

The logo for Accenture Strategy, featuring the word "accenture" in a lowercase sans-serif font with a small chevron symbol above the 'u', followed by "strategy" in a similar font. The background of the entire page is a vibrant red color with a white circuit board pattern consisting of various lines, paths, and circular nodes.

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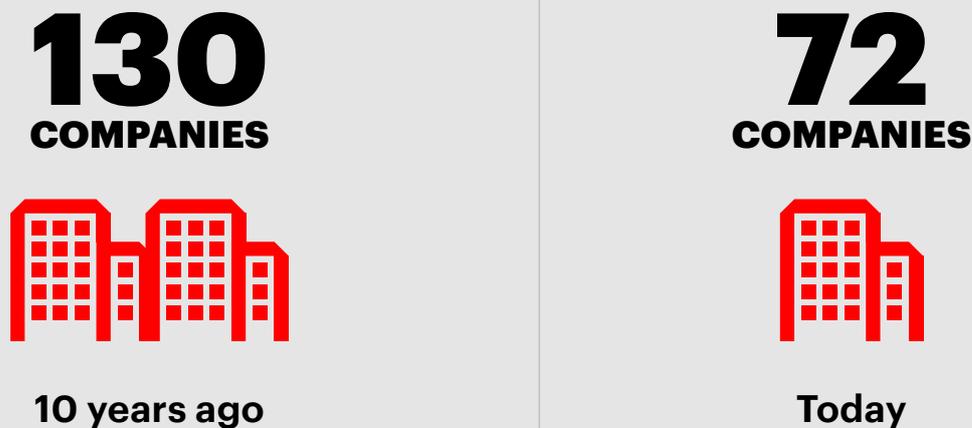
RECHARGE SEMICONDUCTOR GROWTH WITH M&A

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Traditional organic growth in the semiconductor industry is dead. The rising cost of R&D, the speed of technology turnover and a more demanding, diverse customer base all compress the available time and funds that used to fuel organic growth. Instead, leading companies are using M&A as a growth strategy.

Leaders at core semiconductor companies see opportunity at every turn for a broader product portfolio—from providing connectivity solutions in cars, to technology companies' push for Artificial Intelligence (AI) support. But they need the resources and capabilities to take advantage of those opportunities. M&A can help get them there.

Consolidation in the semiconductor industry



Source: Accenture analysis of GCA data, 2018. Represents U.S.-based public semiconductor companies with a market cap greater than US\$100M. Today represents 12/31/18.

WHAT'S CHANGED

Several factors are driving M&A activity in the semiconductor industry.

Customer expectations. As customer expectations multiply, satisfying a new list of demands for chips becomes more complex. As cars become intelligent machines, new requirements are placed on chips—from long lifespan to quality. And a new breed of consumers wants devices that do more. They desire a mobile device that enables virtual or augmented reality—one that syncs via the Internet of Things with the other smart products in their home or office. Semiconductor companies will need to look outside their own walls to satisfy broader and more sophisticated applications in a range of industries.

Design windows. To take advantage of these opportunities, companies must house sophisticated, diverse R&D for new chip applications, with short design windows. Semiconductor companies do not have the luxury of time to master the learning necessary, as competitors move quickly to create growth for themselves. Acquiring expertise is the only feasible option. And with talent scarce, that means acquiring a company that brings that expertise.

Cost of R&D. Acquiring is also the logical move due to the rising cost of R&D, which is essential to stay current in an industry that continuously and rapidly evolves. With the design cost by technology node increasing dramatically—a 10x increase from 28nm to 5nm¹—companies are searching for a solution to not only stay current, but expand R&D to cover broader product portfolios.

