



FEATURE

Portfolio transformation in chemicals

Creating value and sustainable long-term growth

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Construct a portfolio of products, services, and business units to build and maintain a competitive advantage.

Portfolio choices are a vehicle to create value

The discussion on portfolio choices—deciding where a company should play—is growing louder in chemical company boardrooms, largely thanks to shifting customer needs and end-market growth dynamics. Increasingly, investors are seeing portfolio transformation as a vehicle to unlock shareholder value. As a result, many leading chemical firms have split their companies or restructured their portfolios to focus on fewer, but core and related businesses that have the potential to create significant value for shareholders.

We analyzed the performance of over 200 global chemical companies between 2000 and 2020 (see sidebar, Study methodology) and found that the top-performing chemical companies typically change their portfolio mix more frequently than others—they usually change their portfolio once every business cycle and remain focused on their

over-arching business strategy, be it low cost, differentiated products, or exceptional service.

Moreover, “focused” chemical companies—companies that prioritize certain end-markets and product categories and derive at least 60% of the total revenue from that category—outperformed the overall industry average, especially diversified chemical companies, on most of the key financial and operating metrics.¹ They also organically grew revenues twice the rate of diversified companies’, generated 70% higher return on invested capital (ROIC), and delivered 60% higher shareholder returns.² A staggering third of these companies outperformed *across business cycles*.

So, what exactly are these top-performing chemical companies doing differently? They’re making critical portfolio choices that create value. In this study, we outline some key lessons that chemical companies can learn from past successful portfolio transformations and how they can evaluate portfolio decisions.

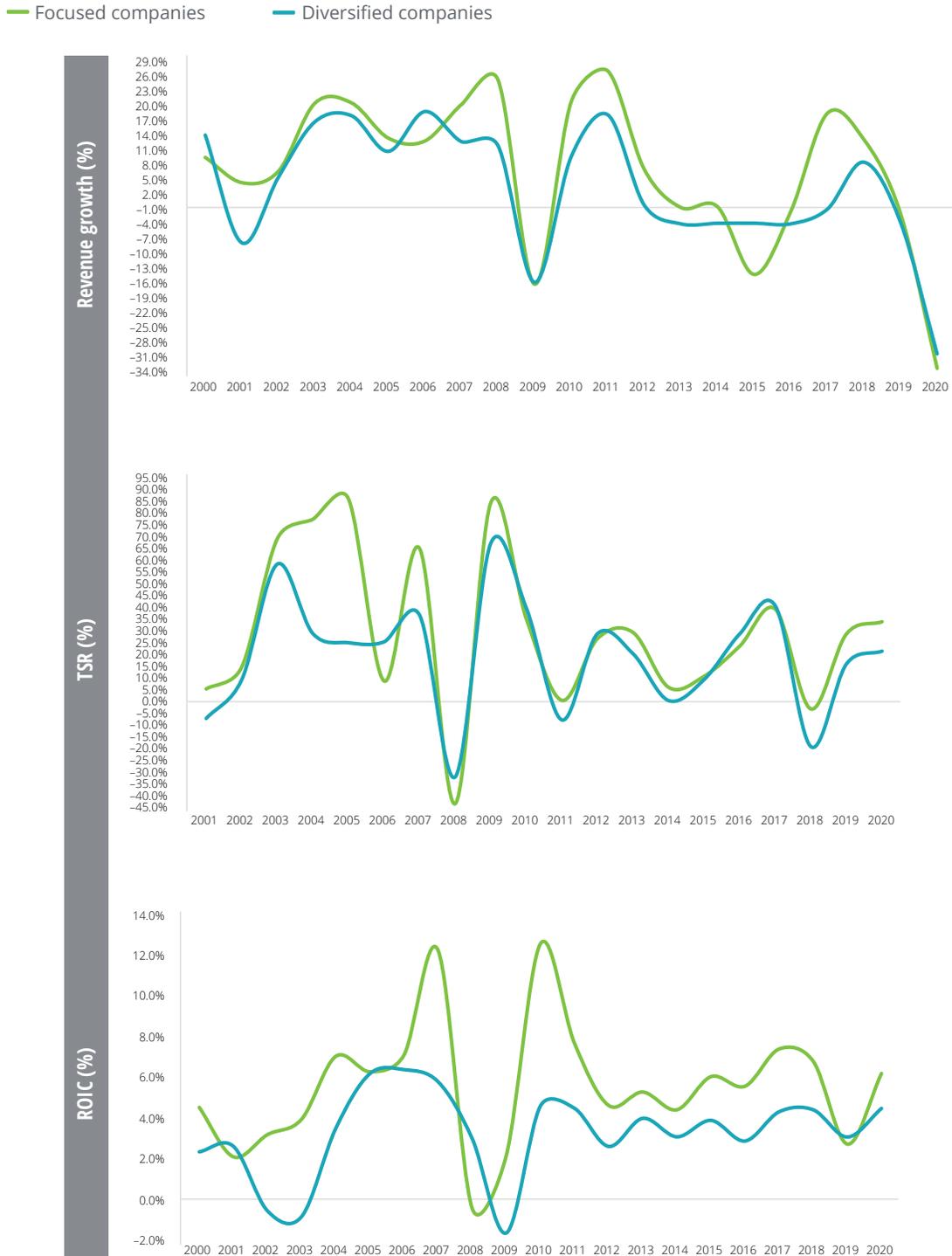
With portfolio transformation becoming a business imperative, chemical leaders should make a conscious decision about their competitive advantage, and play in those products and service categories where they can build and maintain a competitive advantage. This can be particularly important given the ongoing disruption in end-markets requiring chemical companies to be more agile, develop new business models, evolve their research and development departments, and provide enhanced products and services.

