With budgets strained by Covid-19, industrial companies that selectively cut and thoughtfully invest can accelerate out of the recovery.

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Focusing R&D and Capex to Win

**At a Glance**

- Industrial companies are pulling back on R&D and capex spending due to the economic shock from the pandemic.
- Bain & Company research shows businesses can generate strong returns, even with a smaller capex and R&D budget.
- Rather than cutting evenly across the board, leading companies navigate downturns by making surgical cuts and investments based on a well-defined strategy and target product portfolio.

Industrial leaders can make all the right moves to protect the business through the current economic shock, but their future competitive position depends largely on how they manage a single critical dimension: capital expenditures and R&D.

Across automotive, aerospace and defense, construction and other industrial sectors, capex and R&D grew faster than revenues over the past decade, as companies invested in new products, services and process technologies to sharpen their competitive advantage.

But the sudden shock from the Covid-19 pandemic means that conserving cash and containing costs are urgent priorities, now and for the near term at the very least. A Bain & Company analysis indicates that industrial companies plan to pull back significantly more on research and development, and nearly as much on capex investments, as they did during the Great Recession (see Figure 1).

That’s a big challenge for any company to manage and still lead its industry. And the lessons from previous downturns suggest that many companies will waste valuable capex and R&D. In an analysis of 516 industrial companies, Bain found that 26% spent above the average on R&D and capex over the past decade but didn’t turn that into superior results for their shareholders. On the flip side, one in four industrial companies spent below the average for their peers, but still managed to generate above-average returns (see Figure 2).

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**Figure 1:** Companies are making deep cuts to R&D and capex due to the pandemic’s economic shock

<table>
<thead>
<tr>
<th>Period</th>
<th>R&amp;D</th>
<th>Capex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Recession</td>
<td>−5%</td>
<td>−34%</td>
</tr>
<tr>
<td>Continued growth period</td>
<td>+64%</td>
<td>+83%</td>
</tr>
<tr>
<td>Covid-19</td>
<td>−10% to −15%</td>
<td>−20% to −30%</td>
</tr>
</tbody>
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Notes: Bain analyzed 935 companies; constant exchange rates assumed; data indexed to 100
Sources: Bain analysis, based on data from S&P Capital IQ and analyst reports

**Figure 2:** One in four industrial companies generated above-average returns despite spending below average on R&D and capex

Total shareholder return, indexed (2010–19)

- **25% Efficiency heroes**
- **12% Innovators**
- **37% Observers**
- **26% Wasters**

Note: Investments and total shareholder return are indexed to the average of each company’s primary industry sector within its primary region (Americas; Asia-Pacific; Europe, Middle East and Africa)
Sources: Bain analysis, based on data from S&P Capital IQ (n=516)
Other factors influence company performance, of course, but ensuring that capex and R&D continue to feed the strategic priorities of the business will have an outsized effect on which companies accelerate as winners out of the downturn and which are left behind. The “efficiency heroes” provide some vital insights into how to apply capex and R&D to create the most value for the business using fewer resources.

Consider Toyota, one of the efficiency heroes in the Bain analysis. The Japanese automaker accomplished this by sticking to its pioneering lean manufacturing principles, including strict reuse of factory equipment across different products and extensive use of carryover parts from one platform generation to the next. Toyota’s capex spending as a percentage of revenue is among the lowest in the sector, yet it’s also an innovation leader in areas such as plug-in hybrid vehicles.

Focus was the key for Subaru, another Japanese automaker and efficiency hero. The company has kept its product lineup small and geared its investments toward capabilities that differentiated the brand in customers’ eyes. For example, it concentrated R&D and capex spending on signature features, such as all-wheel drive, that strengthened vehicles’ durability, reliability and safety. This helped Subaru achieve a Net Promoter ScoreSM of 76 in the US this year, one of the highest among automakers. The company also minimized its product development costs by jointly developing certain vehicles with Toyota.

On the other end of the spectrum, a misguided strategy led one of the “wasters” to overinvest in capex and R&D. This global manufacturer spent heavily to break into the higher-priced segment of its industry, well outside its brand’s sweet spot. Even in its best year, sales of the new product were only one-sixth the volume of the category leader. Equipment purchased and installed to manufacture the new product sometimes sat idle. Even worse, the misguided strategy diverted critical capex and R&D resources from the core business and diminished its ability to compete. The company emerged in a much weaker position.

These are the types of critical trade-offs that companies must increasingly make in the current environment. The stakes are high because many companies have little or no financial cushion.

Economic downturns upend the playing field and separate leading companies from laggards. The current crisis is already doing the same. That creates opportunities for bold strategies to grab or extend a leadership position and secure the future.

**Slash and burn creates severe risk**

Most executives are rightfully making cost reduction their top priority in the short term. Many sectors’ revenues are expected to drop steeply this year, and the full rebound to precrisis levels could be several years out.

