

A hand holding a glowing lightbulb over a laptop keyboard. The background is a blurred office setting with a laptop and a mouse. The lightbulb is the central focus, emitting a bright glow. The hand is positioned as if presenting the lightbulb. The overall color palette is warm, with orange and yellow tones on the left and right, and a cooler, greyish-blue on the right side.

2017 Innovation Barometer in Catalonia

June 2018

ACCIÓ



Generalitat de Catalunya
Government of Catalonia

Strategy and Competitive Intelligence

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DESCRIPTION

The Innovation Barometer in Catalonia is a globally pioneering initiative that aims to assess the innovation of companies. It analyses the state of innovation in Catalonia by looking at new approaches that place greater emphasis on intangible assets, and also offers direct information on the innovation processes being carried out within Catalan companies. It has made it possible to reduce the current gap of nearly two years between the official surveys and analyses on innovation.

Below are the main conclusions and results of this fourth edition of the Barometer, which collated statistical information on the state of innovation in Catalonia in 2017.

MAIN CONCLUSIONS FOR 2017

- Companies allocated more resources to R&D.
- Most companies that engage in R&D activity expected to produce a new or improved product or service in 2018.
- The percentage of innovative companies grew.
- The bulk of innovative activity was carried out by companies under five years old.
- More companies introduced new technologies for the digital transformation.
- The introduction of big data predominated, and the percentage of companies that started using 3D printing doubled.
- There was a clear link between innovation and internationalization.
- Innovative companies aimed to increase turnover, employment and efficiency in 2018.
- The companies that introduced technologies for the digital transformation expected to have better results than those that did not.

TECHNICAL NOTE

- The reference population consisted of all Catalonia-based companies with more than nine employees.
- The sample included 1,200 companies as representative of the whole of Catalonia, with a sampling error of not more than $\pm 2.8\%$ for a confidence level of 95.5%.

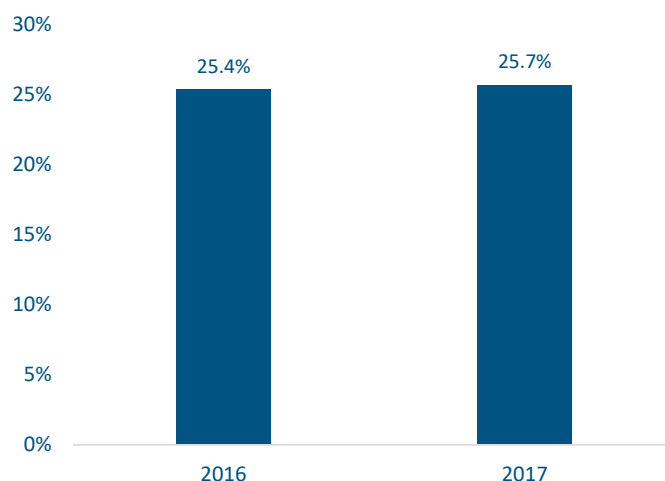
2017 RESULTS

1. RESEARCH AND DEVELOPMENT

The percentage of companies that engaged in R&D remained steady

25.7% of Catalan companies (with more than nine employees) acquired or developed R&D in 2017, a slightly higher percentage than in 2016 (25.4%).

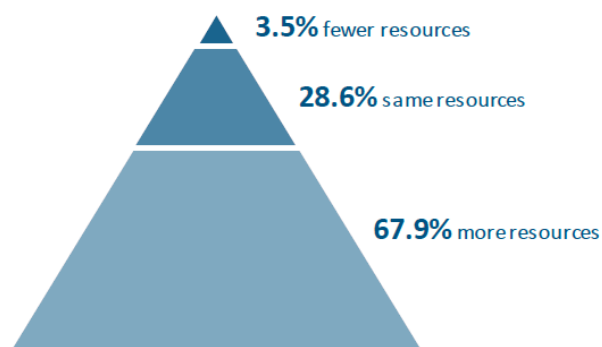
Percentage of companies with R&D
(% of total number of companies with more than nine employees)



Companies allocated more resources to R&D

67.9% of companies allocated more resources to R&D in 2017 than in 2016 (58.2%), 28.6% allocated the same resources and just 3.5% allocated fewer resources.

