

# BIG FIRMS HAVE A STRUCTURAL PROBLEM WITH INNOVATION... OR DO THEY?

## MIT–Capgemini Research Note<sup>1</sup>

Neil Thompson (MIT), Didier Bonnet (Capgemini Invent),  
Sarah Jaballah (Capgemini Invent)



# INTRODUCTION

If the literature is to be believed, **the bigger a company gets, the more rigid it becomes.**<sup>2</sup> Why? Bureaucracy, routine, and rigid resource allocation processes become shackles that prevent large firms from being agile, especially when it comes to innovation. Bigger firms are believed to focus on the exploitation of existing resources and incremental innovation over the exploration of new products, markets, or ways of working. As a result, bigger firms are believed to be more prone to disruption by smaller, more agile firms that are able to innovate faster and more efficiently.<sup>3</sup> While big players focus on sustaining innovation and improving existing products, smaller innovators invest in new business models and radical innovation. That's what Harvard professor Clayton Christensen calls "disruptive innovation."<sup>4</sup>

**In our research with MIT, we set out to test if these commonly held assumptions can be verified empirically.** Our aim was not to assess the difference in innovation practices between startups and large firms. Rather, we wanted to understand whether, as firms grow larger, there is a decrease in innovation efficiency as the literature suggests. In other words, does size matter for innovation? To do so, we surveyed 300 companies with revenues of at least \$500M from across seven industries and eight countries, which allowed us to look at how innovation practices scale as firms go from hundreds of millions in revenue to tens of billions.

In this paper, we will answer 3 main questions:

- **Are larger firms more internally focused?**
- **Are they less agile than their smaller counterparts?**
- **Are they less digital?**

# ARE LARGER FIRMS MORE INTERNALLY FOCUSED?

Larger firms are known to have a strong internal innovation system and investment capabilities, normally characterized by big, central R&D labs, which allows them to take on bigger innovation projects internally than other firms.

**The larger a firm gets, the more it is expected to rely primarily on its own internal innovation.** That's where the proverbial "not-invented-here syndrome"<sup>5</sup> kicks in: companies favor innovations from inside the company while sidelining or ignoring innovations from outside. In addition, open innovation (e.g., using external innovation sources) is widely believed to be best suited for smaller firms, allowing them to fill resource gaps that are critical to innovation in a digital age. Today, for instance, AI and machine learning skills are rare, hard to attract, and expensive – so many smaller firms need to use external innovation sources to access them.

But what about large firms? Surely, they face the same problems with advanced technologies? If the internal innovation focus of large firm is real, we would expect them to rely mostly on internal innovation sources, and to focus on bringing these rare advanced capabilities in-house.

**That's not what we found.** Our data shows that, the larger the firm, the more it uses a variety of innovation sources and the more it turns outward to external innovation sources. **Not only did the top 20% of companies in terms of revenue in our sample use more innovation sources than their smaller counterparts, they also made much more use of external innovation sources** (using 3.7 external sources on average).



