



**BUSINESS
FINLAND**

Photonics industry in Finland 2023

Survey results

Boost Brothers Oy

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***Photonics industry in Finland 2023* -survey received a good number of responses**

- **The survey was aimed at Finnish companies operating in the field of photonics**
 - The survey received 128 responses and the response rate was approximately 18%
- **The survey was conducted as a follow-up survey for the *Photonics industry in Finland 2020* -survey**
 - The survey follows a similar structure to that of the 2020 survey, which enables direct comparisons between the results to gain a deeper understanding of the photonics market development
- **The survey was carried out during Spring 2023 during times of great economic uncertainty due to post covid financial stress, high inflation and war in Ukraine**

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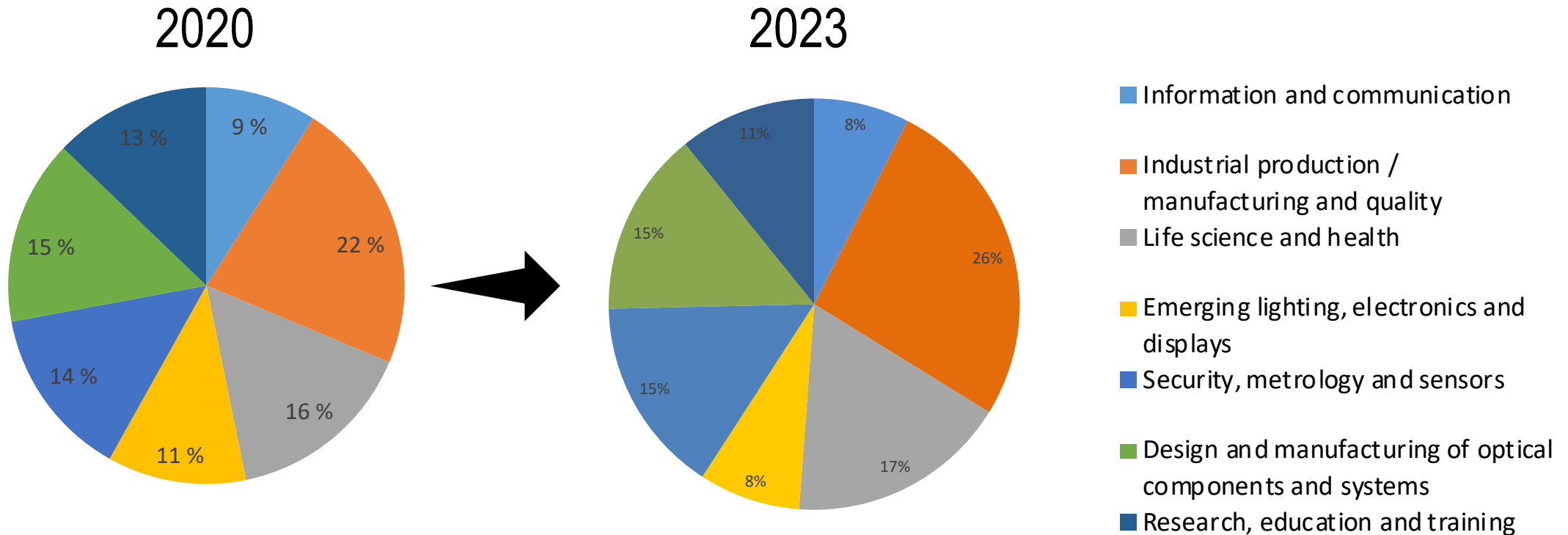
Total annual revenue of photonics business in Finland is over 2 billion euros, and the photonics business directly employs more than 6000 workers in Finland

Total annual turnover of photonics companies in Finland



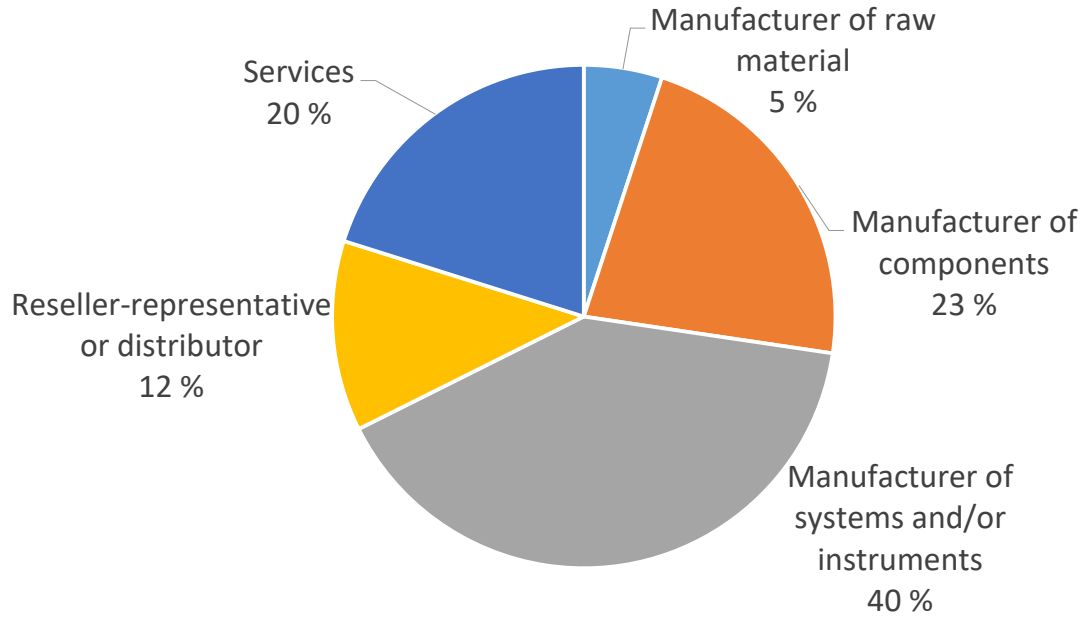
- **Finland has at least 300 companies with photonics activities based on survey results**
 - Compared with the results from 2020 survey, the number of active companies has increased by approximately 40 companies
 - Majority of photonics companies (62%) are small with approximately 5M€ annual turnover
 - Median Finnish photonics company has approximately 10 employees
- **The estimated total revenue of photonics business in Finland is 2 000 – 3 000 meur**
 - Compared to the results from the 2020 survey, the industry has grown approximately 50 %
 - The annual growth rate of the industry has been approximately 14 %
- **6000 - 7500 employees of Finnish photonics companies are directly working with photonics.**

