

# **EUROPEAN INNOVATION SURVEY (CIS 2020)**

## **Innovation in times of COVID**

### **Executive summary**

The 2020 European Innovation Survey was launched in May 2021, a little over a year into the COVID pandemic. Considering the magnitude of disruption in businesses and society at large, it seems natural to assume innovation rates would change dramatically. These unprecedented circumstances forced the world as we knew it to come to a screeching halt, putting everything on its head. Comparisons with previous years appear meaningless, considering the period's uniqueness. At best, one could compare internationally, thus gauging how well different countries coped with this global health crisis.

As the saying goes: necessity is the mother of invention. Life came to a halt, but only to a certain extent, and only for a short while. Ultimately, life is for the living, and those alive need food, shelter, clothing, services, medicines, etc. Companies need to survive on more than just temporary subsidies, and so society went back to work. From home, when possible. With plastic sheeting, masks, and shields when work had to be done in situ. Procedures and business processes had to be changed, products had to be adapted or invented to deal with restrictions and limitations. Therefore, innovation rates did not drop, quite the opposite.

Overall, the rate of innovation active enterprises increased moderately compared to 2018 (from 68% to 71%). Nevertheless, this is quite a substantial level compared to the European average. Product innovation is back to its 2016 level, 36%, up 6% compared to 2018. Process innovation continued to increase from 58% in 2018 to 64% in 2020. Remarkably, the rate of ongoing or abandoned innovation activities has decreased considerably: down from 49% in 2018 to 39% in 2020. It had been on the rise previously. This raises quite a few questions, as one might be inclined to think COVID would have disrupted innovation activities. Is this sudden reversal of a rising trend caused by COVID, and thus temporary, or is it a new trend? Has it become easier for firms to assess the outcome and costs of their innovation projects? Do firms organize their innovation projects differently now, for instance by considering achieving intermediary thresholds as completed innovations? Or maybe the organization of innovation projects has not changed, but technologies have evolved in such a way that completion takes less time or the process' achievement is more guaranteed than before?

Another remarkable finding is the continued downward trend in cooperation for innovation; down from 32% in 2018 to 28% in 2020. The pandemic does not seem to have had a stimulating effect on the amount of cooperation for innovation. As this tendency is not new (continuous decline since 2014), it might be interesting to investigate what lies at the heart of it. Moreover, we could find similar trends in other European countries, which might be indicative of a broader changing socio-economic context. Do firms fear greater global competition with unintended negative consequences such as a growing dominance of new economic powerhouses? Further research is required to answer these kinds of questions. Or are there other changes at the micro level at play underlying these global trends? Are firms for example protecting their in-house know-how more by working alone, as technological advances and disruptive innovations are coming at a faster rate nowadays?

The 2020 data on who developed product or process innovations confirm the declining cooperation trend, as it shows an upward trend, over the same period, in firms developing their innovations on their own combined with fewer firms developing innovations together with others.

After the worst of the pandemic is over, the worsening global economic situation and inflation (whether triggered or merely aggravated by the pandemic) may have long-lasting effects on innovation intensity for years to come. It may not necessarily be an overall negative effect, as innovations may turn out to be the

way firms try to survive in an increasingly uncertain world. The CIS 2020 data will be interesting to see whether firms continue to invest in innovations or if they go into preservation mode.

## 1. Introduction

This document describes the main results for the CIS 2020, with results for the first COVID pandemic year. This comes after the implementation of the new Oslo Manual (and its new definition for business process innovation) in CIS 2018. It is unclear whether the new Oslo Manual's observed influence on CIS results is confirmed by the CIS 2020 data, as COVID may be the culprit in either continuing or reversing trends.

## 2. Methodology

The Belgian Science Policy Office (Belspo) coordinates the Belgian CIS to ensure maximum comparability *between* regions as well as internationally, in close cooperation with regional authorities: Innoviris for the Brussels Capital Region and DG06 (SPW) for the Walloon region, and data producers, namely ECOOM for the Flemish region.