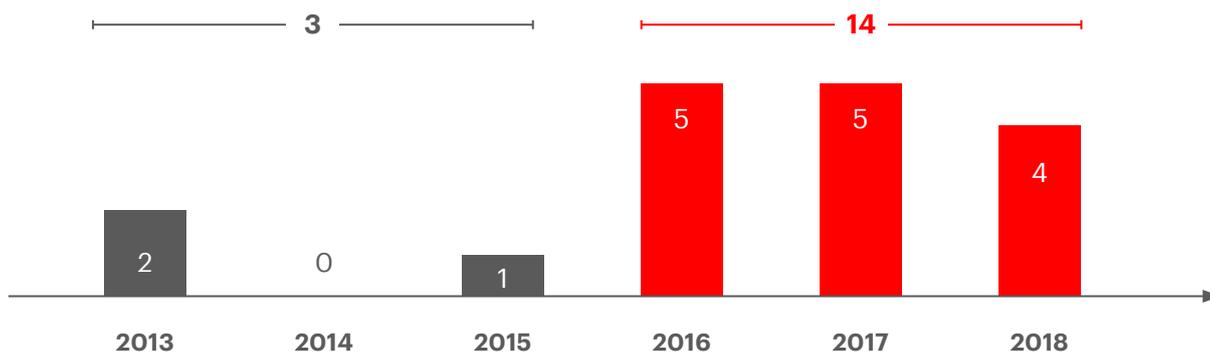
M&A—while a seeming prescription for growth—comes with its own set of challenges specific to semiconductor firms. Semiconductor companies should not look to use a traditional M&A approach in such an untraditional industry. Instead, leaders need to carefully consider the geopolitical climate, making it a key factor when selecting M&A targets. While they master that ever-changing landscape, they also need to look at companies outside the industry as the new competition for plum targets. If they can do both, at speed, they will be well on their way to bringing those targets into the fold to create growth in an industry that begs for it currently.

KNOW YOUR GEOPOLITICS

Geopolitical factors mandate next-gen M&A in the semiconductor industry—meaning companies should define acquisition targets by taking location into account as never before.

Just three deals were blocked or lapsed due to government intervention or regulatory restrictions from 2013 through 2015. But from 2016 through 2018, that number multiplied, rising to 14 deals that fell through.

The number of deals that were blocked or lapsed is on the rise



Source: Accenture Strategy analysis of Mergermarket data, 2018.

In a 5G world where semiconductors play a key role as the building blocks of AI and the Internet of Things, virtually all devices are connected—from industrial equipment to fleet sensors, consumers' cars to home thermostats. This reality is already bringing increased security concerns from nation states, at a time when countries are invested in protecting their own intellectual property to build and preserve technology prowess.

Security is currently the most threatening geopolitical factor by far in terms of suppressing semiconductor deals. In the wake of chip vulnerabilities like Meltdown and Spectre—in a 5G world—security concerns across geopolitical borders become even more intense. When virtually everything is connected, cyber-trust for key infrastructure components produced outside of a nation state becomes difficult.

Governments have blocked several large deals recently, citing security concerns and uncertainty over ownership structure. Even in cases where deals have not been blocked, the larger the deal, the longer the delay.

The larger the deal, the longer the delay tends to be



Source: CapIQ, 2019; Bubble represents deal size.
Note: The 2016 outlier was Softbank's acquisition of ARM Holdings, which is an external player acquiring into the market

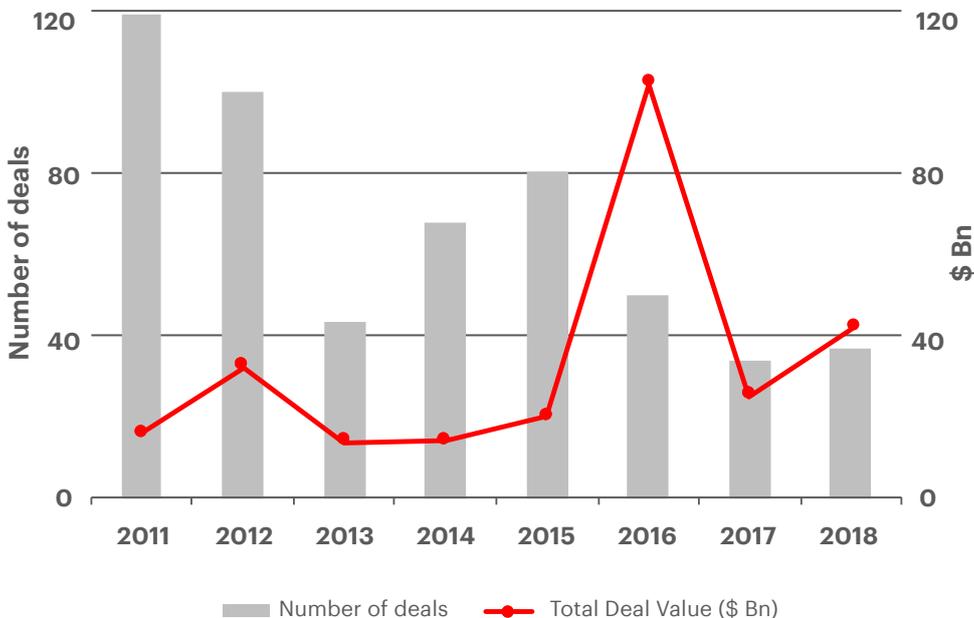
EXPECT THE UNEXPECTED

Companies in a variety of industries are moving up and down the technology stack to control more elements of their cost structure and design ecosystem.