WHAT IS A PORTFOLIO?

For the purpose of this study, we define a portfolio as the products, services, and business units that a company owns or invests in. This study deals with portfolio strategy, i.e., deciding a company’s products, services, and business units, and not the overarching business strategy, which includes plans and actions that outline how a company will compete in particular markets.

FIGURE 1

Chemical companies that are focused on select products, services, and businesses outperformed companies that operate vastly diverse businesses



Source: Deloitte analysis based on data from S&P Capital IQ.

Creating value via focus and specialization

Most established players have come to own their current portfolios thanks to mergers and acquisitions over time, but deals that made sense in the past might not make sense anymore because of dynamic end-market demands, customer behavior, and feedstock prices. While the new environment has created both threats and opportunities for chemical companies, it underscores the importance of creating value from specialization.

We studied the financial data of global chemical companies over the past two decades (see sidebar, Study methodology) and found distinct and considerable differences in performance between the chemical companies that are focused on select end-markets and product lines and those that serve diverse end-markets with multiple product lines. Our research found that “focused” chemical companies outperformed “diversified” chemical companies on most of the key metrics (figure 1).

- The average annual revenue growth rate of focused companies was 7.7% compared to 5.6% for the overall industry and 3.8% for diversified companies.³
- The average annual total shareholder return (TSR) for focused companies was 29.9% compared to 18.8% for diversified companies.⁴
- The average annual total ROIC for focused companies was 5.6% compared to 3.3% for diversified companies.⁵

This study also found distinct and considerable differences in the performance of the three main chemical categories (see sidebar, Segmenting chemical companies). Natural Owners exhibited higher returns from a product and market perspective, primarily because their portfolio strategy directs them to usually focus on establishing leadership positions in their primary

STUDY METHODOLOGY

We studied 217 global chemical companies with revenue greater than US\$1 billion in 2020 and segmented them based on two primary dimensions: (a) chemical segment—Natural Owners, Differentiated Commodities, and Solution Providers (b) degree of portfolio concentration—i.e., focused or diversified to examine the power of portfolio specialization in contributing to superior performance. A *focused portfolio* is defined as one where a company derives at least 60% of its entire revenue from a single product line or category. We sourced the data from the S&P Capital IQ database and evaluated the revenue growth, TSR, and ROIC of these companies over a 20-year period, from 2000 to 2020.