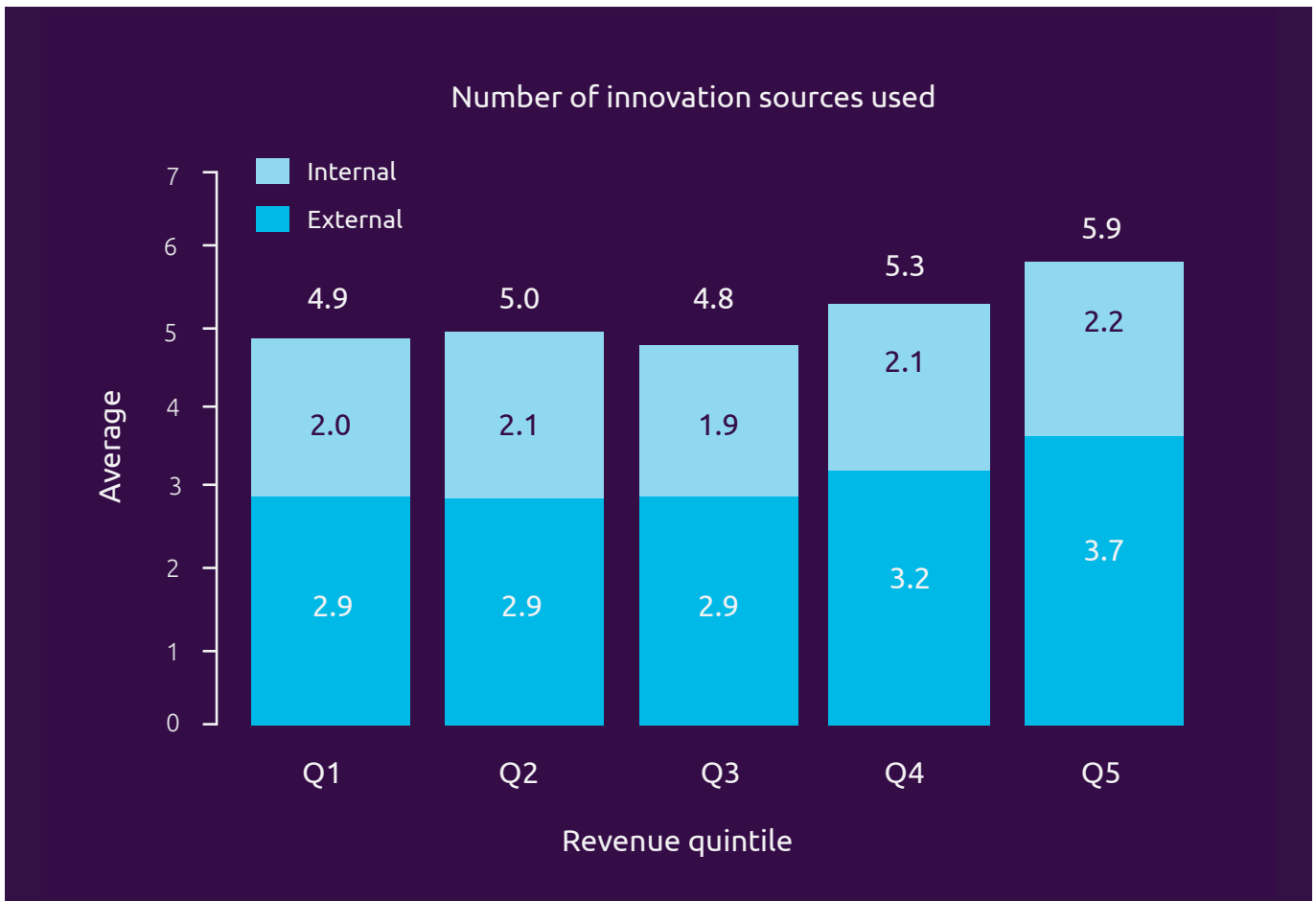
<sup>1</sup>This is a research note summarizing our main results. Detailed results are available in 2020 Thompson, Muqbil and Bonnet (forthcoming)

<sup>2</sup>Leonard Barton, Dorothy. "Core capabilities and core rigidities: A paradox in managing new product development." *Strategic management journal* 13, no. S1 (1992): 111–125.

<sup>3</sup>O'Reilly III, Charles A., and Michael L. Tushman. *Lead and disrupt: How to solve the innovator's dilemma*. Stanford University Press, 2016.

<sup>4</sup>Christensen, Clayton M., Michael E. Raynor, and Rory McDonald. "What is disruptive innovation." *Harvard Business Review* 93.12 (2015): 44–53.

<sup>5</sup>Agrawal, A. K., Cockburn, I., Rosell C. "Not invented here? Innovation in company towns," National Bureau of Economic Research, 2009.



## ARE LARGER FIRMS LESS AGILE AND OPEN THAN SMALLER ONES?

### **Smaller firms are generally believed to be more agile than their bigger counterparts.**

Intuitively, this makes sense. As a firm gets bigger, rigidity and bureaucracy create inertia, decision cycles get longer and the ability to react quickly decreases. We would normally expect large firms to be less open to the outside world and, when it comes to innovation, use fewer external sources than their smaller counterparts.

To test this second assumption, we asked companies about their use of eleven different innovation sources. Two groups of innovation sources became clear in our

analysis: traditional sources, where use is largely stable over time, and “new” sources, where adoption has accelerated in recent years.

