



Executive
Perspectives

The Race for Innovation

May 2021

BCG Executive Perspectives

OBJECTIVES OF THIS DOCUMENT

INNOVATION DRIVES STAKEHOLDER & SOCIETAL VALUE

As the world continues to change rapidly amid the global COVID-19 pandemic, innovation is becoming increasingly important. The COVID-19 vaccines were an unprecedented innovative development that will positively impact billions of lives. Additionally, innovation has allowed companies to better adapt their businesses and workforces to ever-present uncertainties. Embracing new ideas, business models, and ways of working will be critical for survival in an unpredictable future.

LEADERS CAN TAILOR THEIR INNOVATION PATH ACCORDING TO THEIR OBJECTIVES

From 2020 to 2021, there has been a tremendous shift in emphasis and investment in innovation as organizations grapple with unfamiliar challenges. Earlier this year, BCG released the *Most Innovative Companies 2021* report and *The CEO Innovation Agenda*. The current document is intended to further amplify and extend the messages from those pieces in order to help leaders select their most suitable innovation path.

Innovative companies are better positioned to recover and thrive in increasingly dynamic markets

Faster recovery

17 pp

Outperformance in total shareholder return (TSR) by the 50 most **innovative** companies in 2020

Beyond the core

20%

Higher average valuation multiple for companies that **innovated across both core and new markets**¹

Changing leaders

56%

of industry-leading companies² lost their leading position in last decade, a reduction in **incumbent advantage** compared with past decades (**23%** lost)

New disrupters

50%

Decrease in average **age** of S&P 500 companies today, compared with 1980 (**19** vs. **37** years old)

1. Analysis compared companies that disrupted more across adjacent and frontier markets with those that innovated only in core markets among BCG's top 100 Most Innovative Companies; P/E multiple used for valuation multiple; innovation focus measured by peer survey respondents within core and outside core industry; N = 1,600 C-level and SVP-level innovation executives. 2. Based on US industry leaders by operating income in 69 industries Source: BCG Most Innovative Companies of 2021 report and survey (April 2021); BCG Deep Tech and the Great Wave of Innovation article (March 2021); Capital IQ; BCG Henderson Institute; BCG analysis

Summary

The Race for Innovation

Innovation trends

COVID-19 has tested companies' ability to **adapt to changing environments**; 75% of companies report innovation as a top 3 priority in 2021

Incumbent advantage is declining as only 44% of industry leaders maintained their industry rank in the past decade, compared with 77% in previous decades

Innovative companies have outperformed their peers before and during COVID-19 downturn by ~10-20 pp in shareholder returns, led by the top 3 most innovative companies—Apple, Alphabet, and Amazon (A-A-A)

Innovation options

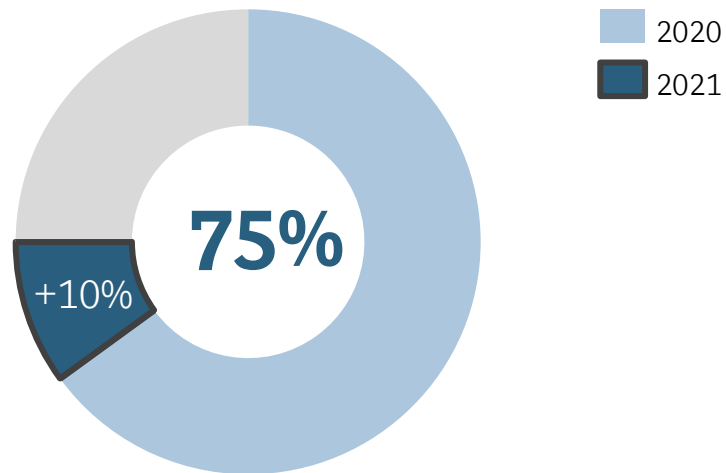
Companies must determine their innovation focus among **core, adjacent, and new frontier** opportunities, which will impact other innovation plan options

1. **Vehicles:** Explore growing innovation vehicles such as partnerships/VC
2. **Technology:** Leverage existing technologies and explore nascent areas
3. **Process:** Use agile processes to rapidly build, test, launch, and learn
4. **Working model:** Facilitate cross-functional teams to drive innovation engine
5. **Culture:** Reward innovative thinking across all teams, including frontline