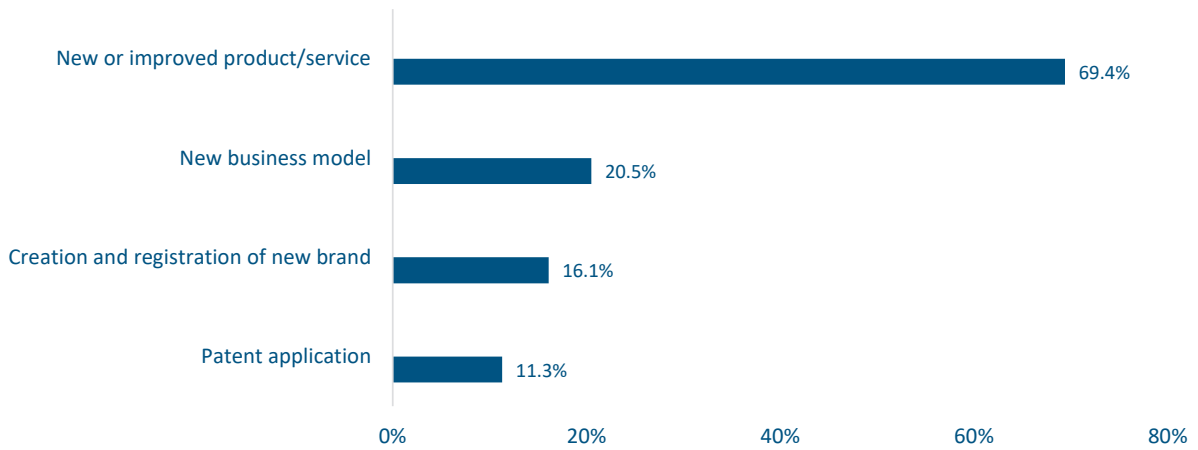
Resources allocated to company R&D in 2017 compared to 2016
(% of total companies with R&D)



Nearly 70% of companies with R&D activity expected to produce a new or improved product or service in 2018

Most companies that acquired or developed R&D in 2017 (**69.4%**) expected to produce a new or improved product or service in 2018.

Results expected by companies with R&D in 2018
(% of total companies with R&D)



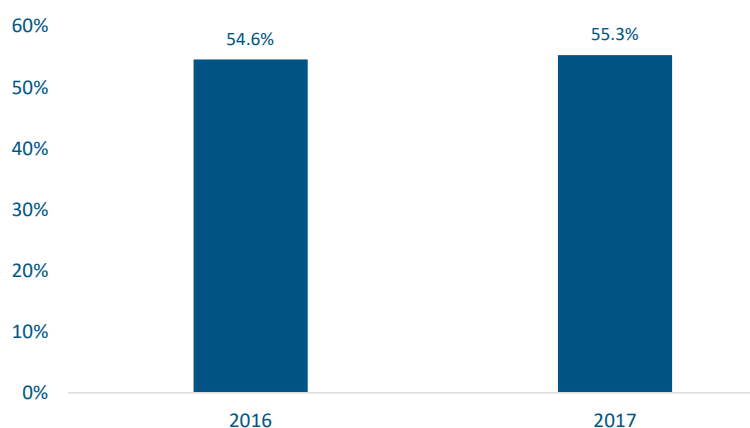
2. INNOVATIVE ACTIVITY

The percentage of innovative companies grew slightly

55.3% of companies carried out some kind of innovation in 2017, a higher percentage than in 2016 (54.6%).

Percentage of innovative companies

(% of total number of companies with more than nine employees)