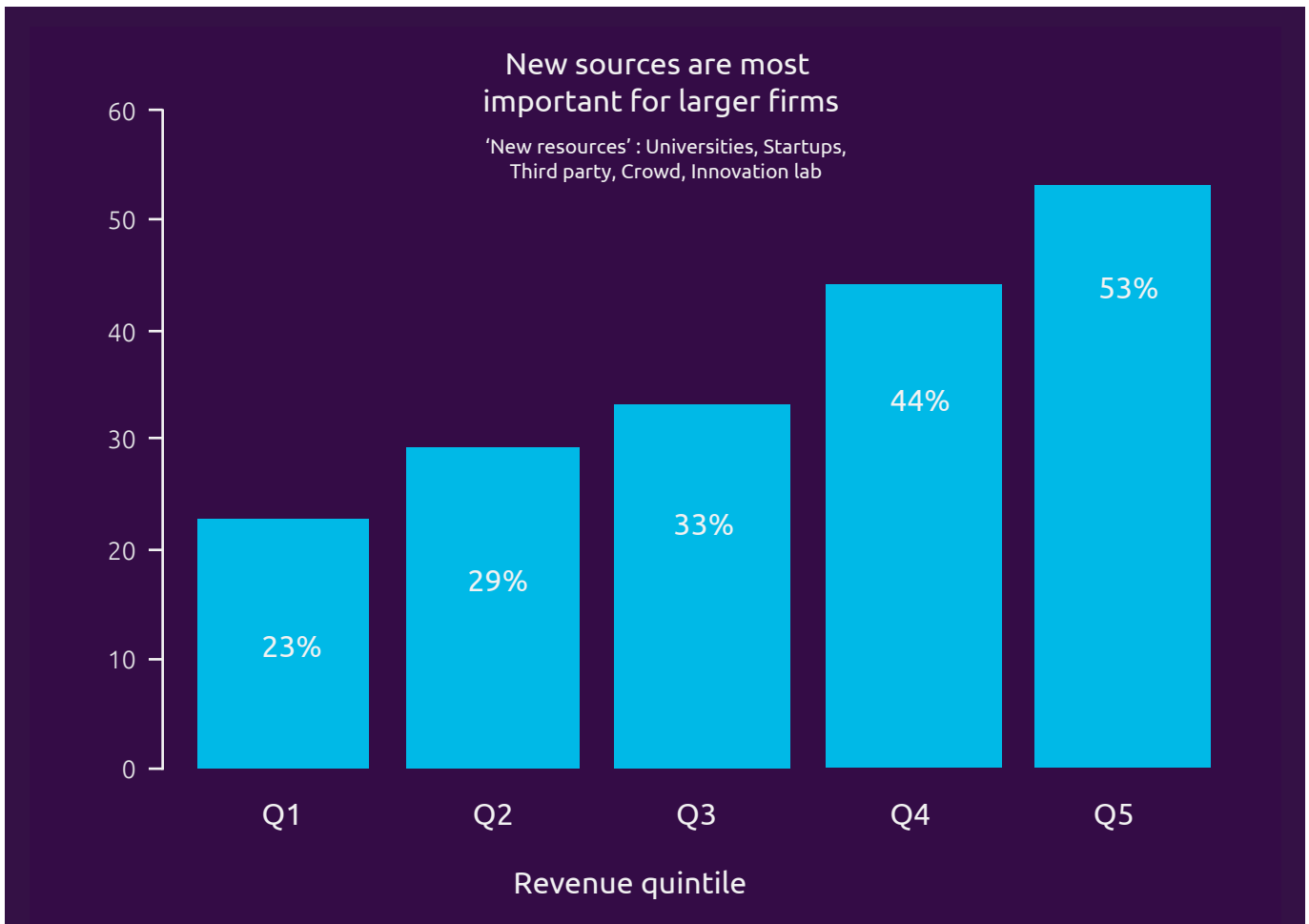
New innovation sources
<p><b>Universities</b> Universities or independent researchers who are sponsored by the company or whose innovations are licensed or otherwise acquired</p>
<p><b>Third-Party</b> Independent providers of product or services, including technology vendors, consulting/design firms, independent innovators, and opinion leaders; excluding start-ups</p>
<p><b>Startups</b> Startup who are solicited through innovation scouting, incubators, accelerators, corporate venture capital, acquisition, etc.</p>
<p><b>Crowd</b> Innovations that originate from crowd-sourcing platforms, hackathons, innovation competitions, or third-party developers</p>
<p><b>Innovation labs</b> Innovation lab dedicated to the development of a specific technology (e.g., A.I), sometime collocated with innovation hot spots (e.g, Silicon Valley)</p>