COVID-19 has increased the importance of innovation and driven increased innovation budgets, as flexibility and resilience are necessary to survive

Increasing importance of innovation

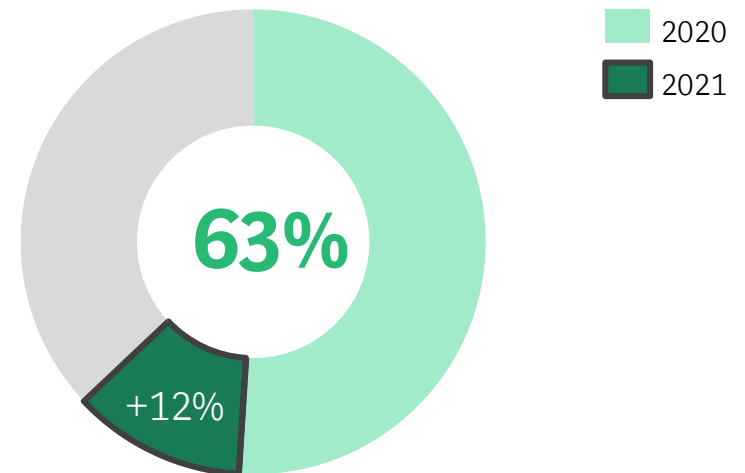
Percent of organizations ranking innovation a top 3 priority, in 2020 and 2021¹



In 2021, innovation as a top 3 priority jumped **10 pp** from 2020, the largest year-over-year increase in 15 years of research; COVID-19 drove the **increased importance**

Increased innovation budgets

Share of respondents that have increased their innovation budget slightly or significantly²



Innovation budget includes building new digital **products and processes**, exploring new business **models**, and reorienting the innovation **portfolio**

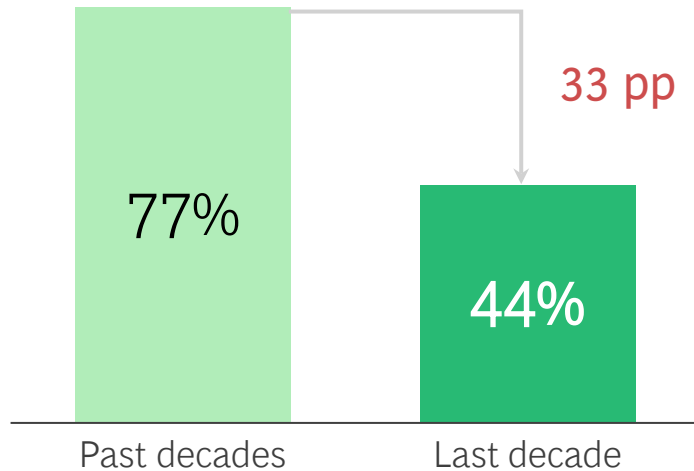
1. Percent responding “top priority” or “top 3 priority” to the question “Where does innovation/R&D/product development rank among your company’s priorities?” 2. Percent responding “increased significantly” or “increased slightly” to the questions “Compared with 2019, how much did you adjust your company’s budget for innovation/R&D/product development in 2020?” and “Compared with the year 2020, how do you expect your company’s budget for innovation/R&D/product development to be adjusted in 2021?”

Source: BCG *Most Innovative Companies of 2021* report (April 2021)

Incumbent companies are more likely to be outcompeted; innovation requires leadership and commitment at the C-level

Incumbent advantage is declining

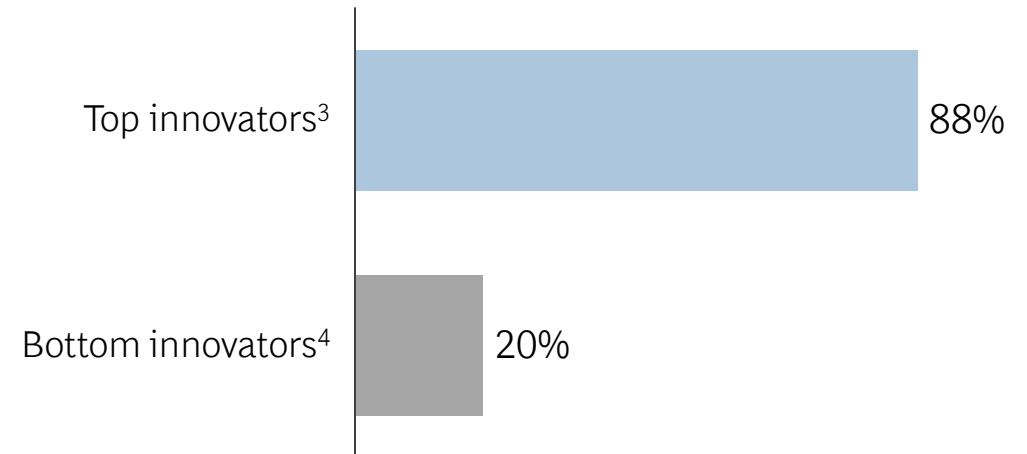
Percent of industry-leading companies¹ that kept 5-year industry ranking, in last decade compared to past decades