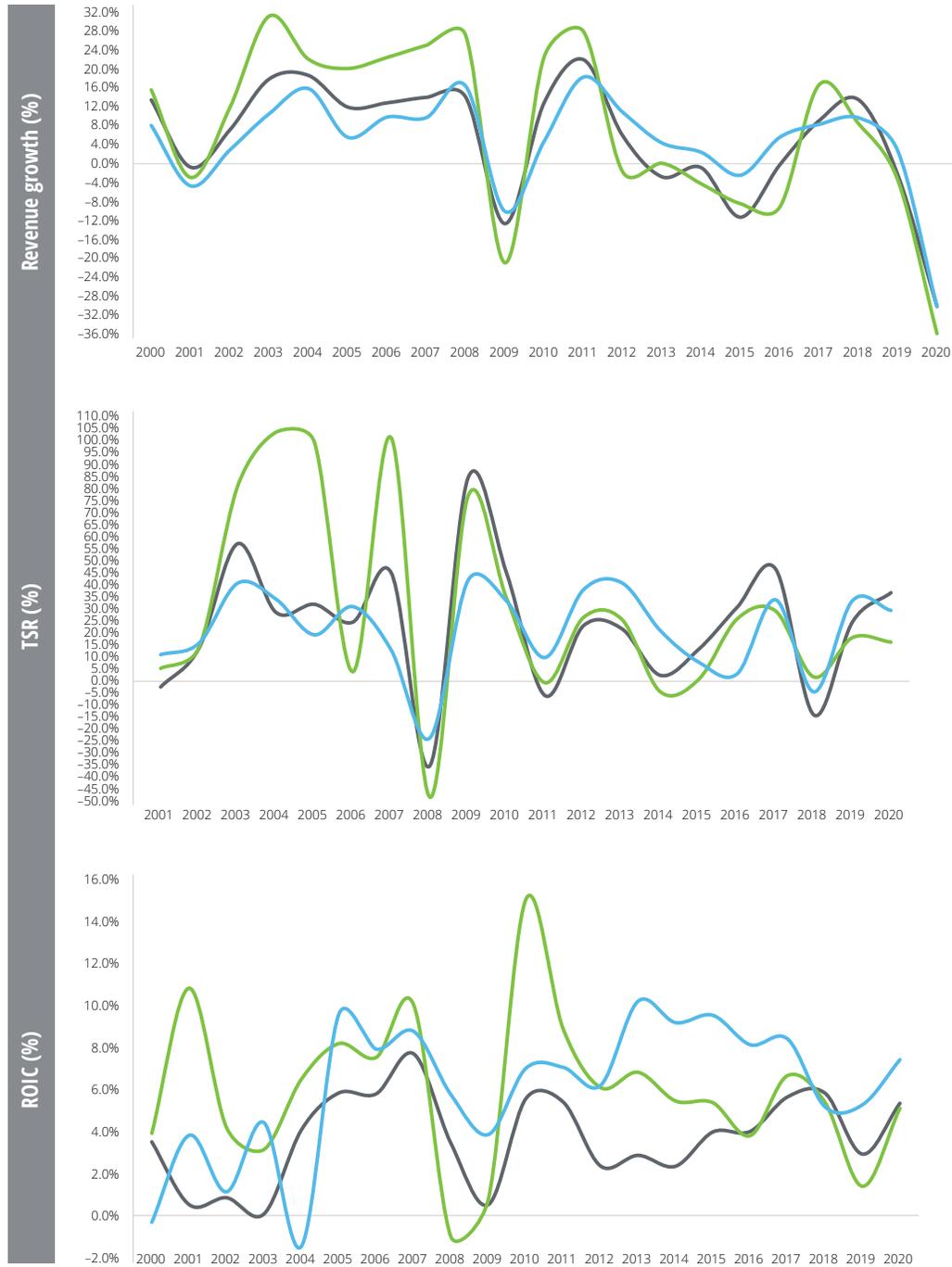
business line. Many Natural Owners are recognized leaders across various product categories, including olefins, polymers, solvents, surfactants, and gases. While their performance has been relatively volatile given the higher exposure to commodity cycles, they delivered revenue growth of 7.8% per year over the past 20 years vs. 5.6% for the overall industry.⁶ Natural Owners outperformed Differentiated Commodities and Solution Providers on annual revenue growth and TSR, and matched Solution Providers on ROIC (figure 2).

- The average annual growth rate of Natural Owners was 7.8% compared to 5.1% for Differentiated Commodities and 4.5% for Solution Providers.⁷
- The average annual TSR for Natural Owners was 29.7% compared to 23.2% for Differentiated Commodities and 20.6% for Solution Providers.⁸
- The average annual total ROIC for Natural Owners was 5.9% compared to 6.0% for Solution Providers and 3.8% for Differentiated Commodities.⁹

FIGURE 2

Natural owners outperformed other chemical industry segments

— Differentiated Commodities — Natural Owners — Solution Providers



Source: Deloitte analysis based on data from S&P Capital IQ.



SEGMENTING CHEMICAL COMPANIES

To better qualify strategic responses to long-term developments, Deloitte looked at global chemical companies through a different lens in a previously published paper, *The chemical multiverse 4.0*. This approach divides chemical companies into three categories: Natural Owners, Differentiated Commodities, and Solution Providers. Each of these categories typically has a different strategic imperative.

Natural Owners are companies that have access to or ownership of a strong advantaged feedstock position with a laser-sharp focus on achieving lower operational costs. **Differentiated Commodities** are companies that play the boom and bust cycles and focus on capital efficiency and technology leadership. **Solution Providers** are companies that primarily focus on selling solutions involving systems-level design and engineering.

The trade-off most often associated with specialization is limited growth potential as diversified companies have the opportunity to benefit from multiple growth avenues. However, with a few exceptions, diversified companies tend to have complex portfolios with several business lines serving multiple end-markets with often varying needs. Our research revealed that the result is generally lower growth and high cost of product and application development, and customer support and higher overheads with low gross margins.

Top-performing chemical companies persistently manage their portfolios by continually identifying and capitalizing on new business opportunities for value creation and methodically divesting underperforming businesses. However, Deloitte's analysis revealed that not every portfolio change is necessarily successful. While transforming their portfolios, chemical companies should consider three critical factors (figure 3).

FIGURE 3

Factors driving value when transforming a portfolio

SCALE IS NOT ALWAYS BETTER



- Out of the universe of chemical companies that are larger in scale (>US\$5 billion in revenue), only 40% performed well across the key financial metrics
- Takeaway: Companies should focus on product lines and end-markets that offer significant growth potential in the future

SPECIALIZATION DELIVERS VALUE



- Many companies made their portfolios “specialized” over the past two decades and a third of them managed to outperform across business cycles
- Takeaway: Companies should specialize in products and services that align well with their core capabilities and strengths

EXECUTION IS THE KEY



- Although many chemical companies have transformed their portfolios, several have underperformed, indicating the importance of execution in successful transformations
- Takeaway: Companies should build portfolios where they can build a leadership position (based on cost, differentiation, or service)

Source: Deloitte analysis.