The CIS is a stratified survey. Each region samples firms by size (small: 10-49 employees, medium: 50-249 employees, and large: 250+ employees) and aggregated sector. Not all sectors are covered, as prescribed by Eurostat (only Nace codes B-M73 are included, Nace Rev.2).

The reference population was provided by the National Social Security Office's business register (RSZ-ONSS) extracted on December 31, 2020. The frame population has 14 977 firms of which 8 241 firms were sampled. The overall response rate was 55.02% and extrapolations were made to represent the entirety of the population.

## 3. Definitions and classifications

The concepts in this text come from the international recommendations in the Oslo Manual (OECD, 2018, p. 20). This manual offers the following definition for innovation:

*"An **innovation** is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)."*

The definition for Business process innovation is:

*"A **business process innovation** is a new or improved business process for one or more business functions that differs significantly from the firm's previous business processes and that **has been brought into use by the firm**. (...) The taxonomy of business functions proposed in this manual maps reasonably well onto the previous edition's categories of process, marketing, and organizational innovations."*

The definition for Product innovation is:

*"A **product innovation** is the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics."*

## 4. Innovation pre-COVID

CIS 2018 was the first innovation survey to implement the revised Oslo Manual, with its new business process innovation definition. This new definition basically combined three innovation types of the old definition into one, namely process, organizational, and marketing innovations became business process innovation. The result was an increase in the share of innovation active firms, as well as business process innovators. Looking more closely and separating the old marketing and organizational innovations from process innovations, an increase in process innovation was evident, with a marked decline in both marketing and organizational innovations when comparing the data with CIS 2016.

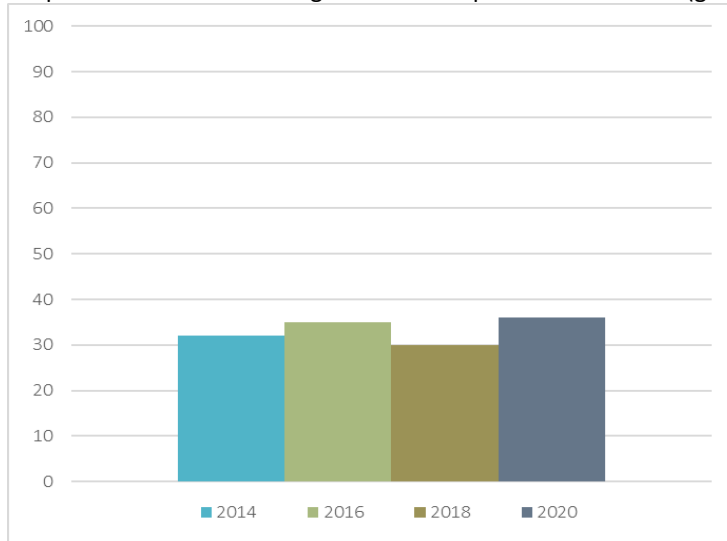
Ideally, CIS 2020 would have given us more insight into the new business process innovation definition's influence on results. Unfortunately, COVID most probably had a much larger impact. Several aspects can have an influence on a voluntary survey such as the CIS in Belgium. Many respondents received the questionnaire late, as they had been working from home and the questionnaire was mailed to the office. Therefore, they had little time to answer. Considering the number of hurdles firms had to overcome, from reorganizing processes, to dealing with a plethora of uncertainties such as employees having to quarantine, another lockdown, supply issues, market demands not following traditional patterns and seasons, etc. answering a voluntary questionnaire was the least of their worries.