The average age of companies in the S&P 500 today is **half** of what it was in 1980 (**19** vs. **37** years); incumbents must continue to **innovate to survive**

Innovation needs CEO/CXO ownership

Percent of respondents with clear C-level ownership of innovation²



CEOs/CXOs must set the overall **ambition** and define strategic **priorities**, ensure **accountability** for innovation outcomes, and support innovation **culture and talent**

The 50 Most Innovative Companies of 2021 accelerated out of the crisis

17 pp

outperformance in 2020 of a portfolio invested in last year's **50 Most Innovative Companies** compared with MSCI world index, a global large and mid-cap equity index¹

Most Innovative Companies report includes a global perception survey², competitor views, multi-industry participation, and value creation (total shareholder return)

Innovative companies continue to outperform during COVID-19

2020 Total Shareholder Return (December 31, 2019 = 100)



1. Consists of 1,583 constituents, which covers ~85% of free-float adjusted market capitalization in each of 23 developed markets countries. 2. N = 1,600 C-level and SVP-level innovation executives.

3. For example, FAANG (Facebook, Amazon, Apple, Netflix, Google), Alibaba, Jingdong, Microsoft, Cisco, and others

Source: BCG Most Innovative Companies of 2021 report (April 2021); MSCI; CapitalIQ; BCG analysis

A Apple

A Alphabet

A Amazon

Apple, Alphabet, and Amazon (A-A-A) are the **top 3** most innovative companies of 2021 and have been ranked in the **top 10** for the past decade

MYTH:

A-A-A **spends more** on innovation than other companies

A-A-A invests similar amounts on innovation (~**15%** of sales¹) but gets **3x** better returns through improved innovation practices and decision making

Not everyone has to be A-A-A... but CEOs can **apply A-A-A lessons** that are relevant to their **respective companies/sectors** as they revamp innovation in the COVID-19 era

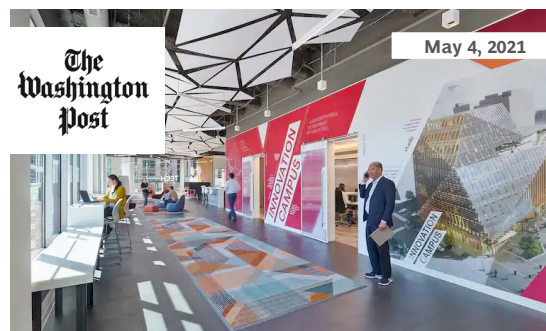
1. Based on responses to the question "Innovation input: What is the total % of sales allocated to R&D as well as other innovation activities" from the BCG Most Innovative Companies 2021 report
Source: BCG *Most Innovative Companies* report over time

As the COVID-19 battle continues, innovation is taking priority in global agendas

As of 12 May 2021



COVID innovations: vaccines for variants, drone deliveries, print-your-own shots, and more



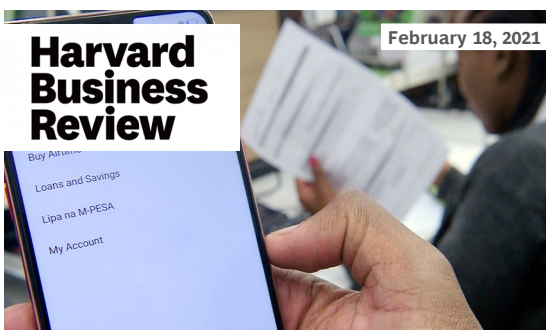
Boeing gives Virginia Tech \$50 million to help launch innovation campus



