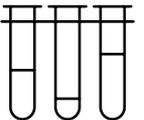


Chemicals

Incumbents Strike Back

Global C-suite Study
19th edition

IBM Institute for
Business Value



Which way to the future?

The signals are utterly bewildering. As digital technologies transform the world, monopolies are winning big-time. Yet collaborative systems are also flourishing, and even in industries where the competition is shrinking there's still plenty of creativity. Little wonder top executives are puzzled.

Chemicals CxOs are no exception. They're somewhat divided as to whether the focus will be on new or established markets (47 percent versus 42 percent). And where, previously, they expected that open innovation would predominate, a growing number now anticipate more internal innovation. But there are two points on which they broadly agree: how both value chains and value propositions are altering. A full 65 percent of Chemicals CxOs say most organizations will continue to expand their partner networks. And 62 percent expect more emphasis on customer experiences than products over the next few years.

CxOs in Chemicals also note that global volatility remains high. They expect market factors and environmental issues to weigh most heavily on their industry over the next few years, with price fluctuations, variable demand and sustainability pressures likely to persist. And like many peers in other sectors, Chemicals CxOs also report talent is an issue: 59 percent of respondents say people skills will be one of the three biggest influences on their enterprises – recognizing, perhaps, how digital technologies are reshaping the industry, and creating a shortage of people with the skills to dynamically manage new ways of engaging with customers and partners across the value chain.

The IBM Institute for Business Value, in cooperation with Oxford Economics, interviewed 358 CxOs from the Chemicals industry. These conversations included both quantitative and qualitative responses. The analytical basis for this Chemicals industry report uses 358 valid responses from the total data sample collected.

More than 12,800 CxOs, representing six C-suite roles, 20 industries and 112 countries, contributed to our latest research. We used the IBM Watson Natural Language Classifier to analyze their contextual responses and ascertain overarching themes. We also used various statistical methods, including cluster analysis and discriminant analysis, to scrutinize the millions of data points we collected.

Reinventors race ahead

In the course of our research, we identified three distinct organizational “archetypes,” each at a different stage on the road to Digital Reinvention™ (see Figure 1).

Reinventors focus on developing breakthrough products, services and business models; excel at extracting value from their ecosystems; and actively experiment. Their IT strategies are aligned with their commercial goals, and they’re superb at managing change – all of which helps them stand out both financially and as innovators.

Practitioners are ambitious but haven’t yet acquired the capabilities required to realize their ambitions. They’re neither as focused nor as agile as Reinventors.

Aspirationals have even further to travel. They still need to devise a clear strategy, put the right processes and resources in place, and develop the agility to seize new opportunities.

Reading the road signs

So what’s actually going on? Four topics stand out from our conversations with CxOs and our work with academics:

Dancing with disruption

The path to personalization

The pull of platforms

Innovation in motion.

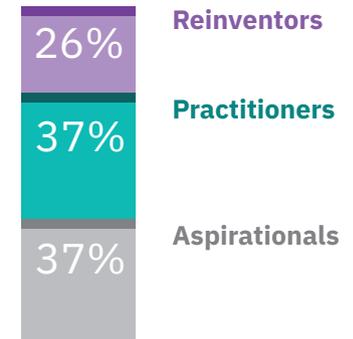
“With the use of the latest technologies we can produce more, while consuming less material and energy, and creating less waste.”

Chief Executive Officer, Chemicals, Indonesia

Figure 1

Chemicals split

Industry archetypes have distinct characteristics that lead to differing vantage points



Dancing with disruption

Two years ago most of the CxOs we interviewed told us they were deeply worried about digital giants and ankle-biters from other sectors invading their territory. Chemicals CxOs see things much differently. Only 15 percent say their sector is experiencing huge upheavals, and only 13 percent see an urgent need to transform their enterprises in response. A staggering 80 percent report that the real disruption is coming from innovative industry incumbents that have reinvented themselves to thrive in a disruptive digital era.