Traditional innovation sources
<p><b>Universities</b> Universities or independent researchers who are sponsored by the company or whose innovations are licensed or otherwise acquired</p>
<p><b>BU staff (dedicated)</b> Dedicated innovation staff collocated with a business unit</p>
<p><b>BU staff (operational)</b> Business unit staff who work on innovation part time in addition to their operational responsibilities</p>
<p><b>Suppliers</b> Firms who are in, or could be in, the value chain of the company, such as the suppliers or channels</p>
<p><b>Competitors</b> Innovations developed by competitors that were open-source, acquired via licensing, brought in by former employees, reverse-engineered: or that arose from industry collaborations/ associations</p>

Due to the natural agility associated with smaller firms, we expected them to be the quickest in adopting new external innovation sources. **But this was not the case. The larger firms in our sample use new innovation sources most. These new sources are also more important to big firms than they are to smaller firms.** In particular, the biggest 20% of companies in our sample said that, on average, more than half of their three most important innovation sources are new. For the smallest 20% companies, new sources represent only

23% of their top-three innovation sources. So, we can clearly see that larger companies are adopting new innovation sources more rapidly than their smaller counterparts and are also making these sources more central to their innovation strategy.





## ARE LARGER FIRMS LESS DIGITALLY SAVVY THAN SMALLER ONES?

**Smaller firms are also thought to be more digitally focused than bigger ones** because their nimbleness allows them to adopt new digital innovation faster and prevents them from being hindered by legacy systems. To test this hypothesis, we asked the companies multiple questions about the importance of digital technology in their innovation projects and their level of digital investment. We found little significant differences attributable to size. For all firms, the vast majority of projects are digital, particularly so for their most successful innovation projects. Similarly, companies of all sizes invest roughly two thirds of their innovation budget in digital or hybrid-digital projects. **So, we found no evidence that digital savvy is driven by firm size.**



# CONCLUSION

Larger firms are traditionally believed to have a conservative approach to innovation due to internal focus, routine, and bureaucracy. Our research found something very different. We see large firms leading the way. They have expanded their innovation sourcing portfolios: continuing to take advantage of their traditional sources while expanding their use of open innovation. They are also the ones adopting new innovation sources the fastest. Five years ago, they were almost the only ones using universities, startups, or innovation labs. Today, smaller firms are quickly catching up on these new innovation sources.

Through this research, we tried to test out some assumptions about the effect of company size on innovation strategy.

We found results that refute many popular beliefs about larger firms:

- **Bigger does not mean internally focused.** Quite the opposite: the bigger a firm gets, the more it uses external innovation sources. Importantly, it does not substitute external sources for internal ones, but rather extends its portfolio of sources. As a result, when revenue grows, the average number of innovation sources used increases as well.
- **Bigger firms are more agile than we thought.** Rigidity, bureaucracy, and size are all reasons to think that agility decreases as revenue grows. Again, our research shows a different pattern: bigger companies are the ones adopting new innovation sources the quickest and putting them at the center of their innovation strategy. They still use traditional sources, such as central R&D or customers, but to a lesser extent than smaller companies.
- **Larger firms are as digital as everyone else.** In our data, we found remarkable behavior in terms of digital use and investment allocation in digital projects. In this digital era, all large companies have adjusted their innovation strategy to widely integrate digital technologies.

Read more about our research on corporate innovation with MIT Initiative on the Digital Economy in our latest MIT Report [here](#). and our Sloan Management Review article [here](#).