The change compass: Impact of portfolio transformation

Portfolio choices can be underemphasized when times are good, but they can have enormous weight during periods of disruption. Long-term competitive advantage in the chemical industry is built less by short-term supply-demand thinking and more through ongoing macroeconomic thinking of trends and implications. Disruptions, such as the COVID-19 pandemic, have shown that targeting relatively short-to-medium term supply-demand imbalances or advantages may be a questionable portfolio strategy. Careful alignment with longer-term trends is more likely to result in creation of a winning

portfolio. As such, companies whose portfolios evolve but follow a focused and consistent strategy appear to be better-positioned to deliver superior long-term performance even during periods of disruptions.

While end-market diversity and exposure to more resilient sectors can help reduce the impact of the cyclical downturn on chemicals, industry players should also respond to shifting demand by prioritizing growing end-markets. With a shifting end-market demand structure, chemical companies should consider entering value streams associated with future growth markets, such as materials for microelectronics, advanced materials for

ANALYZING THE IMPACT OF OTHER VITAL FACTORS IN DRIVING CHEMICAL COMPANIES' PERFORMANCE

In addition to the portfolio choices, we studied the relative impact of three other factors that drive chemical companies' performance. These include diversity, equity, and inclusion (DEI) programs, M&A activity (number of deals), and environmental, social, and governance (ESG) scores. Our analysis reveals that while these three factors are all important, none individually seems to have had as significant an impact as portfolio decisions in driving shareholder value as represented by the TSR.

DEI had relatively less impact than portfolio choices in explaining the variance in financial performance of focused and diversified chemical companies. For example, in 2020, the average diversity and inclusion rating (DIR) and the average TSR for companies that pursue a focused portfolio strategy were 53.3 and 29.9%, respectively. In contrast, the average DIR score and the average TSR for companies that pursue a diversified portfolio strategy were 54.0 and 20.4%, respectively.¹⁰

Also, our analysis of the M&A activity of 217 global chemical companies from 2000 to 2020 did not show as strong correlation between M&A activity and financial performance when compared to portfolio choices in improving profitability and creating shareholder value in the long term. For instance, Solution Providers pursued an average of 21 M&A deals per year over the past two decades and generated an average annual TSR of 20.6%. In comparison, Natural Owners engaged in an average of 14 M&A deals per year, but generated an average annual TSR of 29.7%.¹¹

Similarly, the impact of ESG scores—that measure the sustainability and societal impact of investments on performance is not as significant as that of portfolio choices. For example, the average ESG score and the average TSR for companies that pursue a diversified portfolio strategy were 57.2 and 20.4%, respectively. In contrast, they were 49.0 and 29.9%, respectively, for companies that follow a focused portfolio strategy.¹²

construction applications, recycling technologies, and new solvent cleaning technologies. For example, to address the shifting consumer demand for electric vehicles, chemical companies that specialize in the mobility market could focus on lithium-ion battery materials and advanced materials. No matter which segment a chemical company falls into, the pathway to successful portfolio transformation often involves considering how the basis of competition is changing. With the changing landscape, no single company can likely manage success without considering this aspect.

Chemical companies can prepare for the new opportunities and build lasting business strength by tracking the larger trends shaping consumer preferences and end-markets to extract more value from current resources and assets. For example, with governments worldwide restricting single-use plastics, and public gaze shifting to sustainability and carbon footprint, chemical companies are

expected to develop new sustainable products and business models. As such, chemical companies should accelerate their decarbonization technologies, reexamine their existing assets, and diversify away from hydrocarbons where possible. They could add mechanically recycled and renewable feedstock-based polymers to their product offerings and invest in chemical or advanced recycling to bring potentially game-changing recycling technologies to a commercial scale. Figure 4 lists some examples of chemical companies that undertook more holistic transformations to improve their business performance and enhance the shareholder value.

Furthermore, companies could divest noncore or underperforming assets as well as make astute acquisitions to create greater long-term TSR. They can grow earnings in different operating environments if they build a business portfolio that can withstand changes in macroeconomic trends.