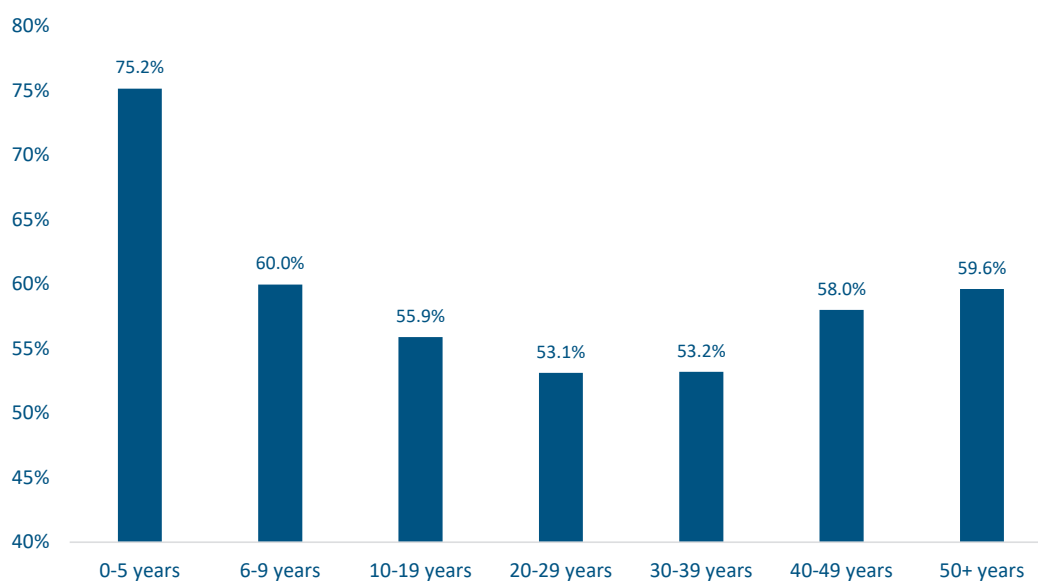


The bulk of innovative activity was carried out by companies under five years old

Most innovative activity was carried out by companies under five years old; 75.2% engaged in innovation, more than any of the other company age brackets.

Innovative companies by age bracket

(% of total companies)

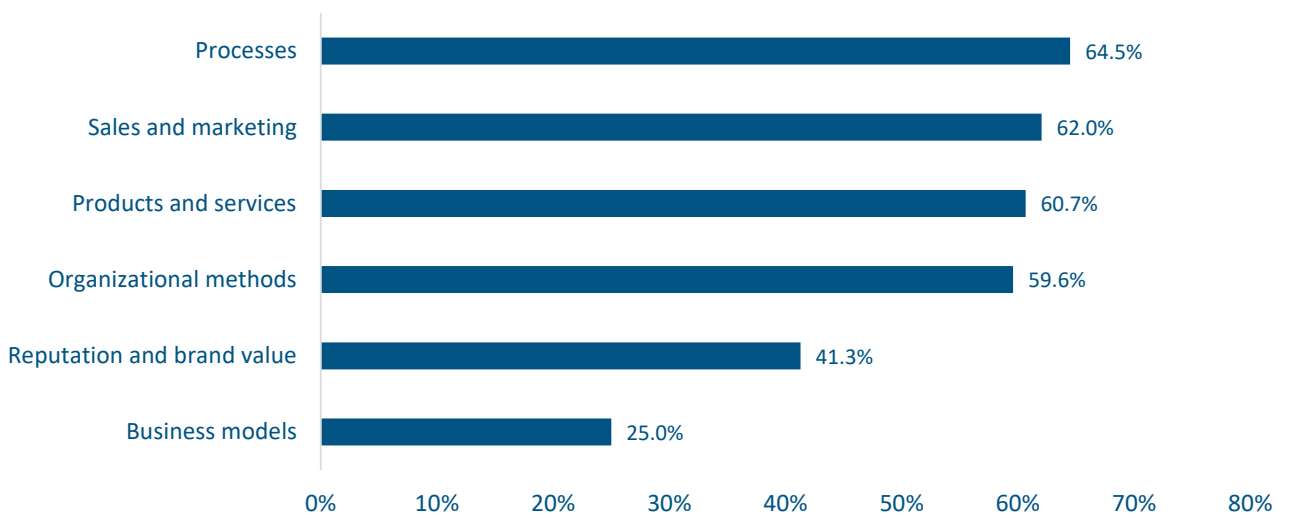


Catalan companies innovated primarily in process

For the second year running, most innovation took place in the field of processes (**64.5%** of total innovative companies); this was followed by sales and marketing (**62%**), products and services (**60.7%**) and organizational methods (**59.6%**). Companies also innovated, albeit to a lesser extent, in the fields of reputation and brand value (**41.3%**) and business models (**25%**).

