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IS YOUR SUPPLY CHAIN READY FOR A PROTRACTED TRADE WAR?

The last couple of years have been a boon for the electronics industry. Whatever statistic you look at—financial performance, semiconductor and semiconductor equipment production, book-to-bill ratios, distributor TAM, employment—the data tells a story of solid and sometimes spectacular growth.

Intel's Interim Chief Executive Robert Swam perhaps captured it best late last month in his comments on the company's third-quarter earnings call. "This summer we celebrated our 50th anniversary," he said, according to a Motley Fool transcript. "And this quarter was the best quarter in our 50-year history."

Swan attributed Intel's record $19.2 billion third quarterly revenue in large part to "incredibly strong demand" and commented that the fourth quarter looks equally bright.

While part of Intel's results can be attributed to savvy decision making, the company is just one of many boats that have been lifted by the rising tide of economic growth in the U.S. and around the world over the last couple of years. According to the International Monetary Fund, global economic growth was 3.7% in 2017; the same growth rate is expected for this year, as well as for 2019.

The IMF forecasts GDP growth of 2.9% this year for the US, up from 2.2% last year. China grew at a 6.9% rate in 2017 and is expected to post a 6.6% growth rate this year. However, most countries and economic regions will see lower GDP growth rates in 2019, according to the IMF (Fig. 1).

On the downside, there are looming threats that include the drag on economic growth from continued trade wars, the weaker outlook for some key emerging markets and developing economies, tighter financial conditions as a result of rising interest rates, worsening geopolitical tensions, and the rising cost of oil. For example, if the U.S. continues its trade war with China, the IMF forecasts U.S. GDP growth would decline by 0.9%, and China's would decline by 0.6% over the long term.

1. Global Economic Growth is Expected to Moderate in 2019

Source: International Monetary Fund, Custer Consulting Group

Clouds on the horizon

There's a cause-and-effect connection between economic growth and corporate performance. Consider Intel. After two years of stunning growth, the company's outlook for 2019 is a bit less spectacular. CEO Swan identified growing competition as one critical "headwind" which he said Intel is prepared for. However, another more threatening headwind is the uncertainty surrounding global trade. "We have some important customers [in China], and it's an important part of our global supply chains," he told analysts last month.

While Intel is working with its customers to make sure its supply chain can adapt to new tariffs imposed on China by the Trump Administration, Swan admitted that it's going to be a wait-and-see game as Intel enters 2019. He's counting on the company's world-class supply chain team, which he claims is a competitive advantage, to weather any disruptions to the movement of goods around the world.

Intel is not alone in its concern about the impact of geopolitics on its supply chain. Texas Instruments, which reported third-quarter results in October, warned of a weaker-than-expected fourth quarter as a result of slowing demand. TI anticipates that customers may be concerned about a possible entrenched trade war between the U.S. and China, according to a company spokesperson.

And for good reason: While China's Premier Xi Jinping has promised to lower import tariffs and improve access to the Chinese market, the Trump Administration is holding fast to its threat of another round of tariffs in December unless China cleans up its act when it comes to protection of intellectual property and market access. The confrontation between the world's two largest economies raises business uncertainty, which threatens business performance and has roiled stock markets around the world in recent months. The S&P 500 lost $1.9 trillion in October alone, which was the worst month for the S&P since September 2011.

Contributing to the tension, the Trump Administration in October announced it was restricting exports to Fujian Jinhua Integrated Circuit Company, a Chinese semiconductor company with ties to the Chinese government. The company will no longer be able to buy components from American companies without a special license, according to the U.S. Commerce Department—citing national security concerns—as reported by CNN.

The U.S. is scheduled to announce tariffs on all remaining non-tariffed Chinese products by early December if talks between Presidents Donald Trump and Xi Jinping at the G20 in Argentina are unsuccessful. Based on trade figures from 2017, that would mean new tariffs on about $257 billion worth of Chinese goods. If announced in early December, the tariffs would likely take effect in February 2019.

Expectations are low that the tariffs will be averted based in part on a speech in early November by Xi where he said, "In a world of deepening economic globalization, practices of the law of the jungle and winner takes all only represent a dead end."

The impact of the tariffs may be softened somewhat by the recent depreciation of the Chinese yuan, which makes Chinese goods cheaper for U.S. buyers. The currency has lost 6% of its value against the U.S. dollar so far this year, caused in part by China's slowing economy and pressure on exports due to the tariff tussle with the U.S. It is hovering just below the psychologically critical rate of 7 yuan to the dollar, which analysts believe the Chinese government will not allow it to exceed.

