



**BUSINESS
FINLAND**

Photonics industry in Finland 2020

Survey results

Boost Brothers Oy

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Photonics industry in Finland 2020 -survey received a high number of responses

- **The survey was aimed at Finnish companies operating in the field of photonics**
 - The survey received 167 responses and the response rate was 30%
- **The survey was conducted as a follow-up survey for the *Photonics industry in Finland 2016 -survey***
 - As such, the survey follows a similar structure to that of the 2016 survey. What is more, this allows direct comparisons between the results to gain a deeper understanding of the photonics market development
- **The survey was conducted concurrently with the 2020 coronavirus crisis**
 - Thus, the repercussions of the crisis may influence the survey results, especially the growth expectations for the following years

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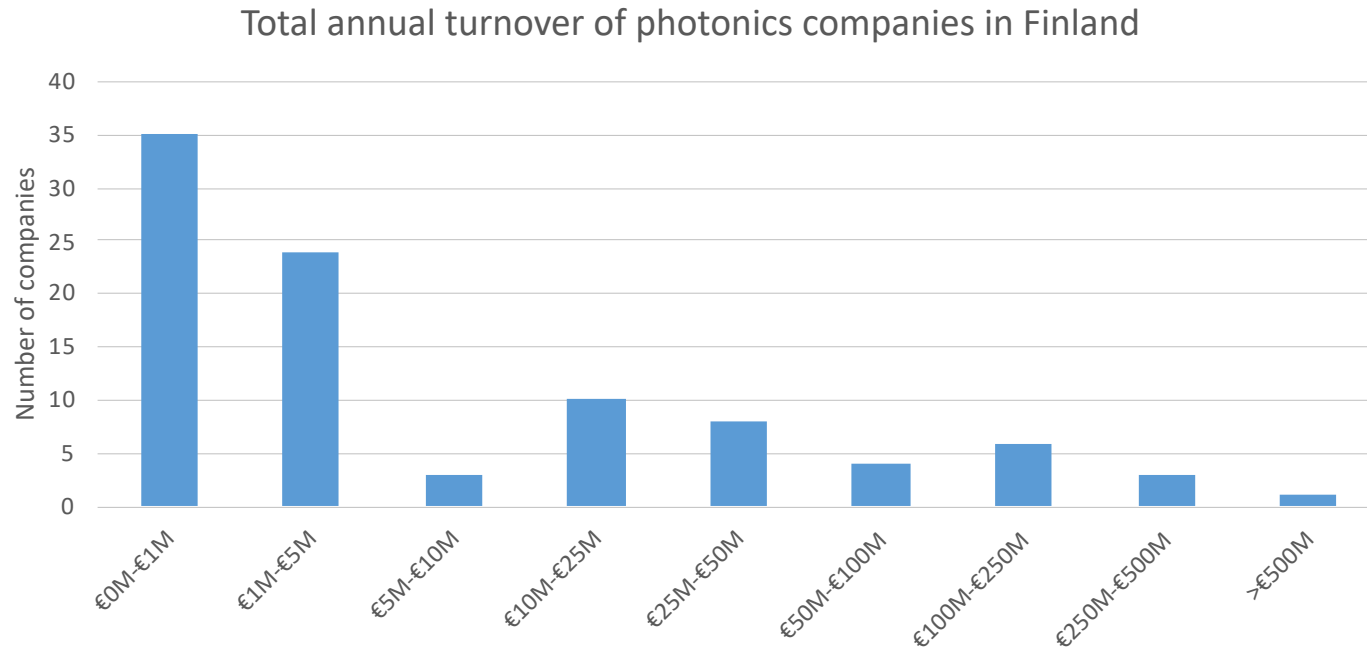
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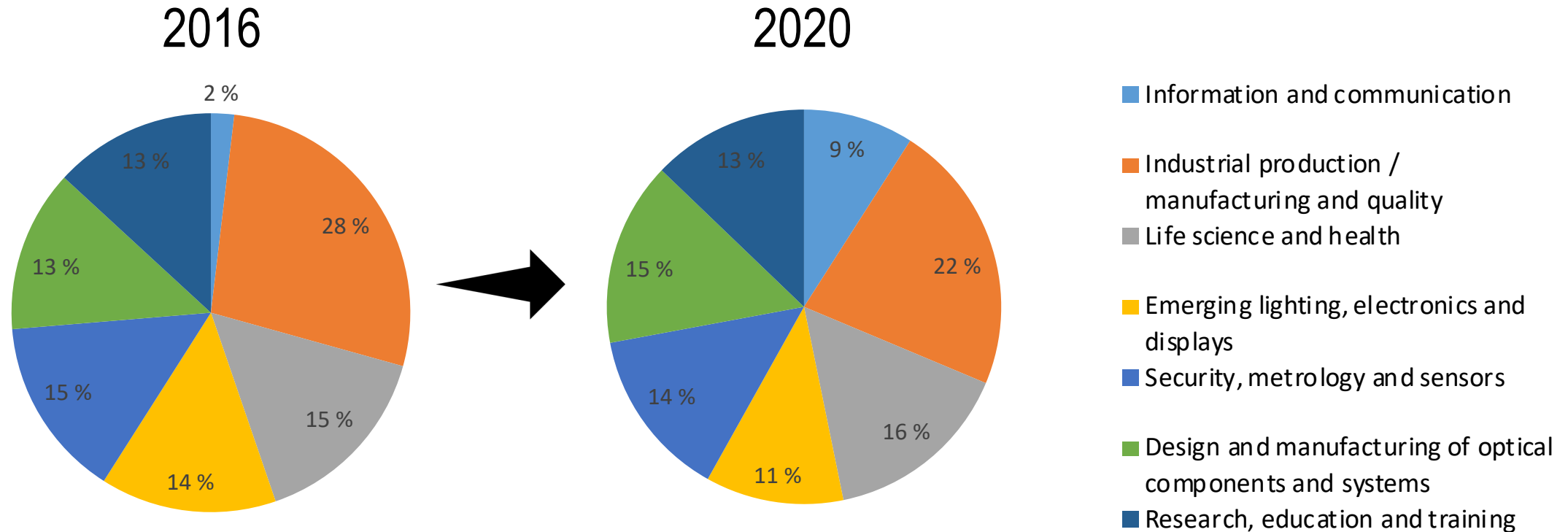
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Total annual revenue of photonics business in Finland is over 1 200 million euros, and the photonics business directly employs more than 4 200 workers in Finland