Chemicals CxOs say the best way to deal with the heightened competition is to prioritize production efficiencies – which is not surprising, given that the Chemicals industry is in the business of supplying virtually every other industry. Fifty-four percent of respondents plan to increase manufacturing throughput, while 50 percent plan to boost automation.

The Chemicals Reinventors in our sample are leading the way. They're more likely to invest in technologies that allow them to extract insights for competitive advantage: 85 percent of Chemicals Reinventors plan to invest in supply chain analytics in the next few years, compared to 70 percent of Practitioners and 60 percent of Aspirationals. Similarly, 68 percent of Chemicals Reinventors expect to increase investments in industry-specific artificial intelligence (AI)/cognitive technologies, compared to 53 percent of Practitioners and just 44 percent of Aspirationals. They're also out-investing others in the key technologies fueling Industry 4.0, including the Internet of Things (IoT) and cloud computing.

The path to personalization

Connecting with the customer on a personal level is essential these days, but designing compelling personalized experiences is extremely difficult. It takes a profound understanding of what makes different customers tick, particularly in industries where the customer is more often than not another organization. Again, Chemicals Reinventors are ahead of the curve: 87 percent rate themselves very effective at using data to identify unmet customer needs, compared to just 67 percent of Practitioners and 34 percent of Aspirationals (see Figure 2).

However, Chemicals Reinventors don't just trawl through yottabytes of data. They approach problems like design thinkers – by empathizing and engaging directly with customers, consulting their partners to get a better picture of the customer experience and analyzing detailed journey maps. And once again, they're more likely to be investing in technologies to achieve their goals. A full 82 percent of Chemicals Reinventors plan to increase their investments in industry-specific analytics to improve the customer experience.

“We started capturing regular feedback from customers to improve our digital platforms for an enhanced overall experience.”

Chief Executive Officer, Chemicals, Spain

The pull of platforms

One of the most exciting recent trends is the emergence of the platform business model, which connects producers directly with consumers, enabling organizations to grow faster and generate higher profits. Platforms generate a collective flood of industry- and cross-industry data that can reveal performance and production insights. Echemi, for example, developed a chemical transaction platform that links tens of thousands of suppliers with buyers, providing new opportunities for organizations to expand their global reach.¹

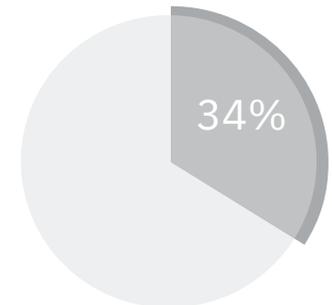
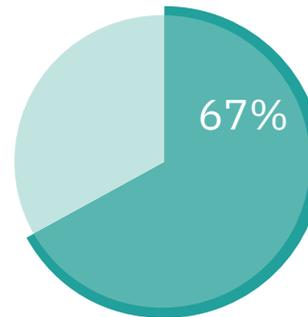
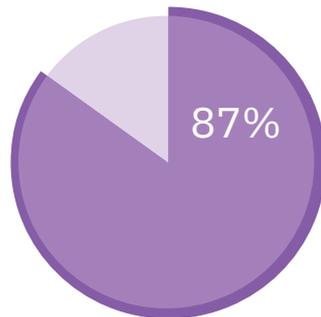
While few Chemicals CxOs currently operate platforms, 26 percent are exploring the potential – although most of these companies may choose to become platform participants than platform operators. So what makes a platform work? We identified three “rules” for success: creating value from reciprocity, capitalizing on data and committing to innovation. Chemicals Reinventors fit this profile particularly well. They’re convinced of the merits of partnering, have the right partner networks in place and they’re more effective at using these partnerships to achieve a better customer experience.

Figure 2

Know now

Reinventors excel at using data to understand their customers’ unmet needs

Reinventors
Practitioners
Aspirationals



Q: How effective is your enterprise at using data to identify undefined and unmet customer needs? (Percentage of respondents selecting “effective” or “highly effective.”)