Contributing to the trade risks is the United States-Mexico-Canada Agreement (USMCA), which was signed by the presidents of the three nations in October, but still has to be ratified by the their respective legislatures. While ratification is likely, it is not a foregone conclusion. Mexico's incoming left-leaning president, Andres Manuel Lopez Obrador,

was critical of Trump on the campaign trail. Canada has an election in 2019 which could impact the debate, and there is potential for some pushback from the new U.S. Congress in the new year.

One issue of concern is Clause 32 Section 10 of the USMCA, which allows any one of the three countries to pull out of the agreement if they pursue a separate free trade agreement with a "nonmarket country," as reported by the Washington Post.

"[The clause] sent a very strong signal to the rest of the world that you're either with us versus China, or you're against us," said Jorge Guajardo, a former Mexican ambassador to Beijing, as quoted by the Washington Post. "Beijing should be very concerned."

The go-it-alone stance of the Trump Administration on trade is very different than the approach being taken by the EU. Thanks to the EU-China 2020 Strategic Agenda for Cooperation, the EU is China's largest trading partner, and China is the EU's second largest trade partner after the United States. The navies of China and the EU conducted a first-ever joint exercise in October in the Gulf of Aden, a vital waterway that links the Arabian Sea and the Red Sea to the Mediterranean through the Suez Canal.

The EU is also an early beneficiary of China's Belt and Road initiative, a multiyear supply chain infrastructure project aimed to extend and elevate China's global presence. On April 26, a freight train arrived in the port city of Antwerp, Belgium after traveling 6,800 miles in 16 days across Kazakhstan, Belarus, Poland, and Germany from the Chinese port city of Tangshan. The direct rail link complements traditional shipping lines and is expected to lower logistics costs and strengthen the EU's links with China. All told, the Belt and Road initiative could cost 12 times more than the U.S. post-Second World War Marshall Plan.

At the same time, the EU has been plowing ahead with multilateral free trade agreements (FTAs) with South Korea, Japan, Vietnam, Singapore, non-EU nations in Europe, and countries in Africa and Latin America. The Japan deal alone is expected to reduce tariffs for EU exporters by $1.2 billion, according to the European Commission. Also, the EU-Canada free trade agreement was ratified this year, and the EU and India are discussing a proposed FTA.

Casting a long shadow over the EU's commitment to multilateralism is Brexit. With Britain's official exit date set for March 29, 2019, there are still a number of hurdles to get over, including the terms of the exit and ratification by both the UK and EU governments. The standstill has increased business uncertainty in the UK and brought investment to a halt. The Confederation of British Industry's measure of business optimism had fallen from −3 to −16 in the past three months—the fastest rate of decline since the immediate aftermath of the Brexit referendum in June 2016, according to Ernst & Young.

In contrast, the general mood across the U.S. manufacturing sector (including electronics) remains cautiously upbeat, according to the Institute for Supply Management's October procurement management index (PMI) survey of U.S. purchasing and supply executives. Overall, manufacturing continued to expand in October, albeit at the lowest level since April 2018. The index of new orders dropped below 60% for the first time since April 2017 and consumption softened compared to the prior month, even as production and employment expanded (Fig. 2).

The slowing of the growth trend is reflected in the latest IPC book-to-bill data, which indicates a steady decline in the ratio from a 12-year high of 1.17 in February to 1.04 in September. "A negative year-over-year growth rate for PCB orders in September after 15 months of continuous order growth might be the first sign of a slowdown," said Sharon Starr, IPC's director of market research.

China's November PMI reflects similar sentiments, according to IHS Markit. Operating conditions in the manufacturing sector, including production and new business, were little changed from October. However, export sales declined for the seventh month in a row, and the relatively soft market conditions contributed to a modest drop in workforce numbers. And while buying activity rose slightly, the overall confidence in the business outlook for output dipped to an 11-month low.

Amidst the growing unease over a pending trade war, fractious geopolitics, and decelerating GDP growth, tech companies need to be prepared for the potential risks they might face. This means being agile enough to adapt quickly to changes in government regulations; data security and transfer; changing rules about usage of intellectual property and acquisitions; and access to raw materials and parts for exports. This is particularly important for procurement and supply chain executives responsible for managing networks of global suppliers.