Industrial manufacturing continues to be the most important target market for photonics companies

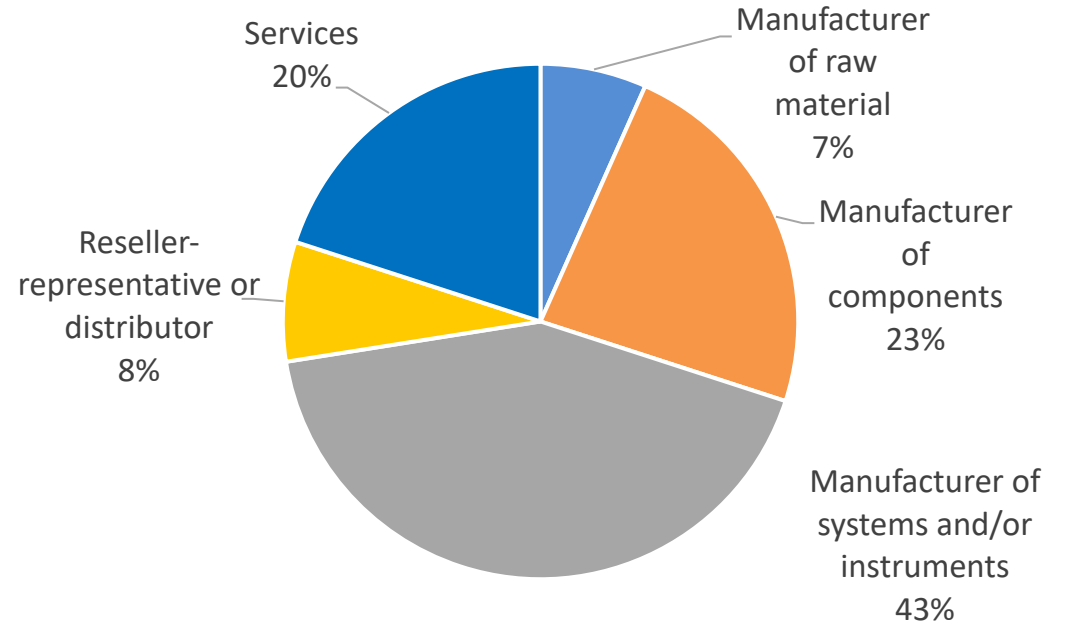


Most photonics companies in Finland are manufacturing systems, instruments and components.

Offering of Photonics companies in Finland 2020



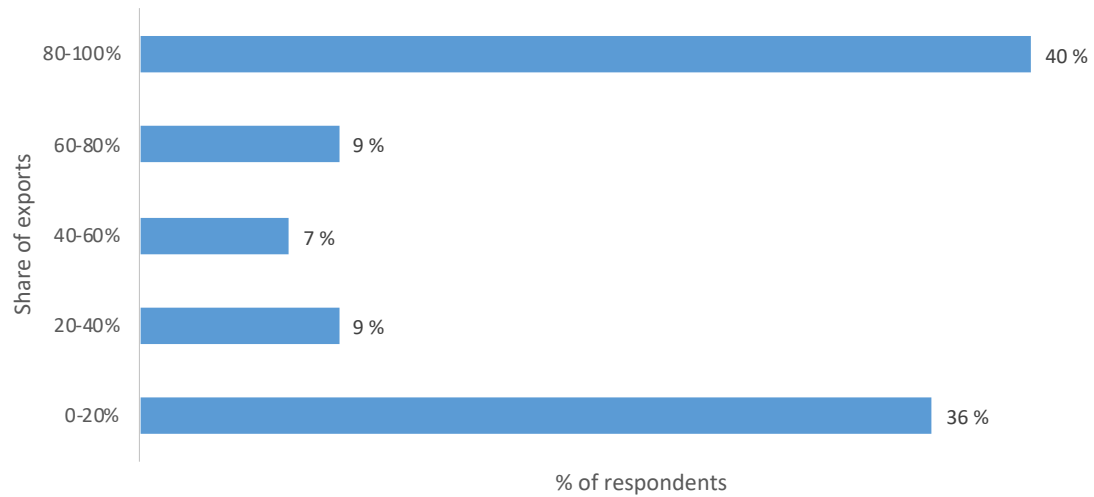
Offering of Photonics companies in Finland 2023



Finnish photonics companies are export-intensive. However, increasing number of companies supply also domestic markets.