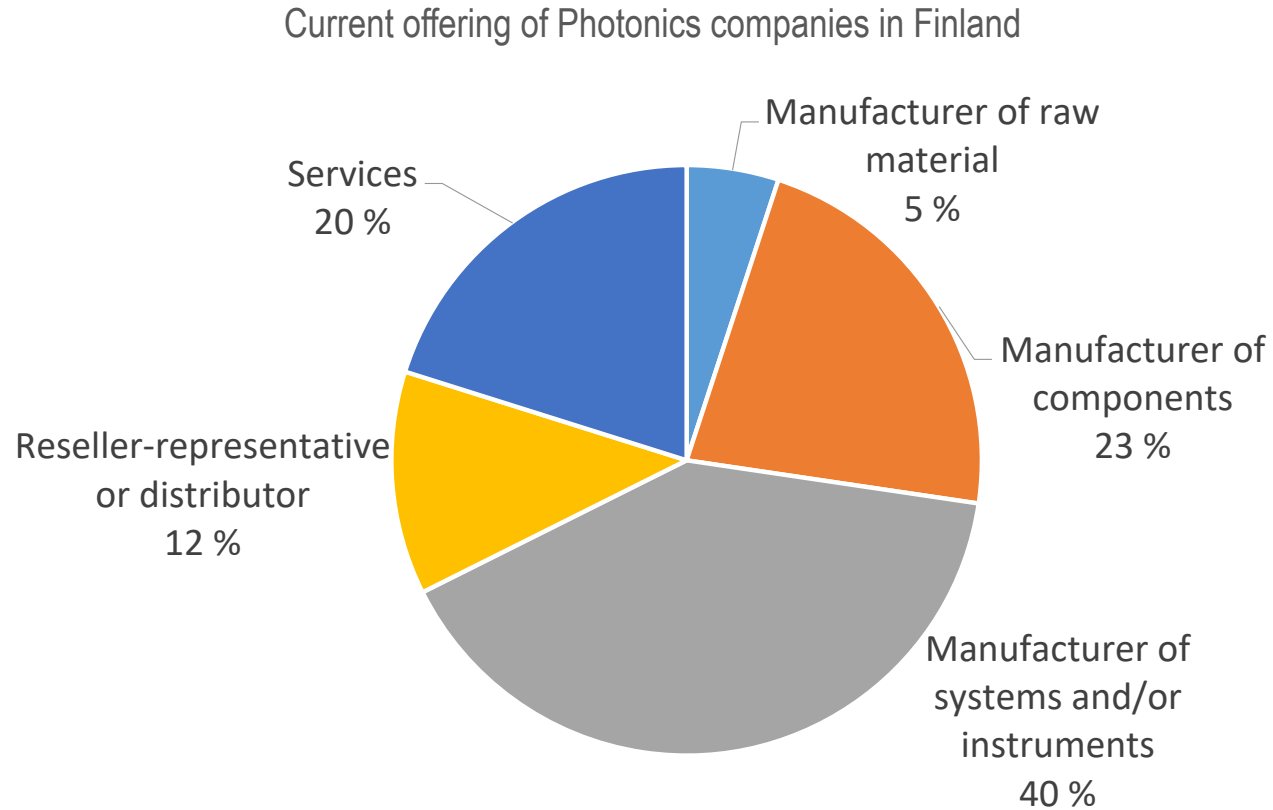


- **Finland has at least 260 companies with photonics activities based on survey results**
 - Compared with the results from 2016 survey, the number of active companies has increased by approximately 60 companies
 - Majority of photonics companies (62%) are small with less than 5M€ annual turnover
 - Median Finnish photonics company has 10-15 employees
- **The estimated total revenue of photonics business in Finland is 1 200 – 2 300 meur**