China targets AI, chips among seven battlefronts in tech race with US



Biden and world leaders focus on innovation for 'clean energy future' at climate summit



Kenya is becoming a global hub of fintech innovation



Tech giants bet \$19 billion on global electric car frenzy



Deep tech startups are emerging in India, but money and markets to sustain are still needed



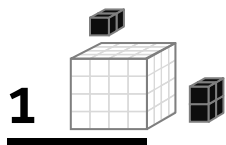
Plans to increase tech unicorns tenfold in Europe proposed

CEOs should set the innovation focus and use it to navigate their innovation plan options across 5 key dimensions

Focus	Determine the innovation focus (core, adjacent, new frontier) based on company objectives, which will shape subsequent path
1 Vehicle	Add capabilities through ventures/ecosystems; different options exist based on innovation focus
2 Technology	Leverage existing or nascent technologies to power innovation based on focus
3 Processes	Use agile innovation processes to build, test, launch, and learn across innovation focus areas
4 Working model	Facilitate cross-functional collaboration between product and sales teams and ensure alignment across levels
5 Culture	Reward innovative thinking across teams and ensure talent is empowered to challenge the status quo

Determine innovation areas to focus on given company objectives and positioning, which will shape subsequent path

Description and examples



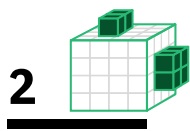
1

Explore new frontiers

Innovation focused on developing new products or services in markets that may not currently exist

Example

Electronics company develops autonomous vehicle software



2

Expand into adjacencies

Innovation aimed at expanding into areas adjacent to core that are new to the company

Example

Airline builds and sells operations optimization platform



3

Maximize the core

Innovation aligned to scaling and optimizing existing core business

Example

Apparel manufacturer adopts fully digital design process

The **business model** will also need to change in order to match desired innovation and to maximize chances of **success** and ability to **scale**

Companies invest across all three areas, but based on market context, they choose where to **invest the most** to match aspiration

Allocation examples:

Leader: 60% core, 30% adjacent, 10% frontier

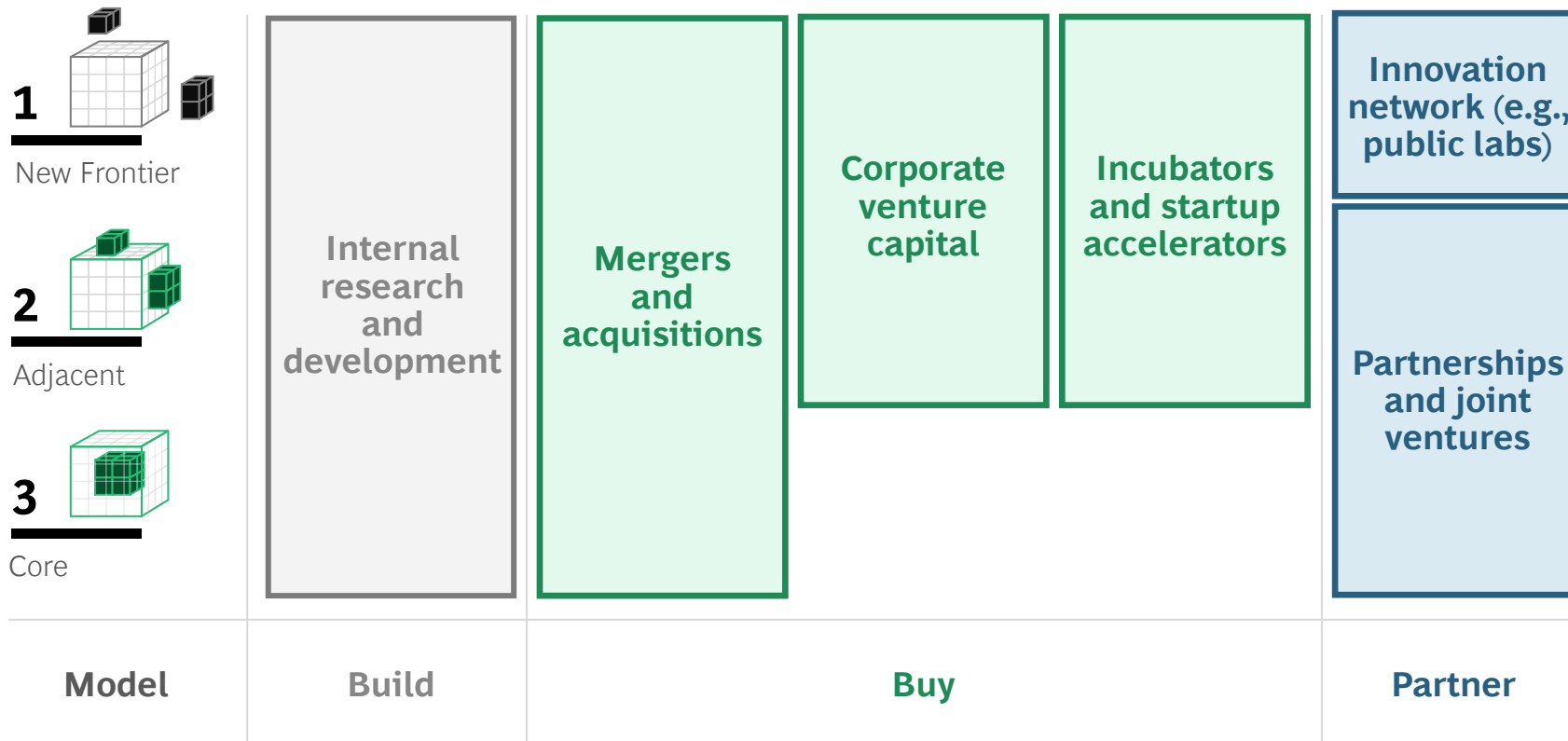
Reinventor: 20% core, 20% adjacent, 60% frontier