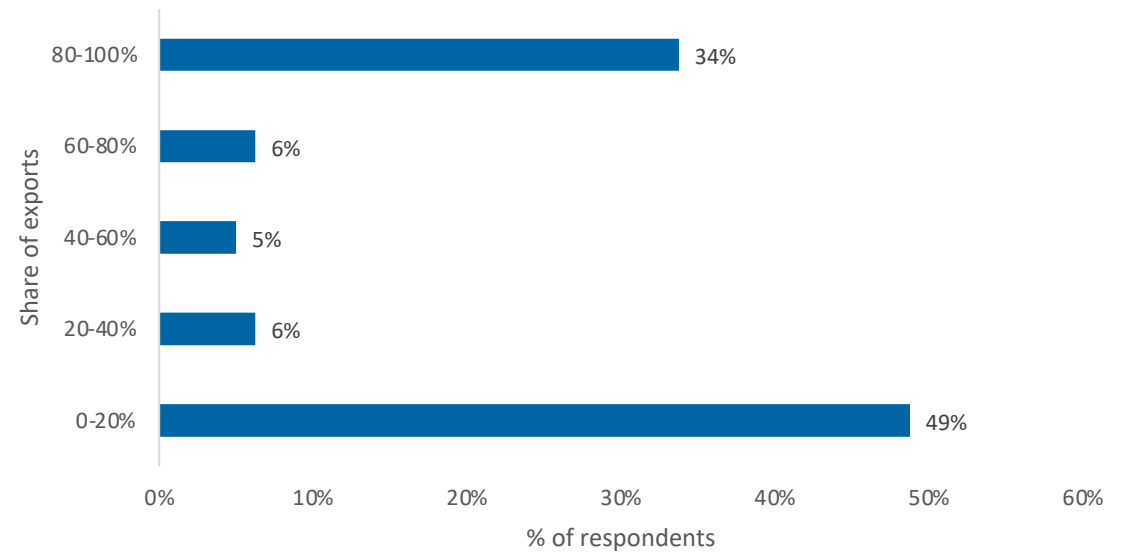
2020

Share of exports of your company's photonics related products and/or services of your company's turnover currently



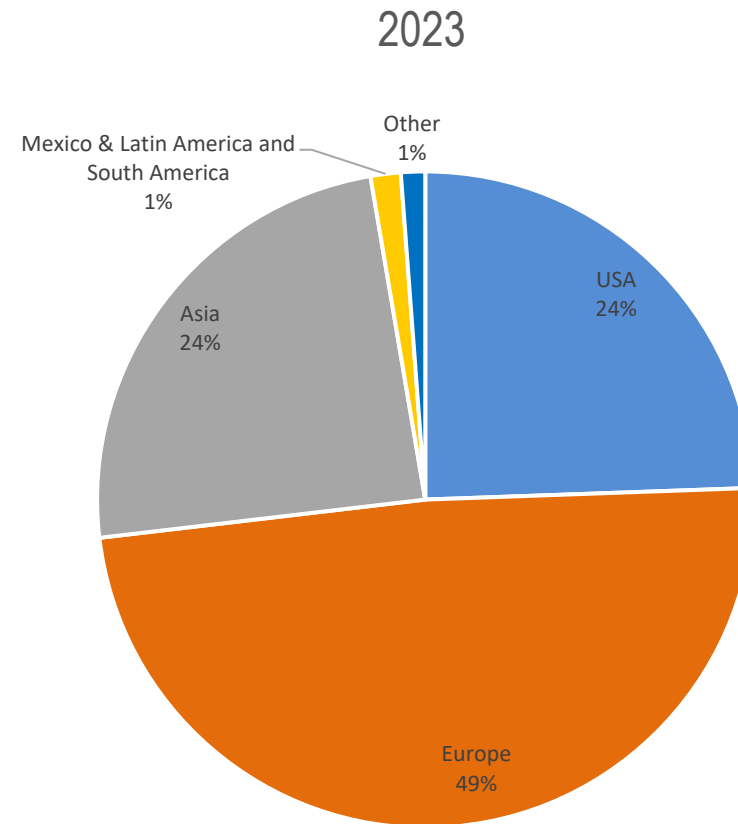
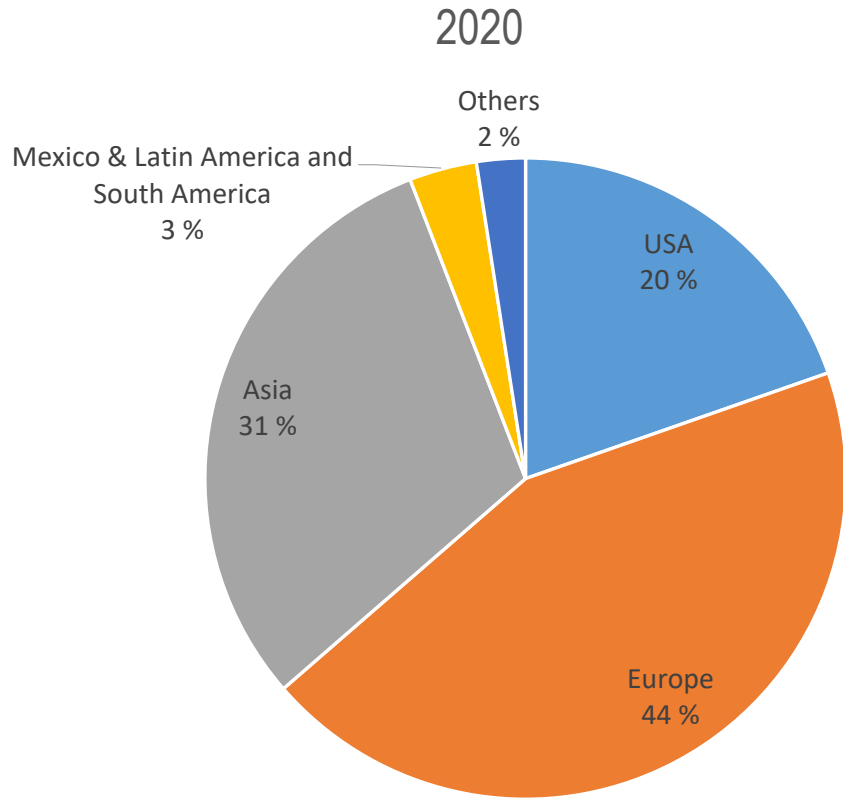
2023

Share of exports of your company's photonics related products/ or services of your company's turnover currently