 - Compared to the results from the 2016 survey, the industry has grown more than 40%
 - The annual growth rate of the industry has been approximately 12%
- **4 200 - 6 000 employees of Finnish photonics companies are directly working with photonics. In total, the photonics companies employ 28 000 – 35 000 workers**

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

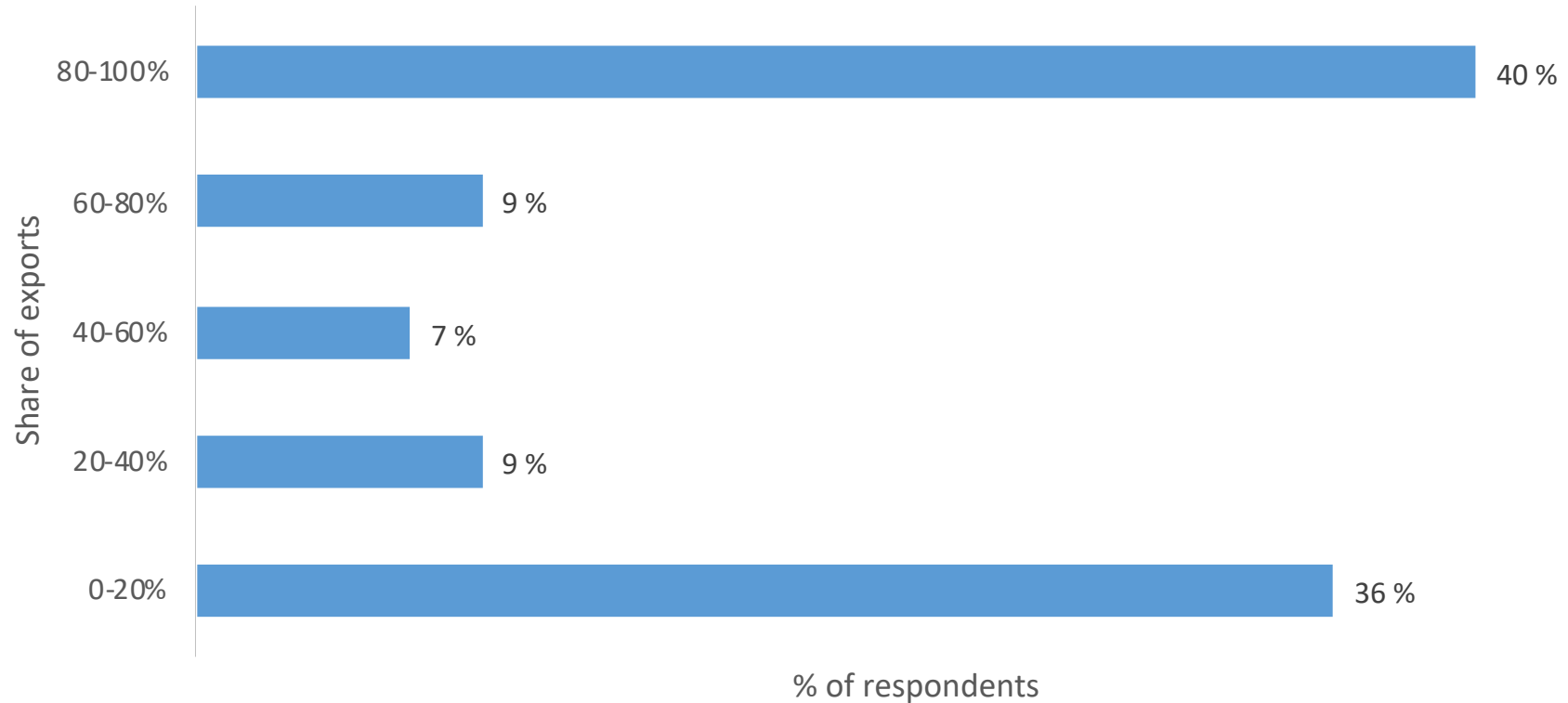


Most photonics companies in Finland are manufacturing systems, instruments and components