Many companies typically respond to the intense pressure of a crisis by cutting evenly across their business and product portfolio, offloading costs wherever possible. This might help to conserve liquidity for a year or two, but it also cuts muscle and severely stunts the company’s growth potential once the
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economy rebounds. That's what happened to many of the companies that performed poorly during and after the Great Recession. They tried to slash and burn their way to the other side of the crisis, only to wind up in a weaker position.

Leading companies in past crises have taken a more discerning approach. They start by defining the company’s postcrisis strategy and target product portfolio, and use that to guide selective cuts and thoughtful investments (see Figure 3).

PPG Industries’ balanced response to the Great Recession enabled it to emerge stronger. The US-based paints, coatings and materials supplier shed $250 million in annual costs by shoring up its balance sheet and adjusting to lower demand in certain end markets. At the same time, it maintained R&D spending above the industry average throughout the recession and made investments to geographically diversify its business. By divesting low-growth businesses, such as automotive glass and services, and acquiring others, including SigmaKalon Group in 2008, PPG honed its product portfolio and strengthened its growing core divisions. As a result, PPG’s revenues grew steadily in the five years following the recession, and its stock price growth significantly outpaced the S&P 500 during that period.

Figure 3: A well-defined postpandemic strategy should guide cuts and investments

Instead of making uniform cuts across the business, leaders will allocate R&D and capex funding according to strategic targets. Define the target product portfolio based on current and new businesses with the strongest prospects and most feasible funding models. Invest efficiently, and stick to the plan; operational and commercial excellence will deliver the strategy’s full potential. Create clear structure and processes for executing the new strategy across the organization.


Define the strategy, then execute

The most successful companies navigate periods of upheaval by focusing their attention and resources squarely on the businesses where they have the best odds to lead the market. Besides generating superior profits and cash, market leaders usually have stronger balance sheets and get better financing terms, which creates a virtuous circle that breeds more success.

To develop a clear strategy and the right business portfolio, leading companies start by evaluating metrics such as their current businesses’ relative market share, profitability and capability strength, and determining which of the lagging businesses have true leadership potential.

That analysis can give executives the confidence to make assertive decisions that will put them in the strongest long-term position: doubling down on businesses that already lead the market or have the potential to do so, and divesting the rest (see Figure 4).

The leaders also strike a balance between their legacy “Engine 1” businesses and their newer and innovative “Engine 2” businesses that they envision underpinning future company growth. They also assess whether they have sufficient financial headroom to fund the new strategy with cash, debt and

Figure 4: The crisis calls for bold decisions and ruthless focus

![Figure 4 Diagram]

Note: Segment attractiveness is defined by the size and growth of the addressable market and industry profitability

Source: Bain & Company
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additional revenue from divestments. That’s especially crucial in the current crisis, given the immense pressure on balance sheets. Once executives have a clear picture of what’s feasible, they can align their R&D and capex funding to build and sustain the target portfolio.

In today’s stretched financial situation and during the coming years, the benefits of achieving leadership positions and scale will only increase. Bold executives who have the means might even increase spending on certain businesses or products during the crisis. If done right, that can set their companies up for even greater success when the economy rebounds.

South Korean conglomerate Samsung illustrates the rewards of executing an aggressive strategy during and after an economic downturn. In 2009, Samsung doubled-down on R&D investment while competitors cut costs in that area, with a fourfold increase in patents filed in the US and construction of four types of R&D centers, each with a defined product focus and investment horizon. Samsung maintained marketing investments, bringing in senior marketing execs from other consumer companies such as L’Oreal. A marketing strategy that rebranded Samsung as an innovative company helped position the first Galaxy smartphone, released in 2009, against competitors such as the Apple iPhone. Samsung also divested and streamlined noncore, low-performing subsidiaries, in order to reinvest capital in its core businesses. At the beginning of the last recession, Samsung ranked No. 21 in brand value on Interbrand’s global list, and the company climbed to No. 6 by last year.

Drastically reduce Engine 1 costs

An effective forward-looking strategy involves careful coordination between the Engine 1 and 2 businesses. The goal is to streamline Engine 1 in a way that keeps it humming, but also frees up enough cash to build a strong Engine 2.

Many industrial companies’ recent cost-reduction efforts are only trimming the fat of their existing structures, say by ratcheting down the operational costs of their manufacturing footprint.

But this doesn’t go far enough. The unprecedented nature of the current crisis calls for a different mindset.

For traditional Engine 1 businesses, that means reducing fundamental complexity with moves such as lowering fixed costs and streamlining product offerings. The most meaningful actions include cutting low-volume, unprofitable products and making the rest modular, which reduces the effort and cost of creating product variations. Many executives have considered making such radical moves in the past but didn’t act, concerned about disrupting their core businesses. The economic downturn is forcing drastic simplifications to legacy businesses in order to channel resources into new technologies and businesses.