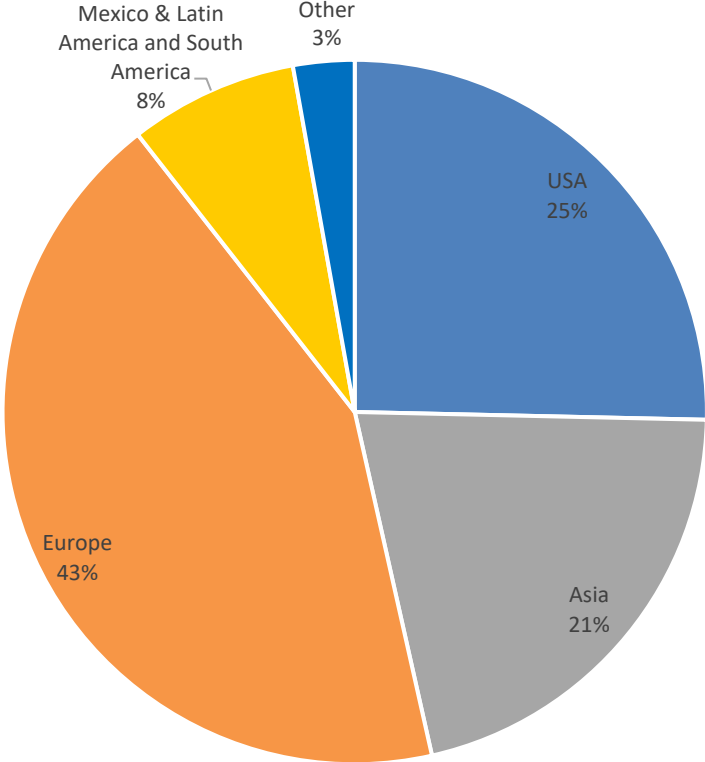
The key export markets for Finnish photonics companies are Europe, Asia and USA