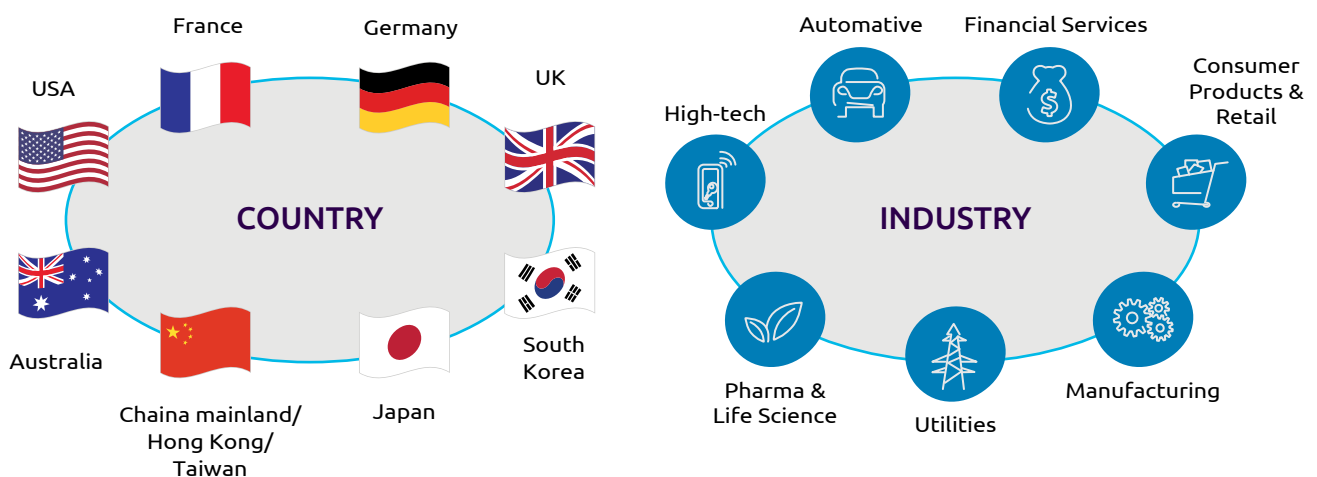
# ABOUT THE RESEARCH

The MIT-Capgemini Corporate Innovation research was conducted in 2018–19. We conducted in-depth interviews with some 30 large corporations across industries and geographies to obtain a granular understanding of their innovation practices and systems. We then structured and administered a survey to quantify these innovation practices and systems. Through Phronesis Partners, we polled innovation leaders at 320 large firms (\$500M+ revenues/year) and gathered data on 640 innovation projects. The sample covered firms from the US, China, UK, Germany, France, Australia, Japan, and South Korea across seven industries.

This is the second report of a series, after

## ‘The Foundations of Corporate Innovation in the Digital Age’.

Surveyed **Innovation Leaders** at **320** publically-traded companies with revenues of **\$500+**





# AUTHORS



**Neil Thompson**

[Neil\\_t@mit.edu](mailto:Neil_t@mit.edu)

Neil is an Innovation Scholar at MIT's Computer Science and Artificial Intelligence Lab and the Initiative on the Digital Economy. He is also an Associate Member of the Broad Institute. Previously, he was an Assistant Professor of Innovation and Strategy at the MIT Sloan School of Management and a Visiting Professor at the Laboratory for Innovation Science at Harvard. He has a PhD in Business and Public Policy at Berkeley, where he also did Masters degrees in Computer Science and Statistics. He has a Masters in Economics from the London School of Economics, and undergraduate degrees in Physics and International Development.



**Didier Bonnet**

[didier.bonnet@capgemini.com](mailto:didier.bonnet@capgemini.com)

Didier is an Executive Vice President and Global Practice Leader at Capgemini Invent. He has more than 25 years' experience in strategy development, globalization, internet & digital economics and business transformation for large multinational corporations. He is the coauthor of the book "Leading Digital: Turning Technology into Business Transformation", along with several research articles and is regularly quoted in the press. He is also an Affiliate Professor at IMD Business School teaching Strategy and Digital Transformation. Didier is graduated from a French Business School and holds a Doctorate from Oxford University.



**Sarah Jaballah**

[Sarah.jaballah@capgemini.com](mailto:Sarah.jaballah@capgemini.com)

Sarah is a senior consultant at Capgemini Invent focusing on Innovation and digital transformation. She worked on helping companies ramp-up digital projects, adopt digital technologies and implement innovation-oriented organizations. She's passionate about new technologies, their implementation into our every day lives and synergies between big companies and smaller innovative providers. She conducted research on corporate innovation as a Visiting Scientist at MIT. She holds a master's degree in International Economics from Paris I Sorbonne University, and a master's degree in Organization, Strategy and Innovation.

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