As a result, semiconductor companies' main competition now comes from outside their own industry. Many leading technology companies, for instance, have acquired companies so they can make their own custom chips.

They are not alone. Eight out of 10 high-tech companies surveyed reported they acquired at least one company in the past two years. Three in 10 completed five or more acquisitions during the same time period.² While the number of semiconductor deals have declined over the last decade, deal value reached a record a high of \$101B in 2016 and average deal value has continued to rise in recent years.

Semiconductor M&A spending continues despite decline in deals



Source: Accenture analysis of GCA data, 2018

2.5x
**AVERAGE
DEAL VALUE**

2015-2018 vs. 2011-2015

A CHANGING WORLD REQUIRES **NEXT-GEN M&A**

Semiconductor companies are at the core of a growing number of changes in numerous industries and the world as a whole, which means their overall business strategy must change.

As they use M&A as a tool to help them transform their business to enter new industries, markets and geographies, their approach to M&A must change rapidly.

Accenture Strategy sees semiconductor companies using M&A for three major reasons to help them better equip themselves for the future:



GROWING THE CORE

Some companies pursue growth via expansion in existing markets and customer segments, across an existing product set or within a customer market. These companies may also be divesting assets in non-core business areas. For example, Cadence has initiated a significant amount of M&A, closing 10 transactions since 2012 with overall success. Since the acquisitions started in 2012, Cadence stock has increased from around US\$10 per share to over US\$68.³



MIGRATING TO ADJACENT BUSINESSES

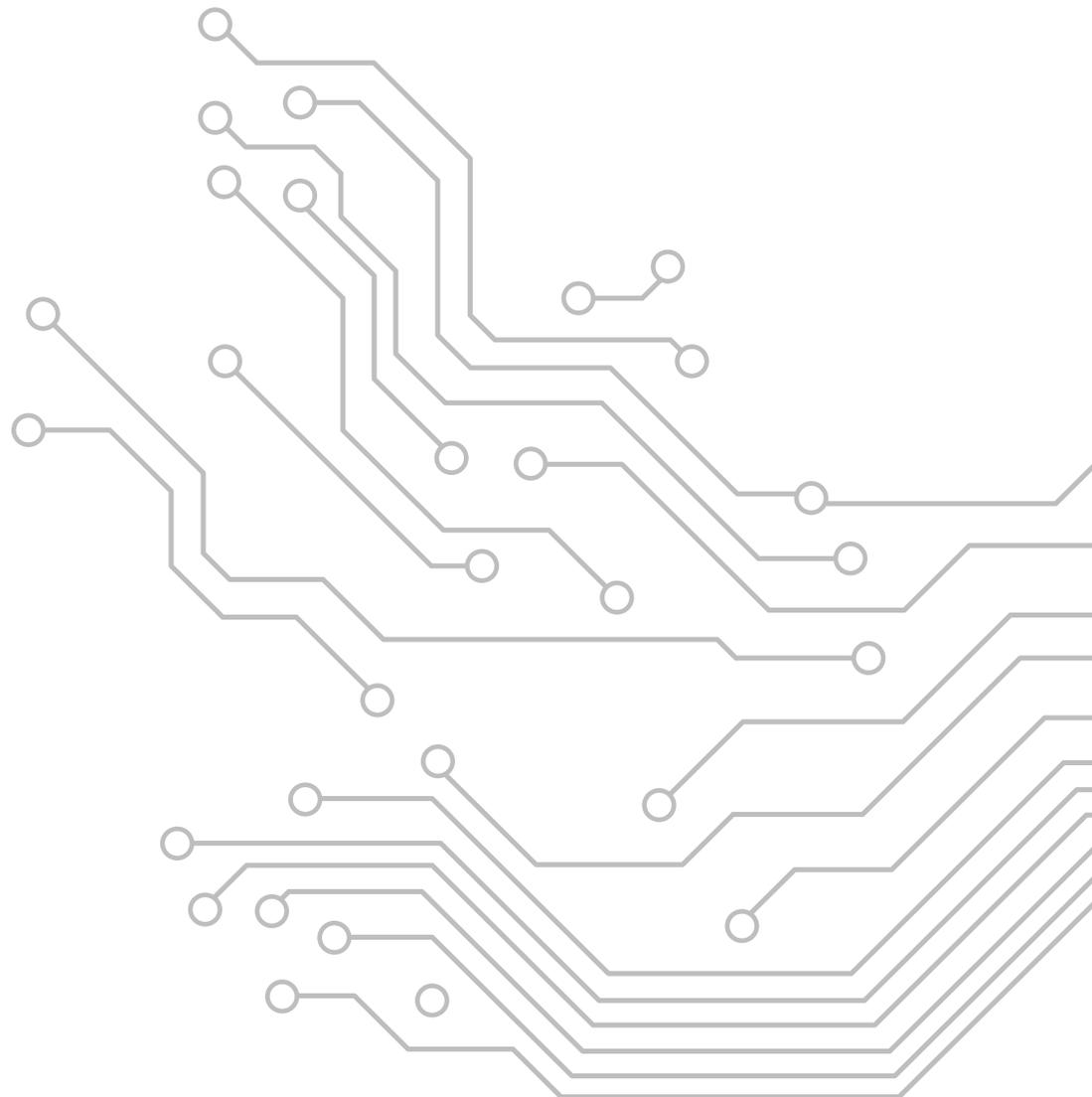
A number of semiconductor companies grow via expansion along the value chain. They use new distribution channels, new geographies or product and technology modifications to serve new customer segments. Intel's acquisition of Nervana occurred even as Nervana's chips were still in the early stages of development. Intel paid more than US\$400M for a 48-person startup company,⁴ showing its position on Artificial Intelligence (AI) as a huge growth market.