Key export markets for photonics related products and services

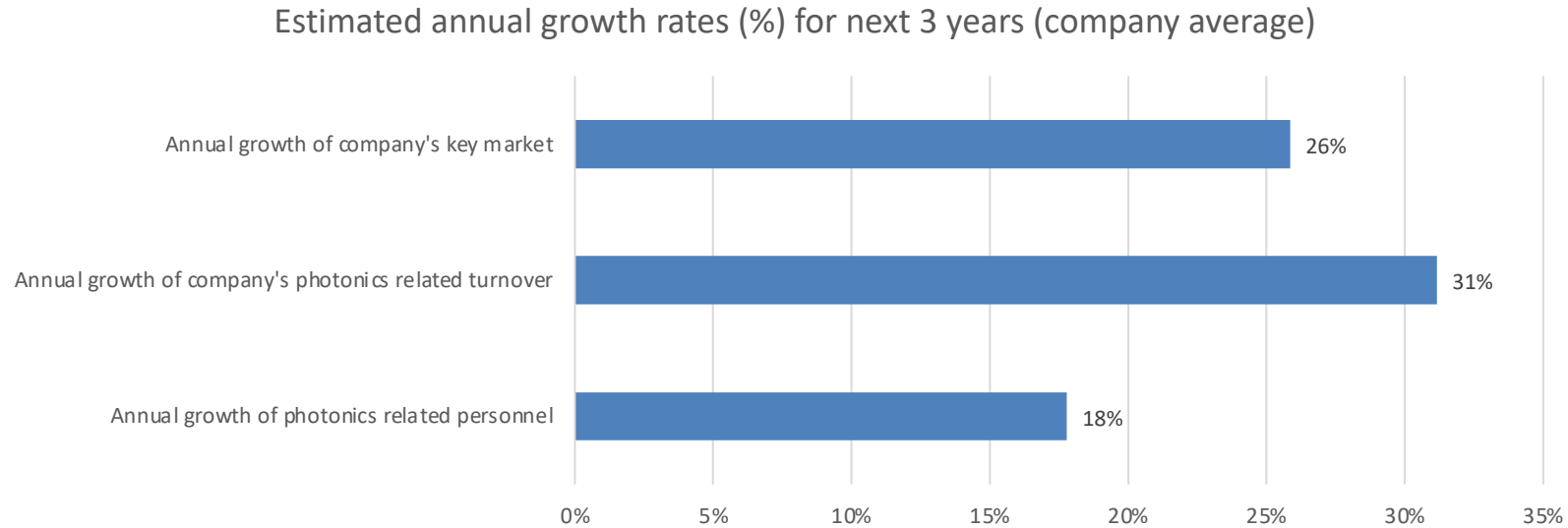


Companies expect to increase exports to Europe, USA, Asia and emerging markets

Key markets companies would like to increase their exports to in 2023



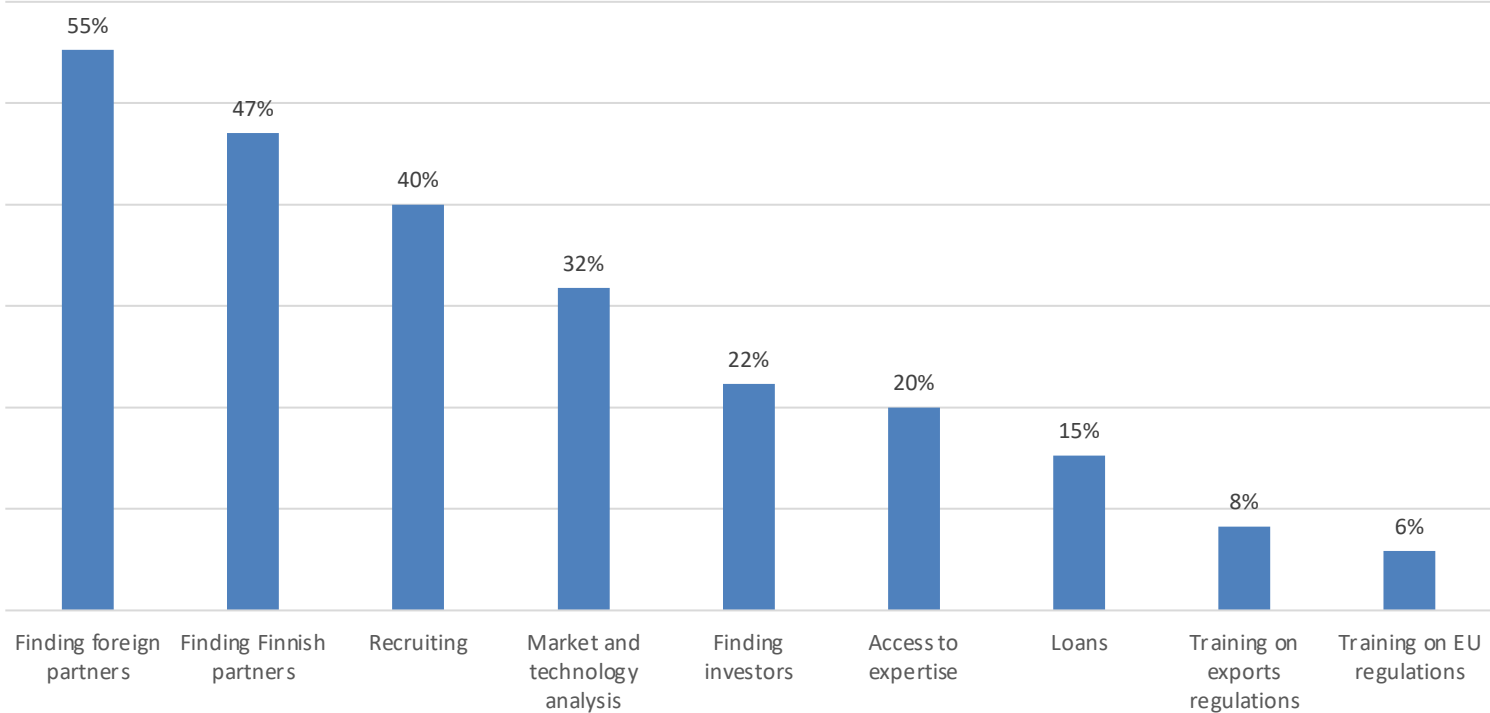
The Finnish photonics companies have high growth expectations for the next 3 years



- Companies expect their **key target markets to grow 25,8% annually** for the next 3 years (**29,0% in 2020**)
- Companies expect their **photonics related turnover to grow 31,2% annually** for the next 3 years (**38,0% in 2020**)
- Companies expect their **number of employees to grow 17,8% annually** for the next 3 years (**31,2% in 2020**)

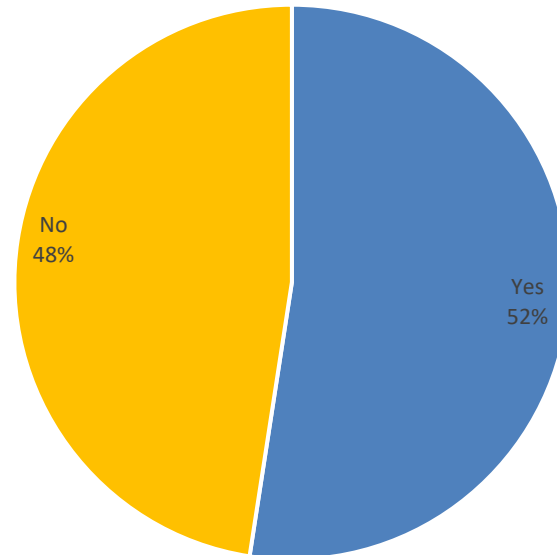
Finding domestic and foreign partners, recruiting and market & technology analysis are the most important facilitators for the growth of photonics companies

What kind of assistance would facilitate the growth of your company



Half of the Finnish photonics companies have considered EU funding framework for pre commercial R&D

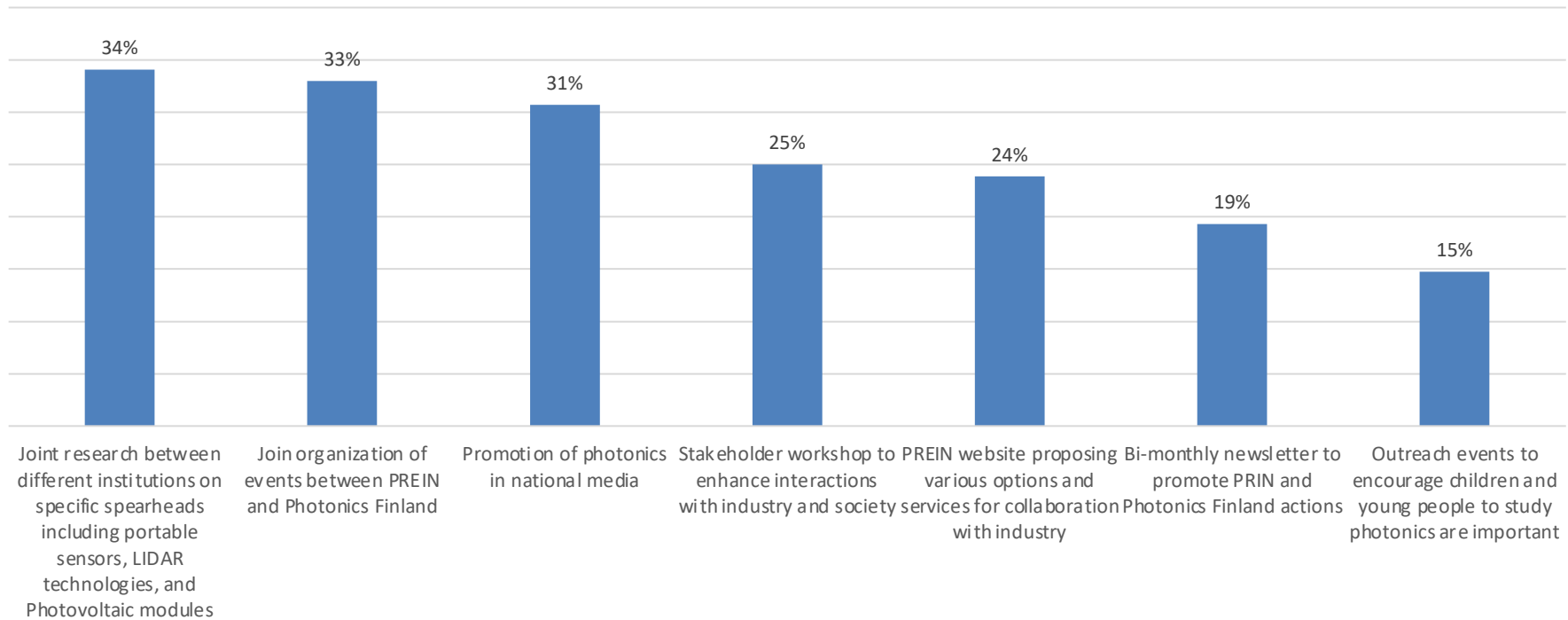
Have companies considered EU funding framework for pre commercial R&D