Innovation in motion

The organization of work is altering dramatically as enterprises collaborate to innovate and ecosystems replace go-it-alone entities. The smartest C-suites are preparing for the future by creating teams that learn on the fly. A full 88 percent of Chemicals Reinventors already solicit input from employees to develop new approaches, compared with 55 percent of Practitioners and 40 percent of Aspirationals. But many of them have gone much further: 76 percent are embracing fluid, cross-functional teams to stimulate continuous learning (versus 58 percent of Practitioners and just 36 percent of Aspirationals). More than three-quarters of Chemicals Reinventors also empower their teams to decide on the best course of action (see Figure 3). The CxOs who head these companies lead through trust.

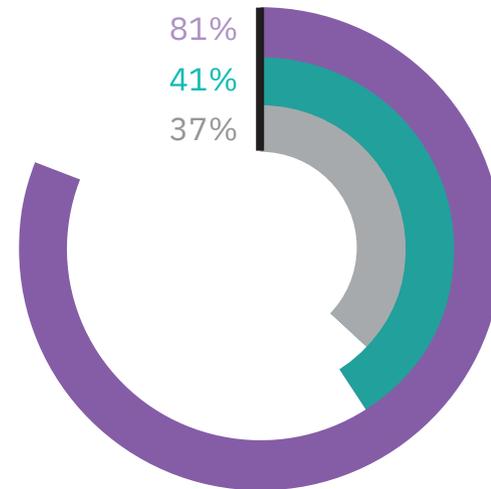
There's more. Chemicals Reinventors have C-suites that are consistently better than those heading Practitioners and Aspirationals at articulating a clear corporate strategy, as well as putting in place the right resources, including the right people, to execute that strategy. They're also more proficient at fostering a culture of transparency and ongoing dialogue, rewarding fast failure and successful innovation, and investing in employee skills to stay competitive. In other words, Chemicals Reinventors combine a dynamic vision with an open culture and agile operations – and these, as our research shows, are the three stepping stones to organizational dexterity.

Figure 3

Reinventors
Practitioners
Aspirationals

Autonomous teams

Reinventors empower their teams to decide on the best course of action



Q: To what extent does your enterprise empower teams to decide on the best course of action? (Percentage of respondents choosing "to some extent" or "to a large extent.")

Strengthening advantage: Actions to take now

Interrogate your environment. Systematically evaluate “as-a-service” options to leverage specialists in the chemicals value chain. Stay vigilant in creating value: use mathematical or computerized prediction of molecular properties, for example. Combine and apply multiple technologies – such as cloud, IoT and AI – across customer management, the supply chain and sales and marketing.

Commit with frequency. Actively develop and use new ways such as AI technologies to capture knowledge from laboratory documents and academic journals. Create learning organizations to address diminishing industry knowledge and increased demand for new skills. Drive product and service innovation through ecosystem digital platforms.

Experiment smartly. Take risks and daringly promote sharing among customers, suppliers, partners and employees. Shift your focus from products to services and outcomes, adjust course as needed and dynamically reposition your brand. Build new networks using blockchain and AI, for example, in your supply chain to track shipments.

“We anticipate training employees with advanced degrees in chemistry, chemical engineering or biology as data scientists.”

Mitsunobu Koshiba, Representative Director and President, JSR Corporation, Japan

Related IBM IBV C-suite Program executive reports

To read the full report, “Incumbents Strike Back,” please go to ibm.com/globalcsuitestudy. You can also find copies of our monthly insights and four related C-suite executive reports on IoT, AI, and blockchain at the same location.

For more information

To learn more about this IBM Institute for Business Value study, please contact us at iibv@us.ibm.com. Follow @IBMIBV on Twitter, and for a full catalog of our research or to subscribe to our monthly newsletter, visit: ibm.com/iibv

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Notes and sources

- 1 Echemi website. <http://www.echemi.com/echemi.html>. Accessed on March 21, 2018.

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