PIVOTING TO NEW OPPORTUNITIES

More semiconductor companies are achieving growth via completely new products and services, migrating into “white spaces”. Doing so involves risk, and market reaction is not always positive. For example, when Softbank acquired ARM—paying more than US\$31B for a company with revenues of about US\$1.5B—shares fell roughly 11 percent shortly after deal close.⁵ Through ARM’s chip design skills, Softbank aims to become a leader in the Internet of Things space.⁶

In 2017, Samsung Electronics acquired Harman International Industries in a \$8 billion transaction. It anticipates transformative opportunities in the vehicle and a future which connects seamlessly across automotive, home, mobile, and work. Samsung expects several benefits from the acquisition including better market penetration in the automotive and audio industries as well as skilled talent - software designers and engineers working on IoT efforts.⁷



FIRST MOVES TOWARD GROWTH

While using M&A to fuel growth is a complex process, a few first moves can help smooth the journey.

Adapt to the constantly changing geopolitical landscape

As semiconductors and the technology they contribute to become omnipresent in our lives, governments and regulators are taking a hard look at each and every M&A deal. Forward-thinking business leaders adapt their M&A strategy to keep pace not only with the highly varied business environment of the semiconductor industry, but with the many regulatory and government requests and concerns. Expect divestitures or limits on acquiring certain intellectual property as key stipulations to achieve official acquisition approval.