2. Slowing Growth for U.S. Manufacturing Sector

MANUFACTURING AT A GLANCE
OCTOBER 2018

Index	Series Index Oct	Series Index Sep	Percentage Point Change	Direction	Rate of Change	Trend* (Months)
PMI®	57.7	59.8	-2.1	Growing	Slower	26
New Orders	57.4	61.8	-4.4	Growing	Slower	34
Production	59.9	63.9	-4.0	Growing	Slower	26
Employment	56.8	58.8	-2.0	Growing	Slower	25
Supplier Deliveries	63.8	61.1	+2.7	Slowing	Faster	25
Inventories	50.7	53.3	-2.6	Growing	Slower	10
Customers' Inventories	43.3	40.5	+2.8	Too Low	Slower	25
Prices	71.6	66.9	+4.7	Increasing	Faster	32
Backlog of Orders	55.8	55.7	+0.1	Growing	Faster	21
New Export Orders	52.2	56.0	-3.8	Growing	Slower	32
Imports	54.3	54.5	-0.2	Growing	Slower	21
OVERALL ECONOMY				Growing	Slower	114
Manufacturing Sector				Growing	Slower	26

Manufacturing ISM® *Report On Business®* data is seasonally adjusted for the New Orders, Production, Employment and Supplier Deliveries Indexes.
*Number of months moving in current direction.

Source: Institute for Supply Management

Consider China's semiconductor production aspirations codified in its Made in China 2025 industrial policy that is fast-tracking investment in semiconductor manufacturing. This year, China is expected to supply 16% of the world's front-end semiconductor fab capacity, which is forecast to increase to 20% by 2020, according to SEMI.

The policy extends to semiconductor equipment as well: There are 25 new fab construction projects underway or planned today in China. And China is expected to claim the top spot in the equipment sector by 2020—in large part to support its growing domestic chip manufacturing capability, SEMI reports.

Tactics for a Changing World

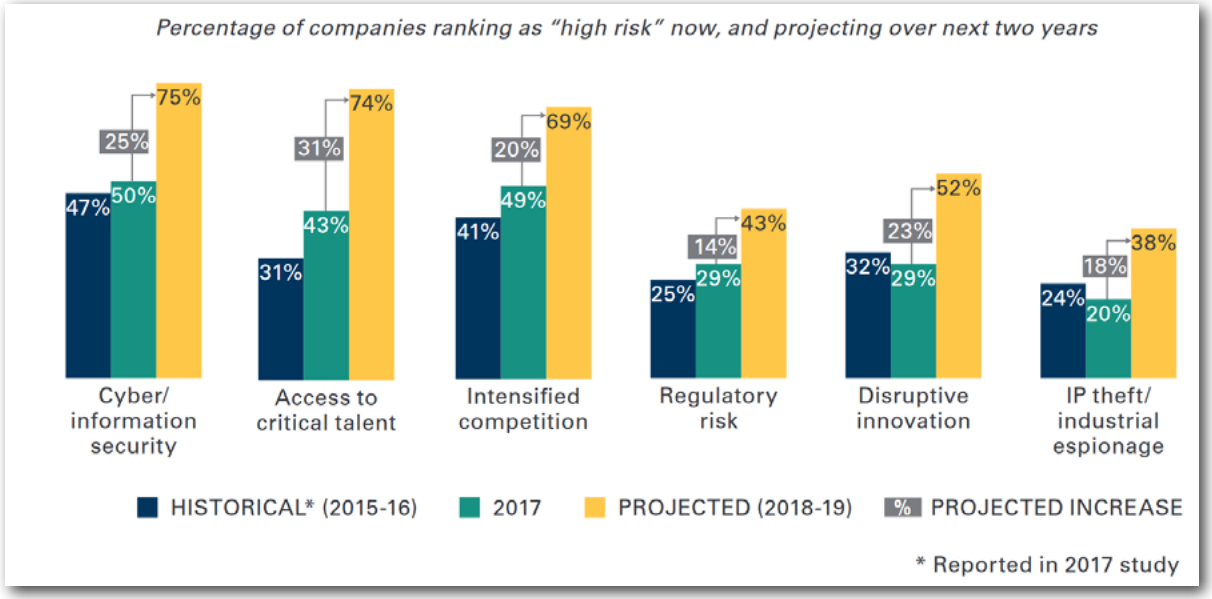
So, what happens if a trade dispute or an incident of IP theft between the U.S. and China boils over into a political standoff? The tit-for-tat retaliatory battle could potentially escalate to China and/or the U.S. restricting the sale of critical semiconductors, or perhaps something worse. What would be the impact on the supply chain? How long would it take for a U.S. distributor or OEM to secure parts from an alternative source? Would an alternative even be possible, given China's aspiration to grow its market share of electronic components?