- Interestingly, majority of the companies that have considered EU funding framework for pre commercial R&D are small companies with turnover under €10M

Finnish photonics companies see joint event organization, joint research and media promotion as the most important functions of PREIN (The Flagship on Photonics Research and Innovation)

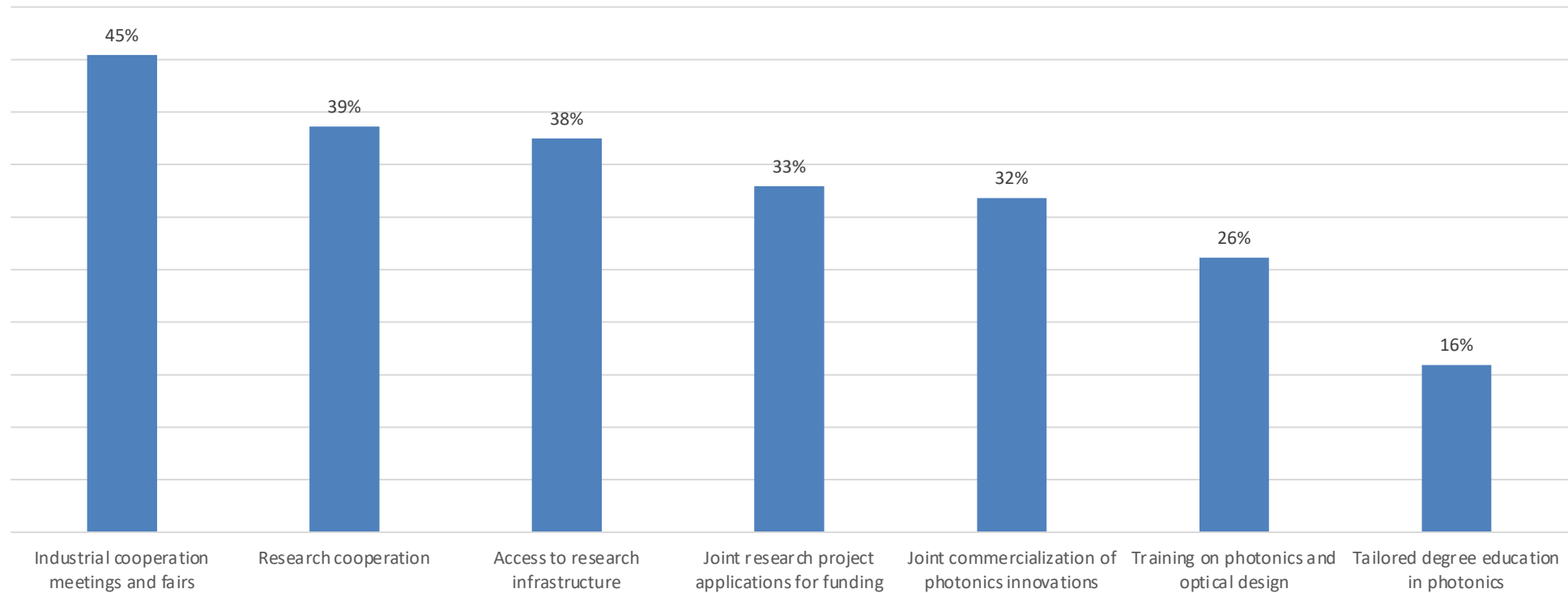
Which of the following actions implemented by PREIN are useful for supporting the Finnish Photonics Ecosystem



- Companies are more interested in Bi-monthly newsletter than in 2020.
- Outreach events to encourage children and young people to study photonics was seen less important.

Finnish photonics companies expect PREIN to provide a platform for cooperation in research as well as in industrial meetings and fairs