FIGURE 4

Holistic and rigorous portfolio transformation improves performance

Company	Portfolio strategy	Portfolio mix (% of total sales)	Financial performance (2000-2020)
Lotte Chemical Corporation recalibrated its portfolio to become primarily a manufacturer of advanced polymers	<ul style="list-style-type: none"> ◆ Strengthened core businesses ◆ Enhanced product competitiveness and created new demand by developing high value-added grade products ◆ Preempted the demand change and responded to it (by developing transparent, shock-proof, and functional polymers; light-weight automotive materials; and eco-friendly materials, such as the biodegradable resin) 	<ul style="list-style-type: none"> ◆ 33% polymers in 2000 ◆ 68% polymers in 2020 	<ul style="list-style-type: none"> ◆ 37% annual TSR ◆ 17% annual revenue growth ◆ 10% annual ROIC
FMC Corporation divested its commodity-oriented businesses to focus on agricultural solutions and nutrition	<ul style="list-style-type: none"> ◆ Launched the Plant Health platform six years ago, which extended the company portfolio to crop nutrition, seed treatment, and biologicals ◆ Increased investments in technology and R&D to strengthen and expand the product pipeline, including 21 new insecticides, herbicides, and fungicides ◆ Acquired Cheminova in 2015 to strengthen the product portfolio, enabling direct market access, especially across Europe 	<ul style="list-style-type: none"> ◆ 33% agricultural solutions in 2000 ◆ 100% agricultural solutions in 2020 	<ul style="list-style-type: none"> ◆ 20% annual TSR ◆ 3% annual revenue growth ◆ 6% annual ROIC
Air Products Inc. is focused on being a recognized leader in industrial gases	<ul style="list-style-type: none"> ◆ Restructured the business portfolio by selling noncore assets to focus on the core business—industrial gases ◆ Shifted the business portfolio toward larger, on-site projects where growth could be achieved through syngas/gasification and complex megaproject execution ◆ Provided complete solutions, including development, technology, engineering, construction, and operation of large syngas projects 	<ul style="list-style-type: none"> ◆ 63% industrial gases in 2000 ◆ 94% industrial gases in 2020 	<ul style="list-style-type: none"> ◆ 20% annual TSR ◆ 4% annual revenue growth ◆ 6% annual ROIC
Sasol Limited shifted the focus on chemicals and materials away from oil and gas	<ul style="list-style-type: none"> ◆ Focused on debottlenecking and incrementally growing the existing asset base in base chemicals ◆ Focused on pursuing acquisitions or partnerships while identifying and developing differentiated applications for the products in performance chemicals ◆ Rebalanced the business portfolio—stopped investing in additional new crude-refining capacity as significant investments were needed to meet changing fuel specifications, but offered little competitive advantage outside the company's existing positions in its key markets 	<ul style="list-style-type: none"> ◆ 65% energy business in 2000 vs. 32% in 2020 ◆ 35% chemicals and materials business in 2000 vs. 66% in 2020 	<ul style="list-style-type: none"> ◆ 15% annual TSR ◆ 8% annual revenue growth ◆ 10% annual ROIC

Source: Deloitte analysis based on data from S&P Capital IQ; annual reports for the years 2018, 2019, and 2020 of FMC Corporation, Air Products, Inc., and Sasol Limited; and Vision, Lotte Chemical for Lotte Chemical Corporation.

Portfolio frontier: Choices and trade-offs

While reconfiguring their portfolio, companies usually have three strategic choices: (1) add a business line to their core or primary chemical segment, (2) add a business line in an adjacent chemical segment, or (3) enter an entirely new chemical segment. A portfolio frontier or a framework can be helpful at this point to assess the choices and trade-offs available in the industry and decide what the core is and how far from that core should a company aim.

But these choices are best made by considering the key trade-offs related to the type of offering and growth (figure 5). For example, while a new segment might look promising, the strategic decision to enter that business hinges on the likely trade-offs, such as the competitive intensity, length of the innovation cycle, and the regulatory environment.

As end-market applications remain a primary focus for strengthening portfolios, chemical companies can use cycles of economic activity as an opportunity to adjust their portfolio. While many major chemical end-markets, such as transportation and construction, point to disruption, others promise strong demand in the long run.¹³ For example, pharmaceuticals and hygiene end-markets are trending upward and will likely continue to experience strong growth in the future.¹⁴

Chemical companies should, therefore, realign their portfolios to end-market shifts and long-term demand trends to capitalize on emerging and unmet needs, such as providing advanced materials for electronics. This entails