Companies that innovated in one of the following fields in 2017

(% of total innovative companies)

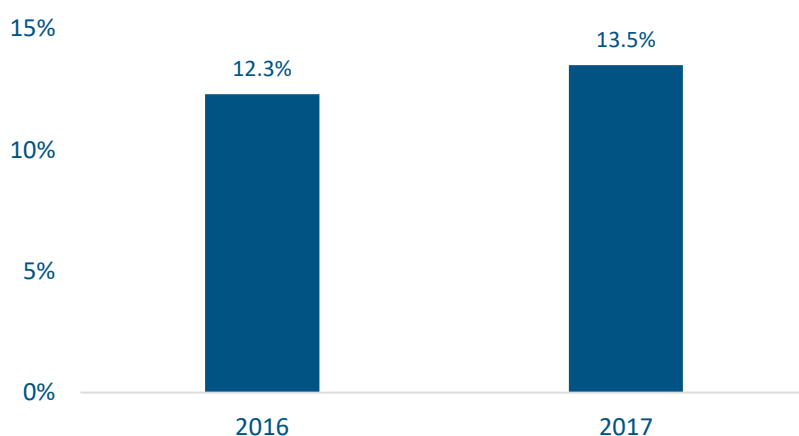


3. INTRODUCTION OF NEW TECHNOLOGIES

There was a rise in the introduction of new technologies for the digital transformation

13.5% of Catalan companies with more than nine employees indicated that they introduced some kind of technology for the digital transformation in 2017, a higher percentage than in 2016 (12.3%).

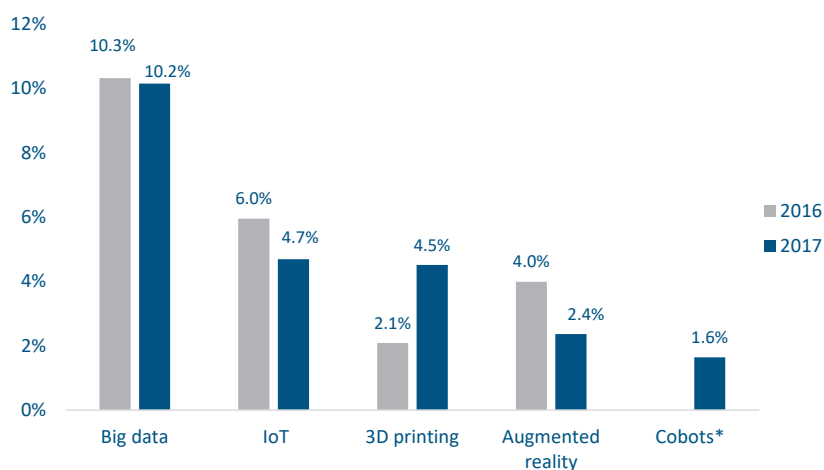
Introduction of new technologies
(% of total companies)



The introduction of big data was predominant, and the percentage of companies that started using 3D printing doubled

Big data was the most commonly introduced digital technology among Catalan companies in 2017, with 10.2%. This was followed by the Internet of things (IoT) with 4.7%. The percentage of companies that introduced 3D printing technology grew from 2.1% in 2016 to 4.5% in 2017.

Introduction of new technologies by type, 2016-2017
(% of total companies)



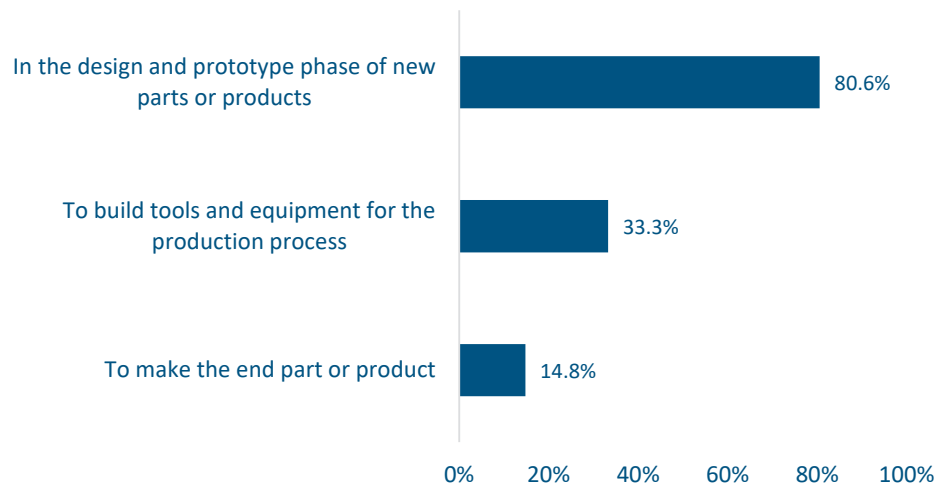
*Data available for 2017 only.