Becoming more agile is part of the answer for supply chain and procurement organizations. McKinsey & Co defines agility as the ability of an organization to renew itself, adapt, change quickly, and succeed in a rapidly changing, ambiguous, and sometimes turbulent environment. Agile requires flexible teams, including teams of contractors, who can make rapid decisions.

Of course, rapid decision making must be based on accurate information, which requires robust data. So, increasing agility requires an organization to advance from proficiency in basic digital tools—such as data visualization and social-media-based collaboration—to literacy in advanced digital tools such as artificial intelligence (AI) and machine learning (ML). The need is particularly acute for sourcing, procurement, and supply chain organizations, which all need to apply more advanced digital technologies to remain competitive, according to a recent McKinsey & Co survey.

This isn't news to anyone in the trenches. Most corporate procurement organizations are well aware that geopolitical shifts are exposing them to certain types of new threats. Some of these escalating risks were captured in a 2018 study conducted by The Hackett Group, including cybersecurity and IP theft, regulatory risk, and intensifying global competition. (See Figure 3.)

3. Geopolitical Shifts Add Risk for Procurement Organizations

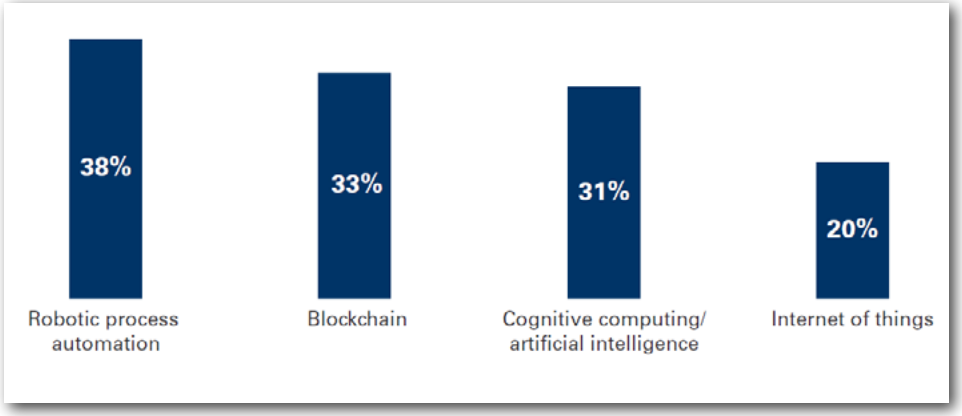


Source: Key Issues Study, The Hackett Group 2018

AI and ML algorithms can help supply chain and procurement management organizations understand relationships between disparate sets of data so they can anticipate threats, new competitors, or even regulatory risks; this allows them to make decisions faster and cheaper. However, the tools are useless without large volumes of both structured and unstructured data. IoT networks are one important new source for delivering this data. From sensors on production equipment in factories and chip foundries to distributor warehouse shelves and shipping containers, IoT networks can deliver timely insight on work in progress, finished goods, and parts in transit.

Combining AI and robotic process automation (RPA) can not only accelerate decision-making but lower its cost, increasing its reliability and repeatability. According to The Hackett Group, a growing number of procurement organizations are piloting advanced technology tools (Fig. 4.).

4. Percentage of Procurement Organizations Piloting Digital Technology



Source: Key Issues Study, The Hackett Group 2018

The use of RPA is projected to grow by a factor of 4.5X in the next two to three years from 7% of procurement organizations surveyed to 30%, according to The Hackett Group.

Blockchain effectively secures transactions across the supply chain, including authenticating customs declarations and validating contracts. Blockchain establishes a tamper-proof mechanism to establish provenance, trust, and transparency, and its application is expected to rise sharply from 9% today to 35% of procurement organizations surveyed by The Hackett Group.

Of course, technology for its own sake is not the solution. Business requirements must drive investments in both technology and staff skills required to manage the supply chain to ensure global growth in challenging times. With the next round of U.S. tariffs on China due to be imposed next month, it's a good time to review those investment plans.

By Bruce Rayner, Contributing Editor