## 5. Most salient differences between CIS 2020 and previous editions

### 5.1 Product and business process innovators

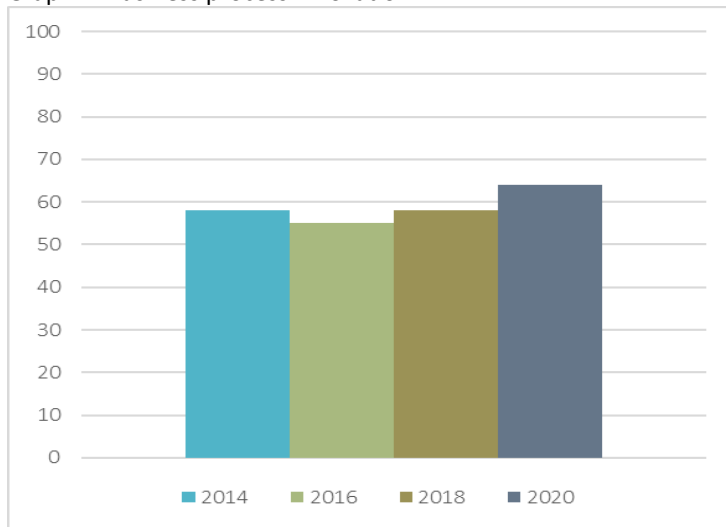
The share of product innovators can vary year to year. After a dip in 2018, the rate of product innovators has gone up again to slightly over its 2016 level. This might be because some firms switched production to making face masks, ventilators, sanitizing gel, etc. Especially in the beginning of the pandemic, those items were in high demand, and shortages were threatening the country's health system.

Graph 1: Rate of firms having introduced a product innovation (goods or services)



The rate of firms having introduced a process innovation continues to rise. The question is whether this is just a continuation of an existing trend, or if the lockdowns and restrictions imposed by the pandemic have just given process innovations a boost that may fade away after the pandemic is over. Some of these process innovations may be relatively insignificant, as placing workers on a production line further apart or placing plastic shields between employees would not improve productivity or a firm's bottom line.