3D printing was used primarily in product prototyping and design

80.6% of companies that introduced 3D printing in 2017 used it to design and prototype new parts or products, 33.3% used it to build tools for the production process and 14.8% used it to produce the end product.

Objectives of introducing 3D printing

(% of total innovative companies that implemented 3D printing)

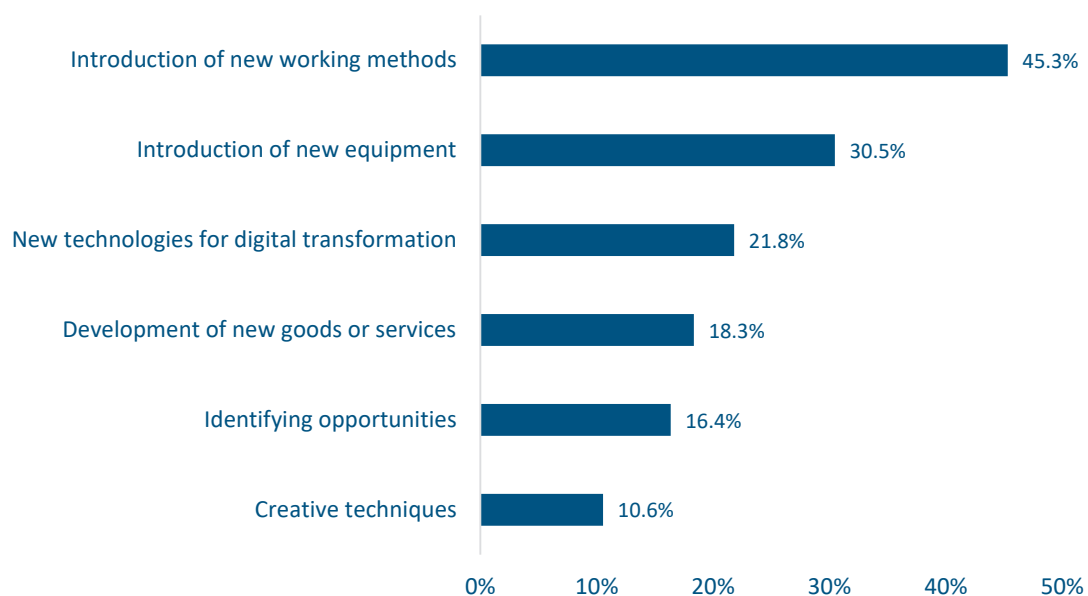


4. INNOVATION TRAINING

New digital technologies represented the third most common innovation-related training field

69.9% of innovative companies allocated resources to training their employees in innovation-related aspects in 2017. The employee training provided by companies related primarily to new working methods (45.3%) and the introduction of new equipment (30.5%). The third most prevalent training field was new technologies for the digital transformation (21.8%).

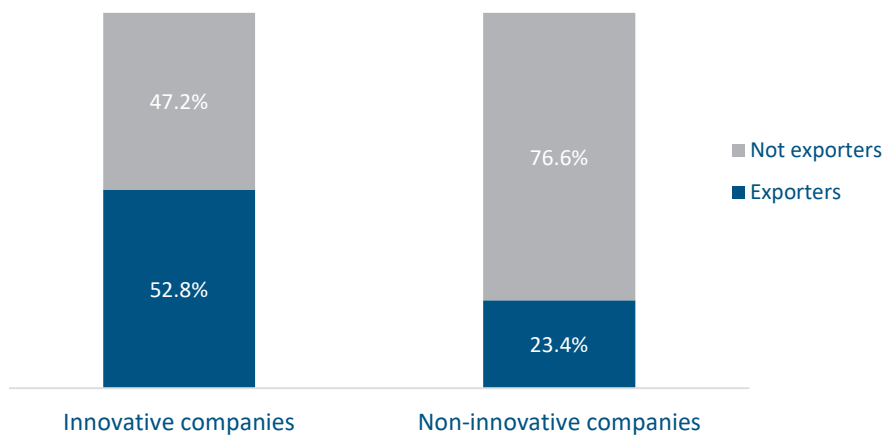
Innovative companies that trained their employees in one of the following fields, 2017
(% of total innovative companies)



5. THE RELATIONSHIP BETWEEN INNOVATION AND INTERNATIONALIZATION

52.8% of innovative companies were exporters in 2017. By contrast, just 23.4% of non-innovative companies were exporters.

