN3682 and EN4644 giving ARINC 600 real competition for newer airframe and ground vehicle communication interconnection. Major appliance connectors are improving reliability by incorporating interconnect reliability position assurance concepts used by automotive connectors. White goods growth is prompting sales of RAST and glowwire connectors. Computers, vehicles, and even weapon systems are incorporating USB-C within a variety of enclosures.

This report is intended for use by those interested in forecasting rectangular I/O and power rectangular connectors by product and industry trends, or for benchmarking comparative sales by product or worldwide versus regional markets. Content includes information on creative specials that will become tomorrow's standards. To be prepared for future growth in this key product area, order your copy of the *Rectangular Input/Output Connector Market 2024*.

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To Order The Rectangular Input/Output Connector Market - 2024



Research Report P-520-24, *The Rectangular Input/Output Connector Market – 2024* is available for \$5,285. If you would like additional information about this report, or would like to place an order, please complete the following information, and e-mail, or mail it to Bishop & Associates, Inc. To place your order on our website: https://bishop-research.com/.

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Online Store: https://bishop-research.com/

What's New?

Bishop & Associates has recently completed several new research reports about the worldwide connector industry. A table of contents for each report can be found at https://bishop-research.com.

Report P-520-24	The Rectangular Input/Output Connector Market 2024 (July 2024) NEW
Report F-2024-01	Connector Industry Forecast (June 2024) NEW
Report C-122-24	Connector Industry Yearbook (June 2024) NEW
Report M-700-24	World Connector Market Handbook (March 2024) NEW
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Report P-606-23	Connector Types and Technologies Poised for Growth (October 2023) NEW
Report M-121-23	2023 Top 100 Connector Manufacturers (August 2023) NEW
Report M-720-23	European Connector Market 2021, 2022, 2023F and 2028F (June 2023) NEW
Report P-430-23	World Circular Connector Market 2023 (May 2023)
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Report M-1200-22	Military Ground Vehicle Market for Connectors (October 2022)
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Report M-310-21	Instrumentation Market for Connectors (June 2021)
Report P-410-21	Computer Server Market Trends and Connector Use 2020 – 2030 (May 2021)

THE BISHOP REPORT - CONNECTOR INDUSTRY YEARBOOK

An annual corporate subscription to <u>THE BISHOP REPORT</u> (12 issues) is available for \$2,950, which includes an unlimited number of subscribers and one PDF version of the *Connector Industry Yearbook* report (normally \$1,500). *The Bishop Report* subscription includes access, through <u>Bishopinc.com</u>, to prior issues of The Bishop Report, 30-40 yearly News Briefs, Industry Financial Benchmarks, and various connector industry indices.

<u>Click here</u> to view the expanded report description, and complete table of contents, for all Bishop & Associates' research reports.



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