Among most innovative companies, there is a **20% valuation multiple premium** for innovating across adjacent and frontier in addition to core¹

1. Analysis compared companies that disrupted more across adjacent and frontier markets with those that innovated only in core markets among BCG's top 100 Most Innovative Companies; P/E multiple used for valuation multiple; innovation focus measured by peer survey respondents within core and outside core industry, N = 1,600 C-level and SVP-level innovation executives
Source: BCG Most Innovative Companies of 2021 report and survey (April 2021); BCG analysis

Add capabilities through ventures/ecosystems; different options exist based on innovation focus

Based on innovation **focus area** and desired **engagement model**,
determine appropriate innovation vehicle



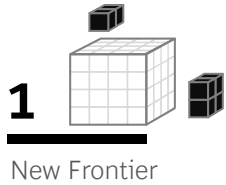
Venture/Ecosystem:

Companies have increasingly **partnered** and **invested** in startups and public research labs that are driving technology innovation

In the past decade, A-A-A invested in 500+ startups and **25+ have become unicorns** (>\$1 billion valuation)

From 2019 to 2016, there was an **8x increase in innovation alliances** formed

Leverage existing or developing technology to power innovation based on timeline and focus



Develop or partner in **deep tech** areas to meet future needs

4X

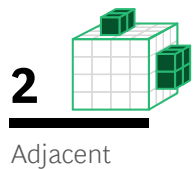
Growth in deep tech investments from 2016 to 2020 (from \$15B to \$60B)

Key deep tech investment areas:

Biotechnology, artificial intelligence, photonics and electronics, drones and robotics, advanced materials, blockchain, quantum computing

Timeline considerations: Deep tech areas may have **uncertain timelines** as technologies may not yet be **commercially available**

Business model innovation: New frontier innovation can occasionally **rely entirely** on business model innovation with little technology development



Leverage or improve **existing technologies** in current markets

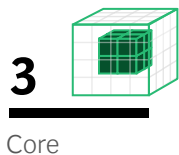
60% of companies are leveraging **digital transformation** for innovation goals

Example

Fertilizer company adds satellite imagery service to help farmers maximize crop yields while minimizing environmental emissions

Example

Auto manufacturer develops virtual sales platform that allows for car tours, financing options, and delivery during COVID-19

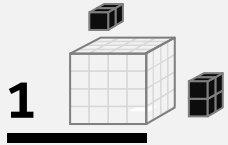


Diversify portfolio:

Like other companies, A-A-A invests in a **portfolio of innovation: 70-80% core/adjacent and remainder in new frontier**. Some A-A-A new frontier bets are highly visible (e.g., Google X)

Within core, A-A-A develops products **faster** than others (average of 7 vs. 15 months), but outside core, A-A-A timelines match others

Use agile innovation processes to build, test, launch, and learn across innovation focus areas