Export profile of companies, 2017
Innovative vs. non-innovative companies
 (% of total innovative and non-innovative companies)



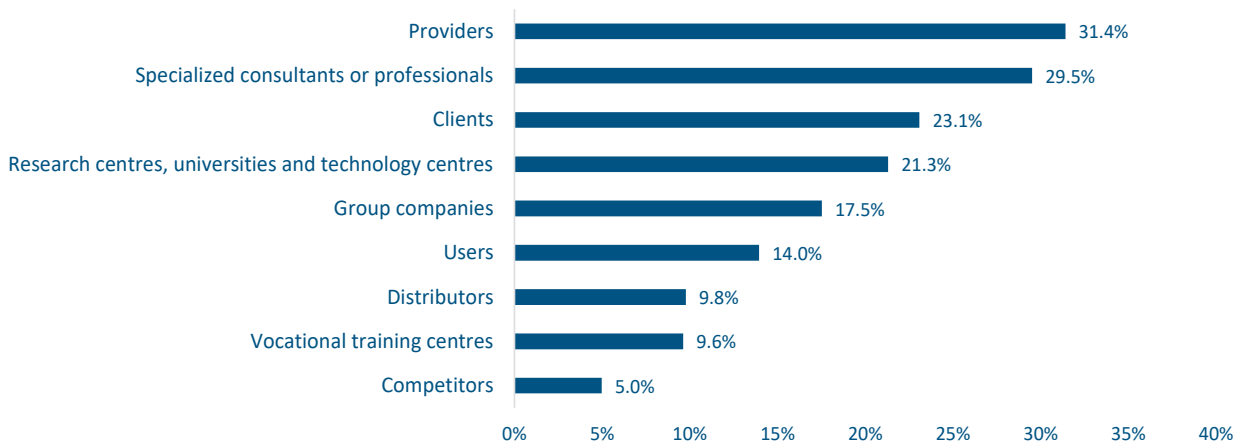
Within industry, the relationship between innovation and internationalization was clearer: 86.7% of innovative companies were exporters.

6. COLLABORATION IN INNOVATION

Most collaboration was carried out with providers, specialized professionals and clients

Among Catalan innovative companies, most collaboration was carried out with providers (**31.4%** of innovative companies), consultants or professionals (**29.5%**) and clients (**23.1%**).

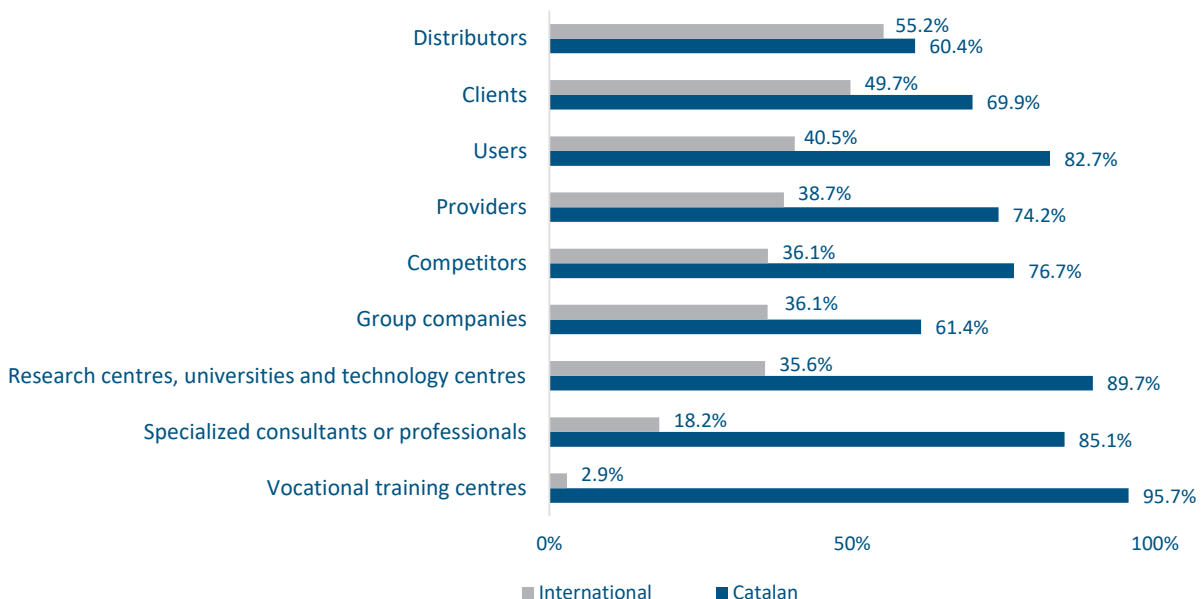
Collaboration of innovative companies by agent type
(% of total innovative companies)



International collaboration on innovation increased

53.7% of innovative companies that engaged in collaboration did so on a global level, a higher percentage than the previous year (**49.7%**).