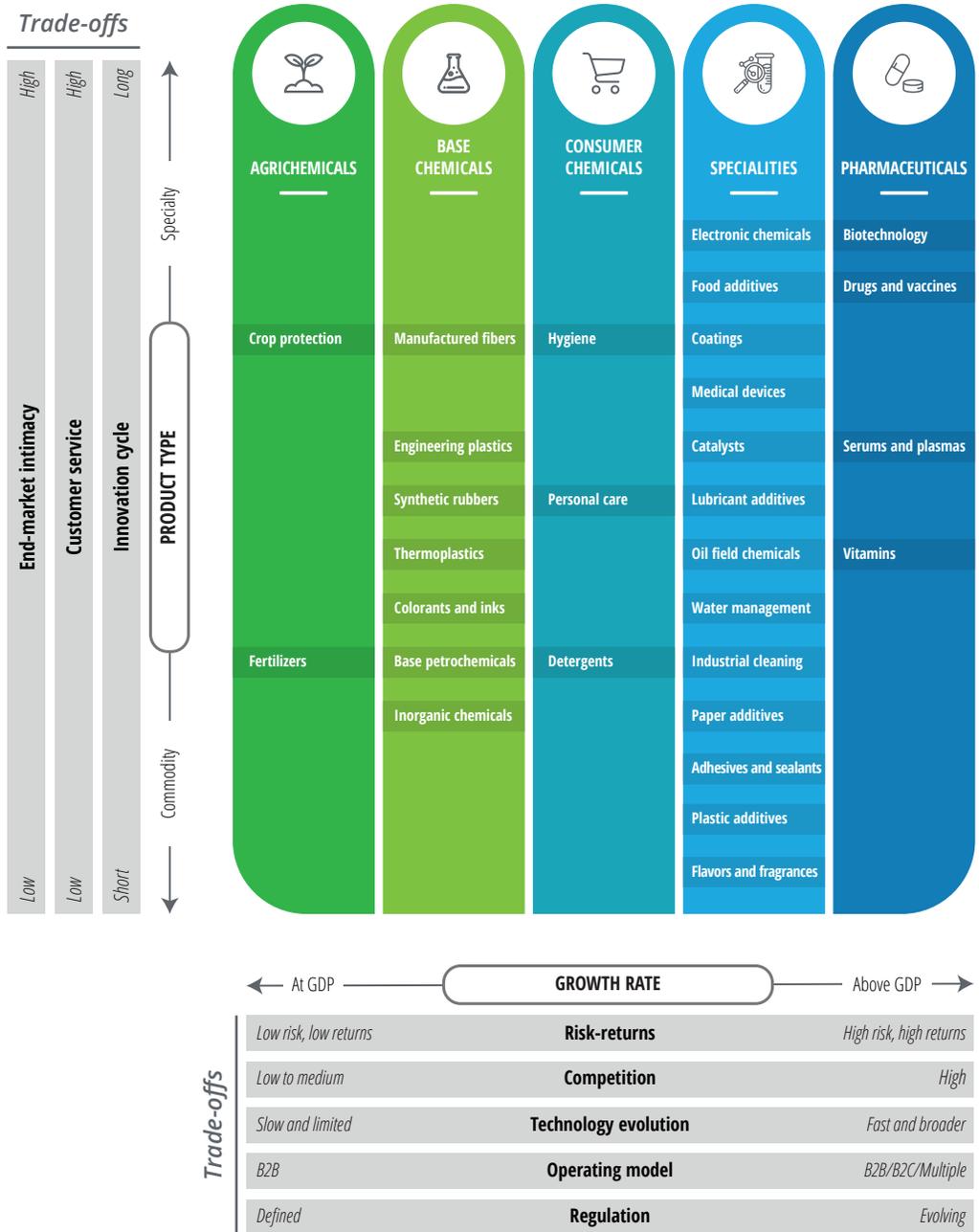
deemphasizing low-demand applications and doubling down investments in high-growth applications. For example, growth in electric mobility is resulting in a decline in demand for certain chemical products—from catalysts to gasoline-resistant plastics to oil and fuel additives. At the same time, it is offering new growth opportunities around electronic and lightweight materials, battery recycling, and advanced polymers.

As end-market applications remain a primary focus for strengthening portfolios, chemical companies can use cycles of economic activity as an opportunity to adjust their portfolio.

Boom and bust cycles usually present chemical companies with financial discipline, an opportunity to pursue value-creating investment and divestment choices. Industry players can use these economic cycles to pursue transactions (acquisitions and divestitures) that boost their core portfolio or product offerings, which in turn can create increased shareholder value. Therefore, executives should continuously monitor other companies that are (a) reassessing their strategic priorities and business models, (b) in need for vertical and horizontal integration, or (c) distressed and looking to divest noncore businesses to raise cash.

FIGURE 5

Major portfolio choices and trade-offs available for chemical companies



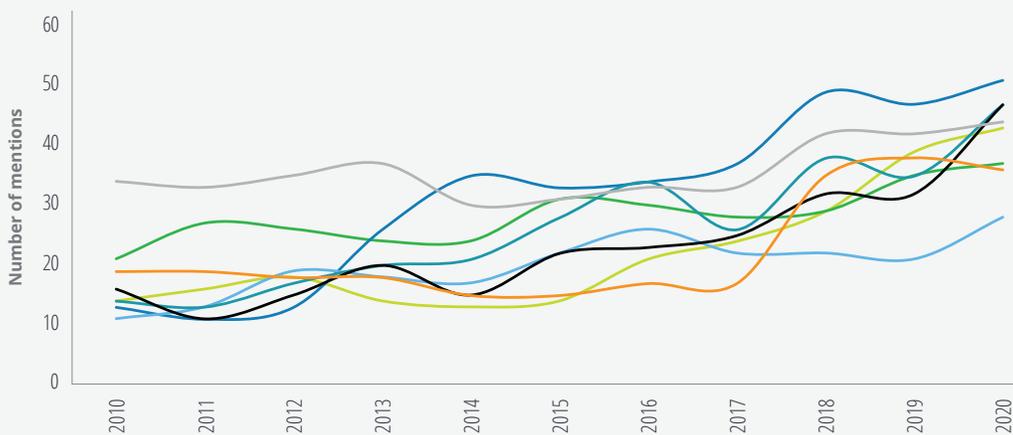
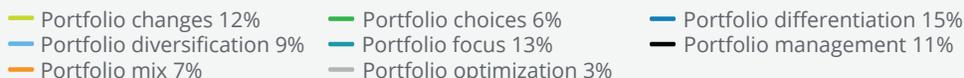
Source: Deloitte analysis.