1
New Frontier

Usually requires **longer timeline** for technology development. May deliver **intermediate results** and iterate prototypes before going to market



2
Adjacent

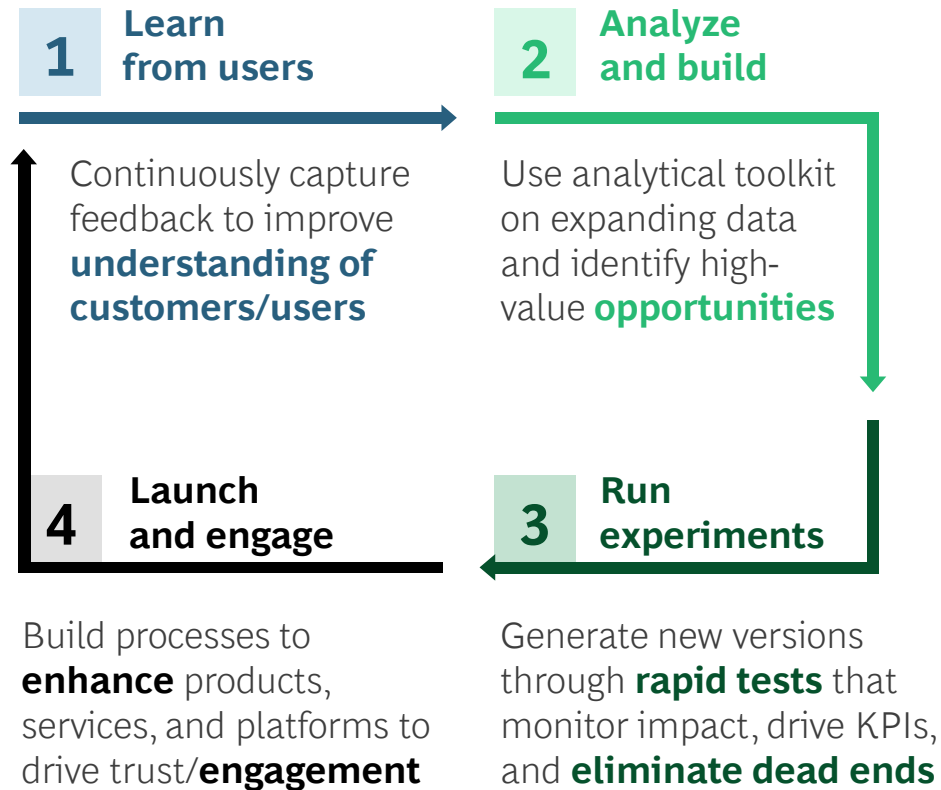


3
Core

Flywheel will be started by **frontline teams** with quick **innovation sprints** and aim to **launch MVP** (minimal viable product). Product launches drive new feedback and restart cycle

Innovation process is effective **across** innovation types, with some **tailoring**

Innovation Flywheel



1. Learn from users:

A-A-A involves customers closely in the **product development** process to obtain continuous feedback

2-3. Analyze, build, and run experiments:

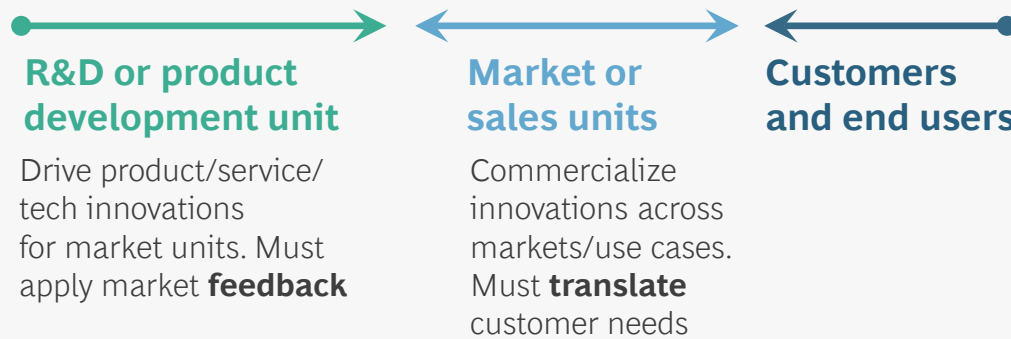
A-A-A tends to move forward with **~50%** of innovation projects, like other companies, but tends to make **more successful** decisions (90% vs. 60% for other companies)¹