International collaboration of innovative companies by agent type, 2017
(% of innovative companies that engage in collaboration)

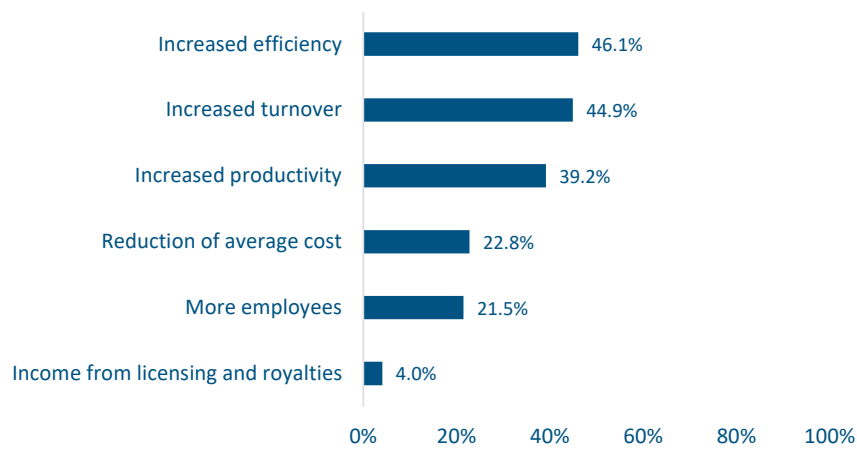


7. IMPACT OF INNOVATION

44.9% of Catalan companies expected to increase their turnover as a result of innovation

As a result of innovation, **46.1%** of Catalan companies with more than nine employees expected to increase efficiency in 2018, **44.9%** expected to increase turnover and **39.2%** to increase productivity. It is also worth noting that one in five companies (**21.5%**) expected to create more jobs as a result of innovation.

Projected impacts for 2018
(% of total companies)

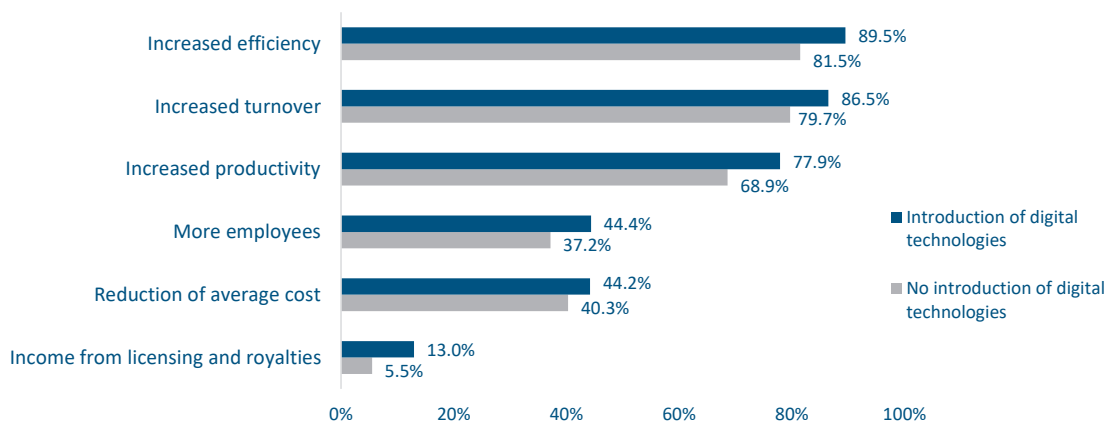


The companies that introduced technologies for the digital transformation expected to have better results

The companies that introduced digital technologies in 2017 expected better results than those that did not introduce such technologies: especially in the area of **efficiency (89.5% vs. 81.5%)**, **turnover (86.5% vs. 79.7%)** and **job creation (44.4% vs. 37.7%)**.

Projected impacts for 2018. Introduction of digital technologies vs. non-introduction of digital technologies

(% of total innovative companies)



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