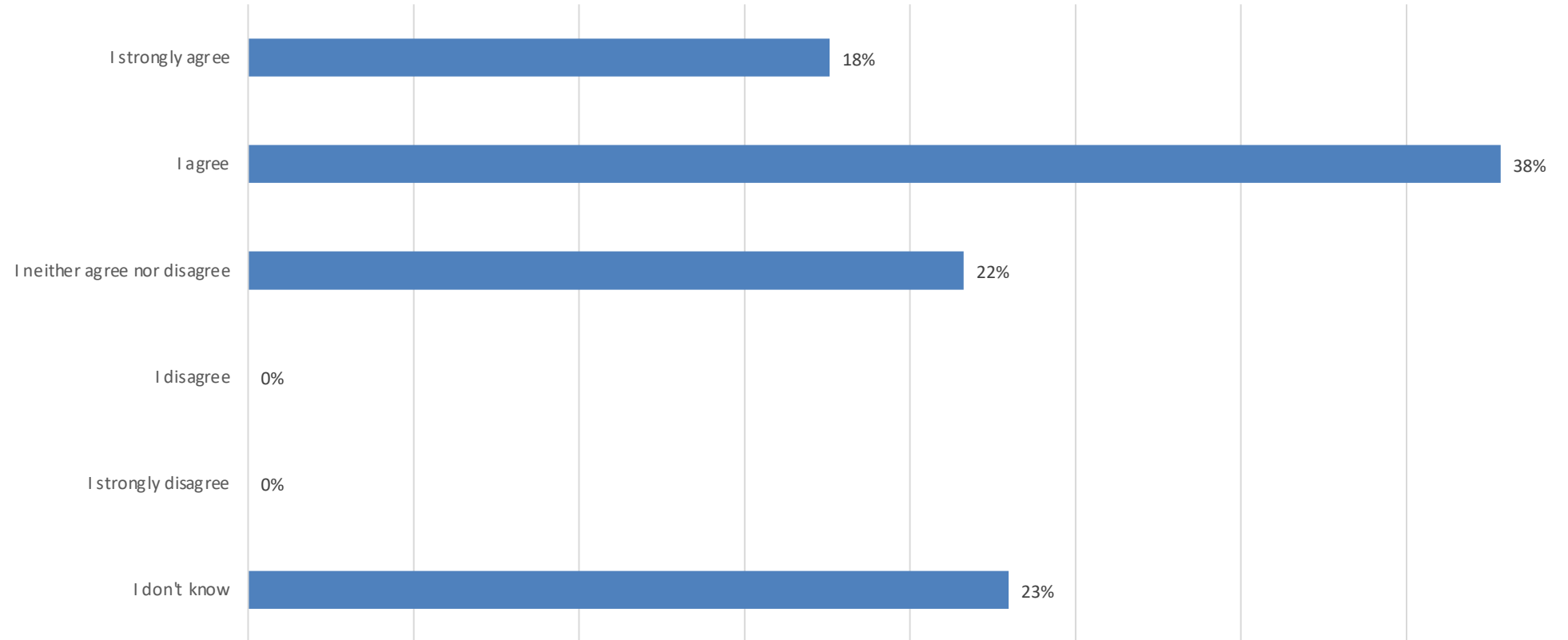
What are your expectations from PREIN



- Industrial cooperation meetings and fairs has grown its importance although research cooperation was still highly valued.
- Access to research infrastructure was also seen more important than in 2020.

Most of the surveyed companies have positive opinion on PREIN Flagship initiative

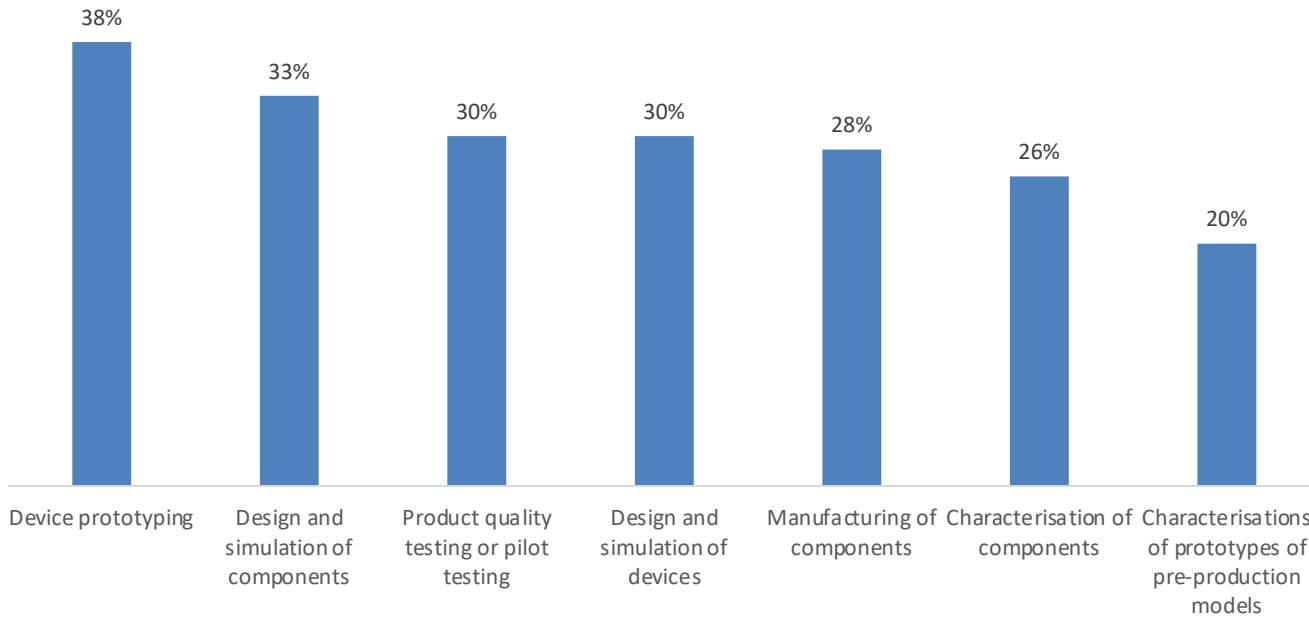
I have a positive opinion of the PREIN Flagship initiative for the Finnish Photonics Ecosystem