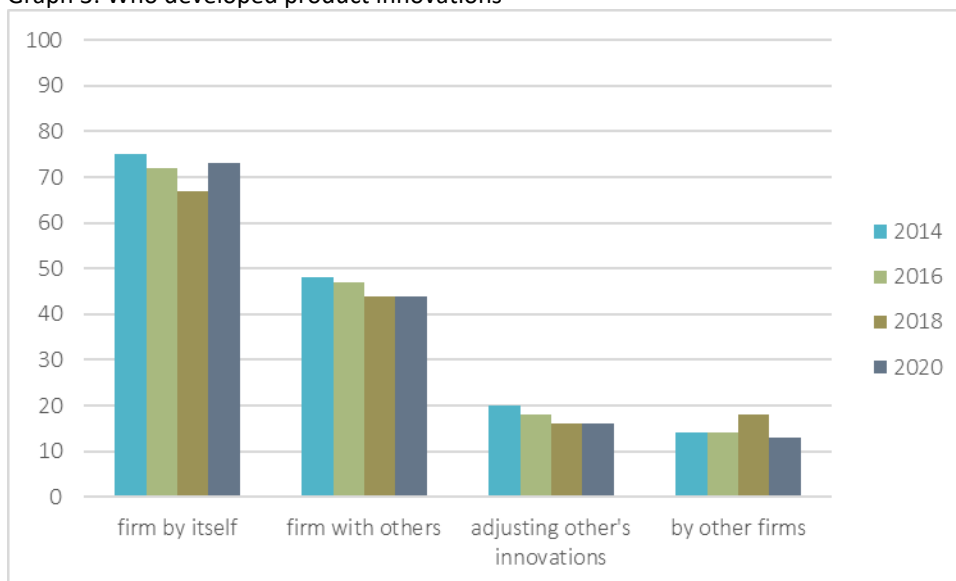
Graph 2: Business process innovation



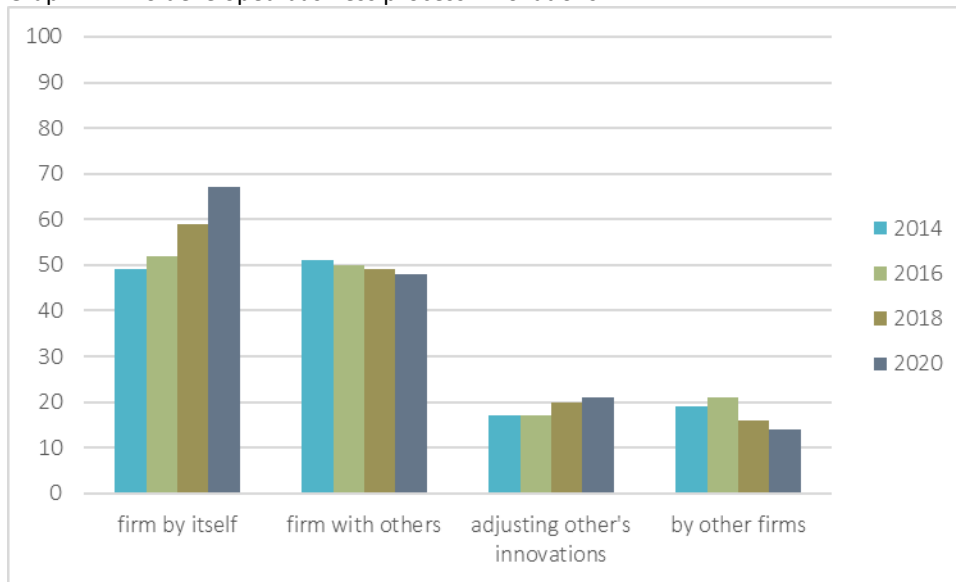
#### 5.4 How do firms innovate?

Firms having introduced product or business process innovations developed these innovations more often on their own in 2020 than in cooperation with other firms or any other way. It seems logical that firms were forced to work more independently, as lockdowns, social distancing rules, and “bubbles” were the rule for a large part of 2020. Restrictions included a limited number of people one was allowed to be in close contact with, forced working from home when possible, limiting the number of people who were allowed to be within a confined space, etc. These rules made cooperation and working with other firms difficult. Graph 4 confirms firms were less likely in 2020 to cooperate with other firms on their innovations.

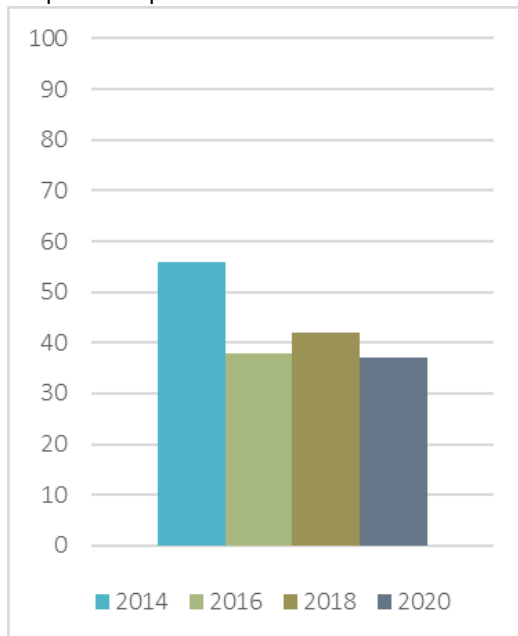
Graph 3: Who developed product innovations