Base target screening on your technology roadmaps

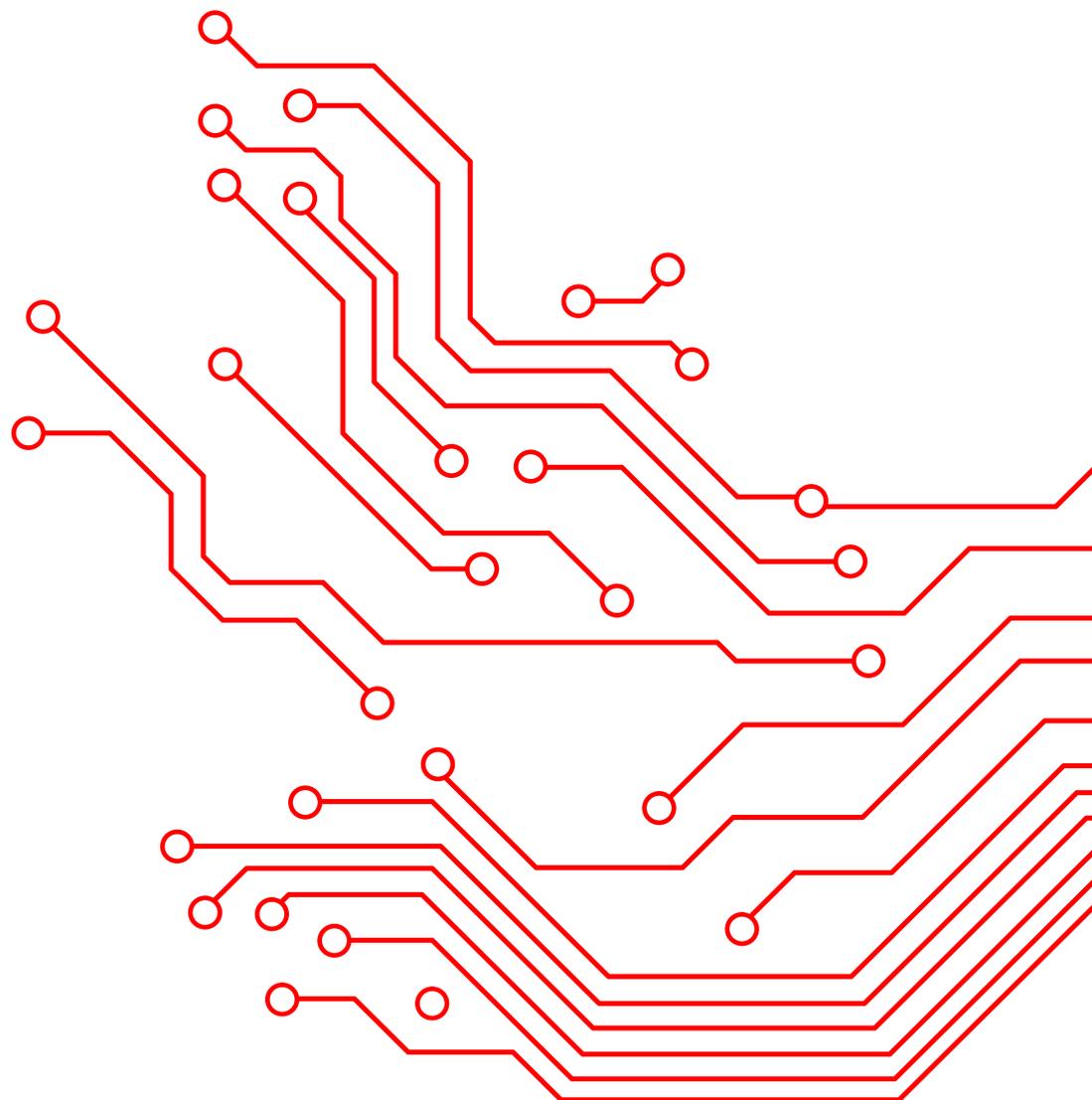
By creating a robust target screening process based on your company's R&D investments and technology roadmaps, you marry your growth goals to the right type of M&A. Leading companies continue to invest in their core, while selecting M&A targets carefully to either move up the value chain or across the stack—and to increase the markets served by their firm's existing silicon investment.

Test with joint ventures

Long qualification windows and highly sensitive customers means savvy leadership must truly understand the impacts of transformational M&A deals versus smaller, less significant M&A activity. Do not force integration and transformation to achieve synergies at the expense of the acquired company. Testing the waters with a joint venture can help your company achieve value—and ensure value creation—before acquiring.

As semiconductor companies move into a future where their products are an even more critical component in fueling the way the world works and lives, keeping their business robust becomes as tricky as it is essential.

Using M&A to defend and increase their position in an industry that high-tech titans are rapidly moving into can be a smart move. Those that can turn the threat into an advantage set themselves up to recharge growth over the long haul.



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NOTES

- ¹ Accenture analysis, 2019
- ² Accenture Strategy Tech-Led M&A Research, 2017
- ³ Accenture Strategy analysis based on Pitchbook.com data, 2018
- ⁴ Ibid
- ⁵ Ibid
- ⁶ Why SoftBank Is Spending \$32 Billion on ARM, by David Meyer Fortune, July 18, 2016
- ⁷ Samsung Newsroom, March 11th 2017

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