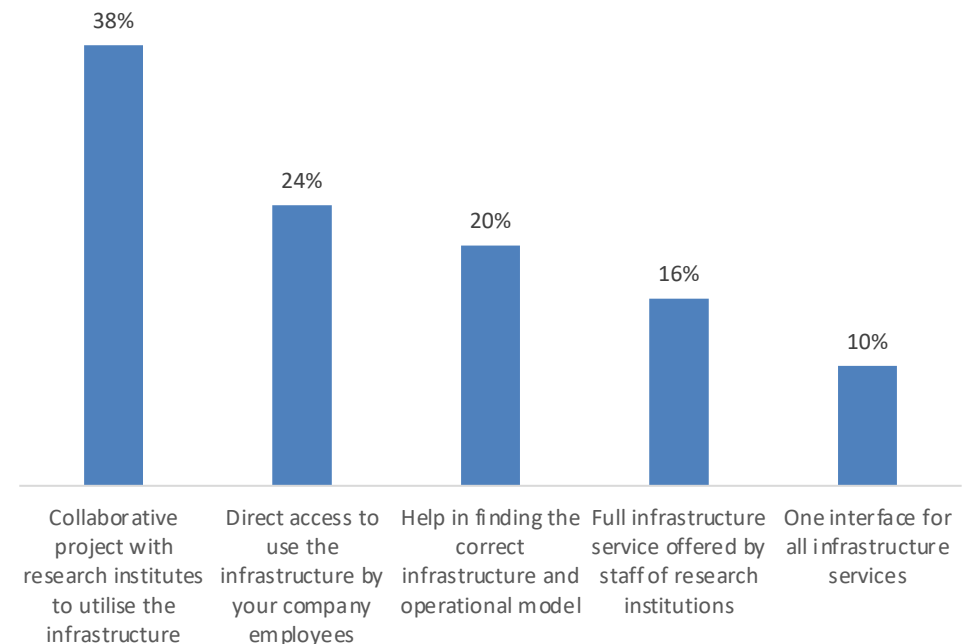
- Increasing number of companies have a neutral opinion about PREIN than in 2020.
- Percentage share of “I don’t know” remained roughly the same.

Majority of photonics companies are hoping for collaborative projects with research institutes to utilize the whole potential of Finnish photonics infrastructure

Universities and research institutions operate remarkable photonics research infrastructure. In what cases your company would potentially like to utilize the infrastructure



What level of service would be the most desirable in your potential utilisation of the research infrastructure of universities and research institutes



- Companies would like to utilize device prototyping more than in 2020.
- In terms of level of service, “one interface for all infrastructure services” was seen less important.

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Summary (1/2)

- **At the industry level, the estimated total annual revenue of photonics business in Finland is over 2 billion euros**
 - Compared with the results from 2020 survey, the industry has grown more than 50%
- **Photonics business directly employs more than 6000 workers in Finland**
- **Finland has at least 300 companies with photonics activities based on survey results**
 - Compared with the results from 2020 survey, the number of active companies has approximately risen by 40 companies
 - Most of the Finnish photonics companies are small with less than 5M€ annual turnover
 - The target markets of the Finnish photonics companies are evenly distributed. The Industrial manufacturing has highest growth from 2020 (see Figure 1)

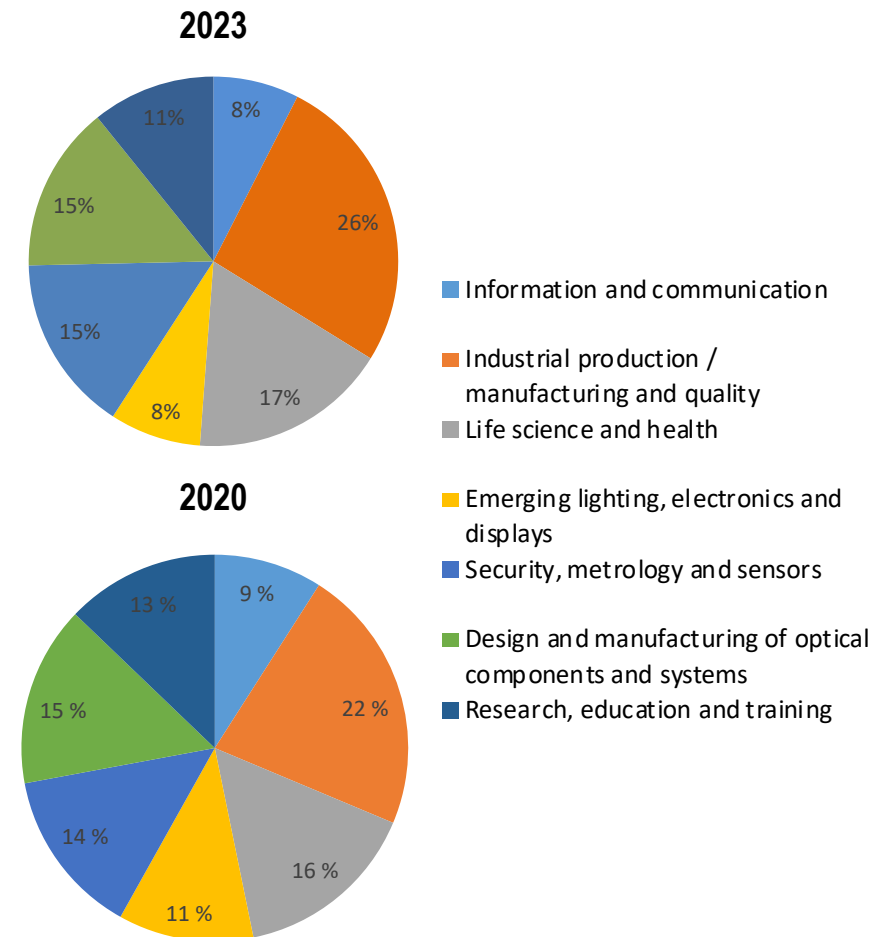


Figure 1: Type of market you are addressing with your products and/or services that apply photonics

Summary (2/2)

- **Finnish photonics companies are export-intensive and supply increasingly also to domestic markets**
 - 36 % of the companies reported that their revenue is generated almost entirely from exports
 - However, increasing number of companies supply also domestic markets
 - The key export markets for Finnish photonics companies are Europe, USA and Asia, and Latin America is an emerging market
- **Finnish photonics companies expect the industry to grow at a fast pace**
 - The companies reported high growth expectations for the following 3 years
 - 31% annual growth rate for turnover (38% in 2020)
 - 26% annual growth rate for market size (29% in 2020)
 - 18% annual growth rate for the number of employees (31% in 2020)
- **Finnish photonics companies see assistance in finding both domestic and foreign partners as the most important facilitators of further growth**
 - Assistance in market and technology analysis as well as recruiting were still seen important