1. Based on survey respondent feedback on competitor choice set; successful decisions defined as prioritizing more successful projects
Source: BCG Digital Ventures *Powering the Innovation Flywheel in the Digital Era* article (March 2021); BCG *Most Innovative Companies of 2020* report (2020); BCG analysis

Facilitate cross-functional collaboration between product and sales teams and ensure alignment across levels

Across industries, almost **1/3** of companies cited less than optimal **collaboration** between R&D and sales team as the **biggest obstacle** to higher innovation output

Innovation struggles occur when ideas are **pushed** to market rather than **pulled**. R&D and sales must **align** to be effective



Solutions to bridge divide:

- Build a **one-team** mentality
- Align incentives with **metrics**
- Establish **communication lines, mandates, and accountability**
- Shift the status quo and **celebrate successes**

Encourage cross-functional teams:

European insurance co. **links** product and sales team by building **end-to-end teams** and ensuring members possess a set of **cross-functional skills**

Align at the top:

Leading medtech co. brought heads of R&D, technology, sales, and innovation together to create an **innovation council** that manages **portfolio and pipeline**

Teams working on innovations should have **senior-stakeholder governance** and commitment to align purpose and direction, while also having **decision-making** authority

1

Decentralized, **nimble** teams aligned to overall **objectives**

2

Development **ownership**, but plan for **launch and handoff**

3

Decoupled launch schedules, considering key **connections**

Reward innovative thinking across teams and ensure talent is empowered to challenge the status quo

All teams, including frontline/operations, should embed **innovation culture** and recruit talent that would **excel in this culture**

- 1 **Customer obsession** ...while ensuring **economic viability**
- 2 **Interdisciplinary collaboration** ...with individual **accountability**
- 3 **Risk taking and tolerance of failure** ...with strong **performance management**
- 4 **Bias for action and fast decisions** ...while singling out **irreversible** ones
- 5 **Individual sense of ownership** ...with strong **strategic direction**

Reward **risk taking** and **not being afraid** of experiment failures; ensure top performers have opportunity to complete **a focused innovation rotation**

Build teams that have a **diversity of backgrounds and thinking**; focus on recruiting talent that will continuously **challenge the status quo**

Innovation culture:

Talent allocation is the true differentiator. A-A-A places the **best and brightest** on innovation and fosters a culture of **experimentation**

Diverse teams:

Companies that have above-average diversity scores have **19 pp higher revenues from innovation** products than companies with below-average scores¹

1. Innovation revenues defined as revenue from products launched in past 3 years
Source: BCG Most Innovative Companies 2021 report (April 2021)

Additional perspectives on innovation



The CEO
Innovation Agenda
(Most Innovative
Companies 2021)



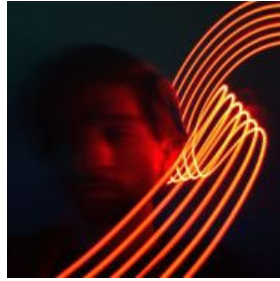
Deep Tech and
the Great Wave
of Innovation



Applying the Lessons
of the Pandemic to
Build for the Future



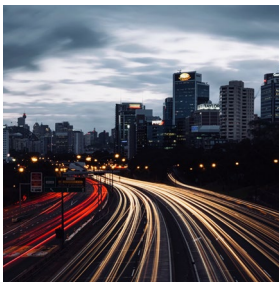
The Readiness Gap
(Most Innovative
Companies 2021)



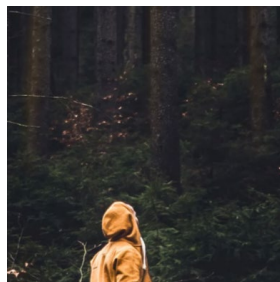
Powering the
Innovation Flywheel
in the Digital Era



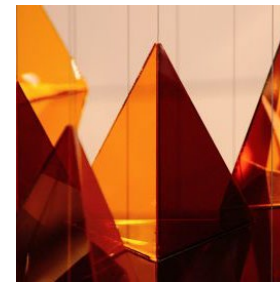
How do You Manage
a Business Ecosystem?



15 Years of the
Most Innovative
Companies



The Next Generation
of Climate Innovation



In Innovation, Big is
Back (Most
Innovative
Companies 2020)

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