Graph 4: Who developed business process innovations



Graph 5: Cooperation on innovations

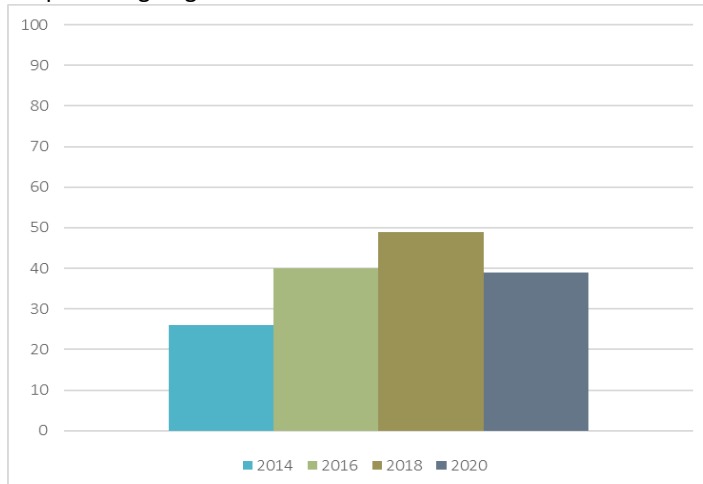


## 5.4 Ongoing or abandoned innovations

After the rate of firms reporting ongoing or abandoned innovation activities consistently grew over the past six years, a significant drop occurs in 2020. The reasons for consistent growth in the past as well as the recent sudden drop are difficult to discern. Considering the 2018-2020 observation period for CIS 2020, circumstances in which firms had to operate were mostly similar to previous years. Did respondents focus mainly on 2020 when reporting their ongoing or abandoned innovation activities or do the data

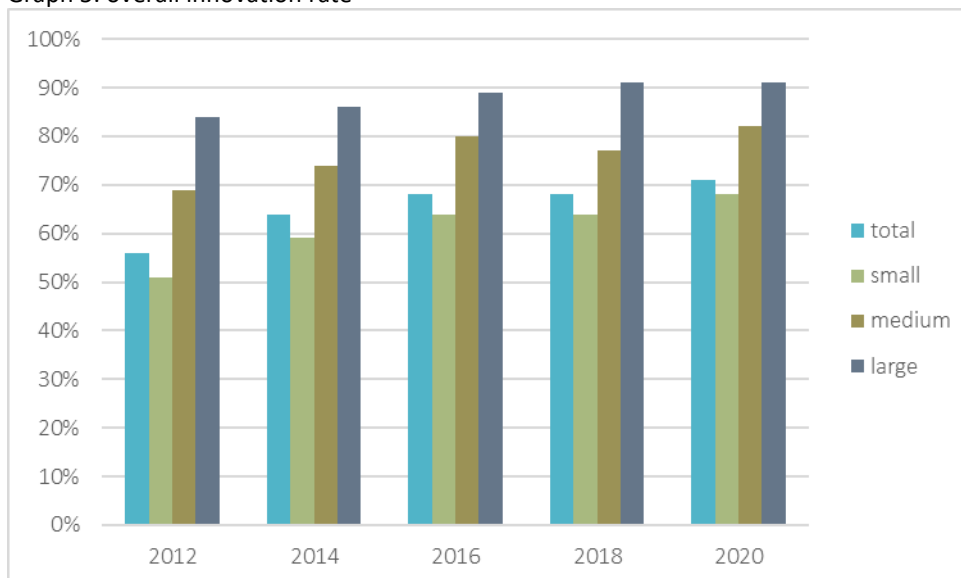
really reflect the entire period? If the former is true, this might possibly explain the reversal of a trend, as firms may not have initiated innovation projects in 2020 which they weren't sure to accomplish.

Graph 6: Ongoing or abandoned innovation activities



Overall, the rate of innovating firms keeps rising, albeit moderately. Large firms continue to represent the bulk of innovating firms, but small and medium sized firms are creeping up on them.

Graph 5: overall innovation rate



## 6. Conclusions

The most important difference between CIS 2020 and previous years, as it is an unexpected result, is the diminished share of firms reporting ongoing or abandoned innovation activities. The 2020 pandemic must have disrupted a good number of innovation plans, as firms were finding new ways to work, switching productions to new products, etc. Maybe firms had to focus on shorter innovation projects, forced by circumstances and the urgency of adapting to unprecedented circumstances? Yet, two-thirds of the CIS observation period was before the pandemic broke out. Was this such a different period or did respondents answer mainly with 2020 in mind?

Comparison between CIS 2020 and CIS 2022 will most certainly prove to be similarly difficult, seeing it will cover the 2020-2022 pandemic period, the war in Ukraine, mounting international tensions between the US, Russia, and China, and the (beginning of a) recession. Innovation may have been stimulated by the pandemic, but will this boost continue throughout the health crisis, and in an economic downturn, will firms continue to invest in innovation?