PORTFOLIO FOCAL POINTS: RESULTS FROM TEXT ANALYTICS

Text analytics performed on 10-K reports of top 25 US-based chemicals companies by revenue from 2010 to 2020 reveals quite a few interesting trends (figure 6). The mentions of the keywords associated with portfolio have increased over the years, with the highest rate of the increase occurring in “Portfolio differentiation” and “Portfolio focus.” Simultaneously, the highest number of keyword mentions have happened for “Portfolio optimization” and “Portfolio differentiation.” This indicates that chemical companies are considering optimizing their portfolios by building focus and differentiation.

FIGURE 6

Portfolio differentiation and focus are top of mind for chemical industry leaders



Note: Percentage data in the callout refer to CAGRs (2010–2020) of number of mentions for each of the portfolio-related keywords. Source: Deloitte analysis of 10-K reports of top 25 US chemical companies by revenues.

Creating portfolios for sustainable long-term growth

One of the cornerstones of portfolio strategy is making strategic choices about what to invest in, what to maintain, and what to divest. Chemical companies can build a strategically sound and resilient portfolio by bolstering their existing positions in core markets, entering new growth markets, and exiting declining markets. Chemical leaders should regularly undertake a review of the portfolio to ensure it remains aligned to the core

capabilities, and is appropriately balanced to capture growth and reduce risk. So, how can chemical companies take the necessary steps toward creating a strong portfolio that drives long-term value? Consider this five-step process:

Step 1: Assess where to play. The assessment of “where to play” choices should start with defining the criteria for assessing the most attractive markets to compete in. Consideration should be given to identifying target segments, customers, markets, geographies, product or service types, and

aspects of the ecosystem or value chain in which the company operates or will operate. The assessment criteria for market attractiveness should include market size, growth rate, profitability, and risks.

Step 2: Assess ability to win from the existing portfolio. Chemical leaders should assess how well the existing portfolio is positioned to win in those chosen markets. It is important to identify and understand any relative competitive deficiencies in the portfolio. Specific areas that executives should review when evaluating the portfolio’s ability to “win” include relative market share, customer

satisfaction scores, price competitiveness, brand strength, and product stickiness.

Step 3: Assess whether value is being created or destroyed. Assessing whether value is being created or destroyed within a portfolio (figure 7) requires looking at two critical drivers of intrinsic value: revenue growth and ROIC. Companies should evaluate portfolio on its ability to provide the highest possible ROIC. If the capital is being invested in the portfolio where minimal or negative return is being realized, then that capital would most likely be more effectively deployed elsewhere.

FIGURE 7

The value creation matrix helps identify where value destruction is occurring and the path toward maximizing value creation



Note: WACC denotes weighted average cost of capital.
Source: Deloitte analysis.

Step 4: Consider future scenarios. Assessing the resilience of the portfolio against plausible future scenarios is important. Chemical companies can use scenario modeling and simulations to better understand how the portfolio will respond to a range of potential scenarios. These simulations can guide on adjustments in the portfolio mix and potential investment opportunities.

The final step involves taking an action to enhance the portfolio based on the insights gathered during the portfolio-review process.

Step 5: Take action—invest, maintain, or divest. The final step involves taking an action to enhance the portfolio based on the insights gathered during the portfolio-review process. These actions could result in a short-term revenue reduction, but if done effectively, the ROIC can improve, leading to a more sustainable growth portfolio for the long term. Also, regularly reviewing and making choices across the portfolio are typically essential to creating portfolios that drive value.