Leading companies use a “zero-based” approach to challenge all R&D projects, fundamentally questioning their need. They pursue only projects that directly contribute to the company’s strategy.
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Achieving scale in the traditional business will become one of the most important hallmarks of success over the next few years. Having a leaner, more nimble operation can help. It might also require shedding nonstrategic or lagging Engine 1 businesses that could thrive under a different owner, and feeding the proceeds from those sales into emerging Engine 2 businesses.

Companies can also extract value out of businesses in a declining sector by effectively managing capex and R&D as part of a “last man standing” strategy. As competitors exit the market, one company often has the opportunity to consolidate those legacy businesses under its roof. By reducing capex and R&D spending to the bare minimum, the last man standing can actually generate attractive returns.

Feed Engine 2

In recent years, industrial companies have poured money into digitalization and other new technologies to support new or evolved business lines. In some cases, this has given executives a false sense of security; it has become clear that some efforts were poorly planned and executed, and the amount invested was insufficient to ultimately lead in those areas.

For example, many manufacturers and industrial companies have entered the emerging market of advanced “Industry 4.0” services and solutions, such as offering service contracts with fees paid based on machinery usage. Attracted by growing profit pools, some companies were tempted to tackle all verticals at once, spreading their investments too thin and offering fragmented solutions. A more effective approach is to proceed methodically and focus on ways in which the company can differentiate itself in a crowded field.

Consider Germany-based Bosch Group, a global engineering company and one of the world’s largest automotive suppliers. Declining automotive production, the commoditization of hardware parts and intensifying competition have put pressure on Bosch’s core business. A few years ago, the company started pouring money into digital capabilities, aiming to reinvent itself as a seller of industrial Internet of Things (IoT) solutions.

The key to its plan? Bosch developed and tested IoT products and services in its own factories before marketing them to others. Led by a new digital business unit, the initiative’s leaders focused on projects that would solve engineers’ pain points and deliver tangible results within two years. Bosch implemented the most promising ideas on a small scale, then rolled them out across many of its 280-plus facilities after the pilot projects demonstrated value.

Bosch ended up creating more than 150 digital solutions for preventative equipment maintenance, worker support, energy management and other use cases. The tools boosted productivity by up to 30% at individual sites, while reducing costs and improving quality. Bosch’s new digital offerings generated sales of €1.5 billion in the first four years, and the company is targeting €1 billion in annual sales for this business unit by 2022.
Companies have a narrow window to make the transition to Engine 2; think automakers racing to develop electric and autonomous vehicles. This current business shock makes it both more imperative and, in some important respects, more possible to make that leap, as a result of critical actions under-way to drastically streamline Engine 1 businesses. Gearing capex and R&D to make Engine 2 the leading priority is the only way to secure the future.

Play offense if you can

No company can hide from the economic fallout of the pandemic. However, while many companies currently have a small financial cushion and must play defense just to survive, plenty of others have a strong balance sheet that gives them the flexibility to go on the offensive, too.

That means they can invest more than their cash-strapped competitors on organic growth engines such as R&D and capex, and they can actively pursue inorganic growth through M&A. Those with the resources will find compelling opportunities to acquire new capabilities over the next couple of years.

During the previous recession, many companies that planned carefully were able to go big with acqui-sitions, the way Stanley did by purchasing the larger Black & Decker in 2009. Stanley had a clear deal rationale of overlapping customer and costs. And it timed the deal well, as Black & Decker saw a 22% drop in revenue and a 41% drop in EBIT in 2009. Stanley had done its homework on Black & Decker and moved fast to make an offer. The combined US-based company produced strong revenue growth from 2010 up until the economic downturn caused by the pandemic.

Incumbents are already feeling pressure from challengers in the current downturn. Deep-pocketed tech companies have continued to push into the automotive industry, for example. US-based chipmaker Intel struck a $900 million deal in May to acquire transit app maker Moovit and boost its mobility play with another subsidiary, Mobileye. The following month, Amazon announced plans to buy autonomous vehicles start-up Zoox for a reported $1.3 billion.

Time to act boldly

The pandemic has upended everyone's lives and sent seismic shocks throughout the global economy. It's one of the most difficult challenges industrial companies have ever faced, but that doesn't mean they should shrink completely into a protective shell. Executives still have room to act boldly. In fact, rising to the moment calls for it.

Those who develop a clear and detailed strategy to achieve their target business after the pandemic have the best shot at navigating the crisis and accelerating on the other side. History shows it requires cutting deeply in the right places while also investing available resources in strategic R&D, capex and M&A.

It's not too late to create a well-defined strategy and successfully execute it. But the opening to get ahead of the curve is closing fast. It's time to seize the moment.
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