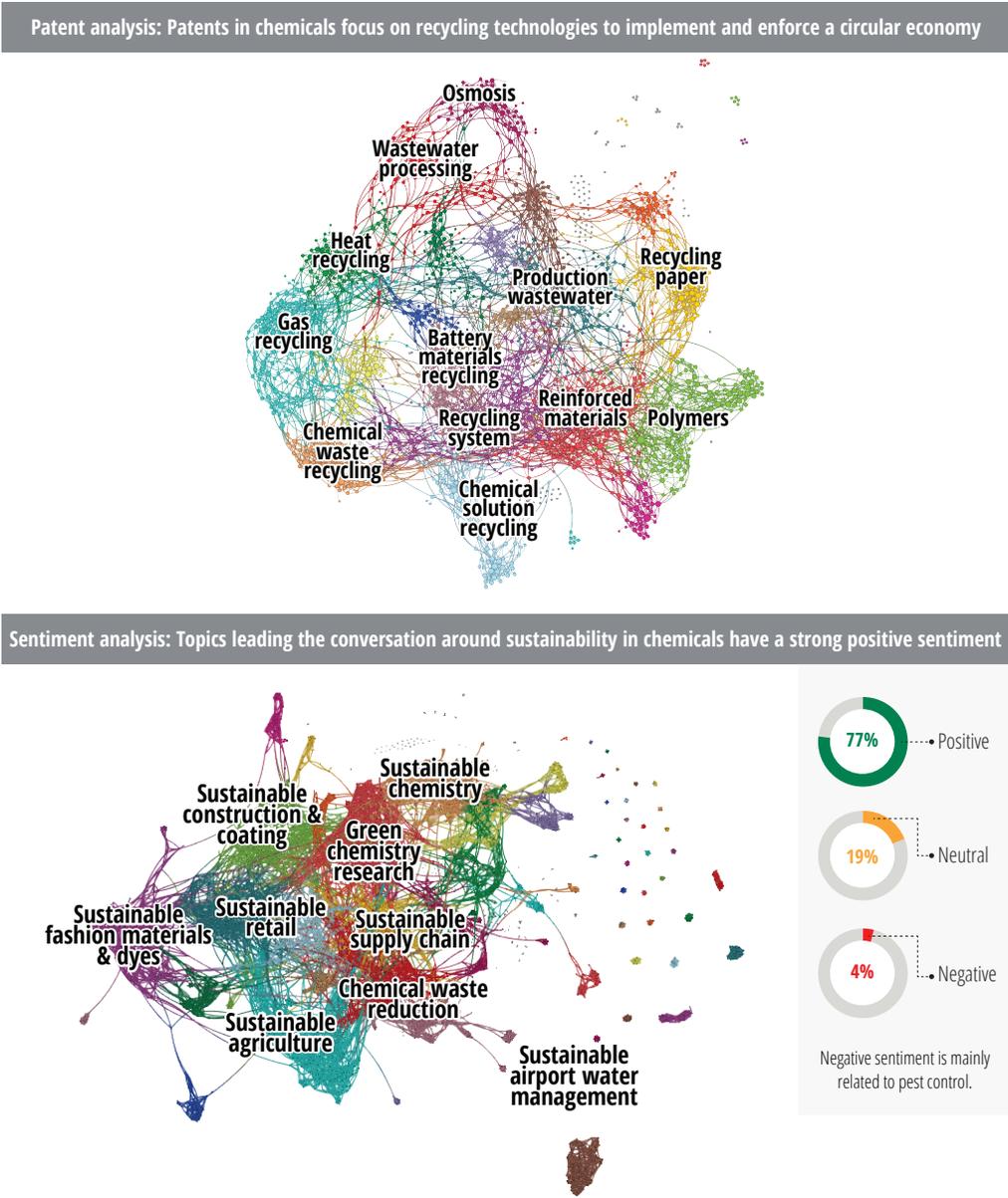


PRIORITIZING SUSTAINABILITY WHILE REBALANCING PORTFOLIOS TO CAPTURE FUTURE VALUE

A natural language processing assessment showed that sustainability in chemicals is top of mind for companies, institutions, and universities worldwide (figure 8). It also revealed that news and articles on the topics of “sustainability” and “chemicals” are strongly related to the various application industries of the chemical products (e.g., sustainable construction and chemical waste reduction), highlighting the critical role of chemicals in the industry and the high integration of the chemical value chain with end-user industries. Moreover, patents in the chemical industry are primarily focused on recycling technologies (figure 8), following the trends of implementing and enforcing a circular economy. Given the growing demand for sustainable products and processes, investing in recycling technologies and incorporating renewable and recyclable materials in the portfolio can be essential for chemical companies.

FIGURE 8

Sustainability continues to draw strong investment and focus on innovation in chemicals



Notes: All information on patents is sourced from the United States Patents and Trademark Office (USPTO) website, a publicly available source and the European Patent Office (EPO) website, another publicly available source. The purpose of the analysis is to identify general themes in sustainability in chemical industry. The classification of the patents, as presented, is based entirely on the patent classification data provided by the USPTO and EPO. Deloitte has no role in defining or determining the patent classification, and Deloitte did not review any individual patents in preparing this analysis.

Source: Deloitte analysis using data from Center for the Long View. Search topic "Chemical industry and sustainability." The colors represent the category groupings of each topic.

Building and managing winning portfolios

Building and managing a winning portfolio, one that is strategically sound, value-generating, and resilient, is typically at the heart of a successful chemical company. While building strong portfolios is often critical for value creation and sustainable long-term growth, companies will still need to undertake a methodical portfolio review regularly, presenting leaders with the necessary insight to inform the choices for creating advantage. Chemical companies should continuously track their portfolios to understand which parts drive or destroy shareholder value and realign their portfolio accordingly. They should get rid of underperforming and value-destroying products, services, or businesses. This has been a hallmark of top-performing chemical companies.

Chemical industry leaders can help themselves build and manage a winning portfolio by addressing three critical questions:

1. What are the longer-term growth opportunities available to the company?
2. Which portfolio mix will likely give superior shareholder value?
3. Does the company have a robust portfolio to perform well during disruption?

Through a holistic and rigorous portfolio management, chemical executives can improve strategic soundness, ensure operational resilience, and drive continuous value-creation.

Endnotes

1. Deloitte's analysis of financial data of 217 global chemical companies with revenue greater than US\$1 billion from 2000 to 2020 pulled for S&P Capital IQ.
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10. Deloitte analysis of DIR of global chemical companies pulled from Thomson Refinitiv Eikon.
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