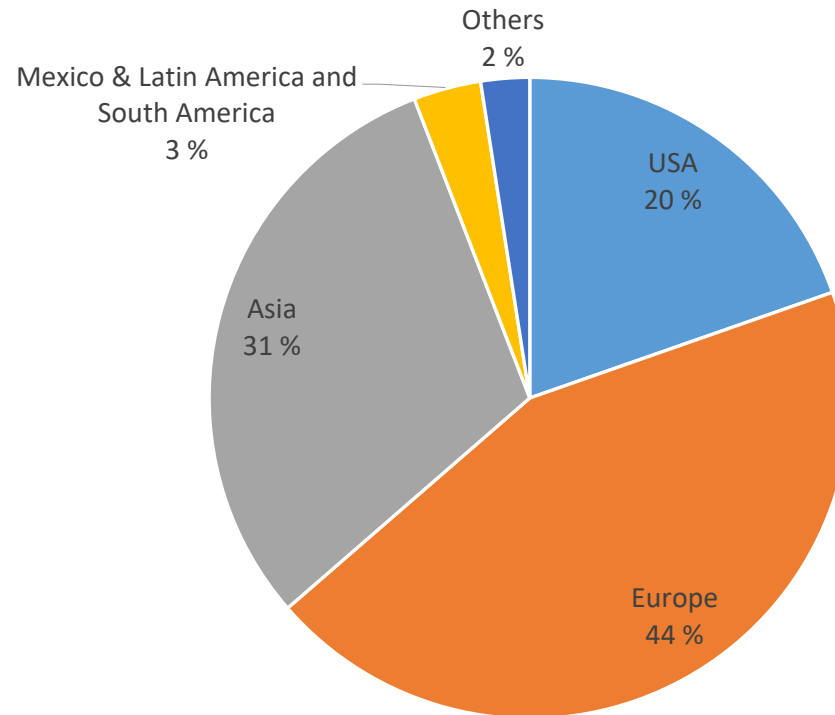
Finnish photonics companies are extremely export-intensive i.e., over 40% of the companies reported that their revenue is generated almost entirely from exports

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



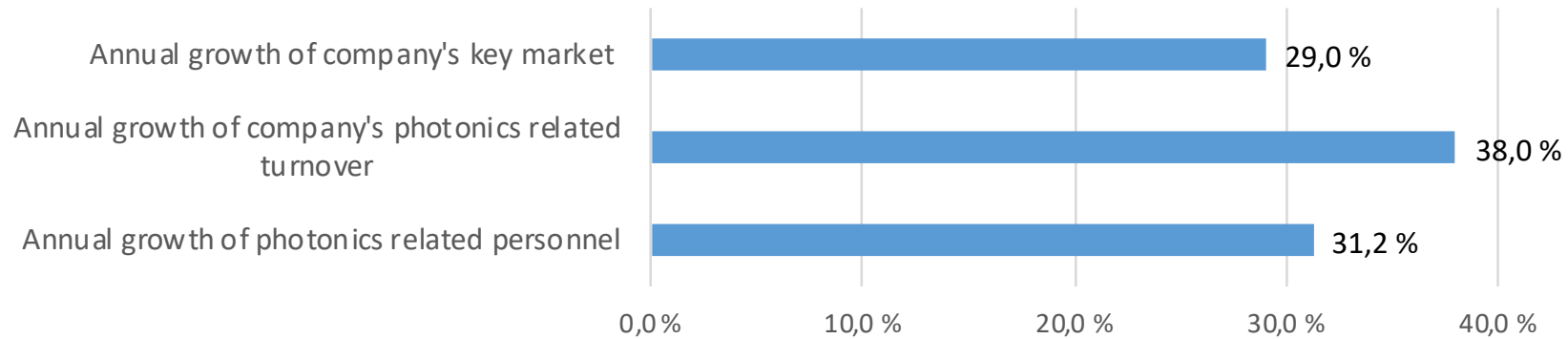
The key export markets for Finnish photonics companies are Europe, Asia and USA

Key export markets for photonics related products and services



Despite the ongoing coronavirus crisis, the Finnish photonics companies reported high growth expectations for the next 3 years

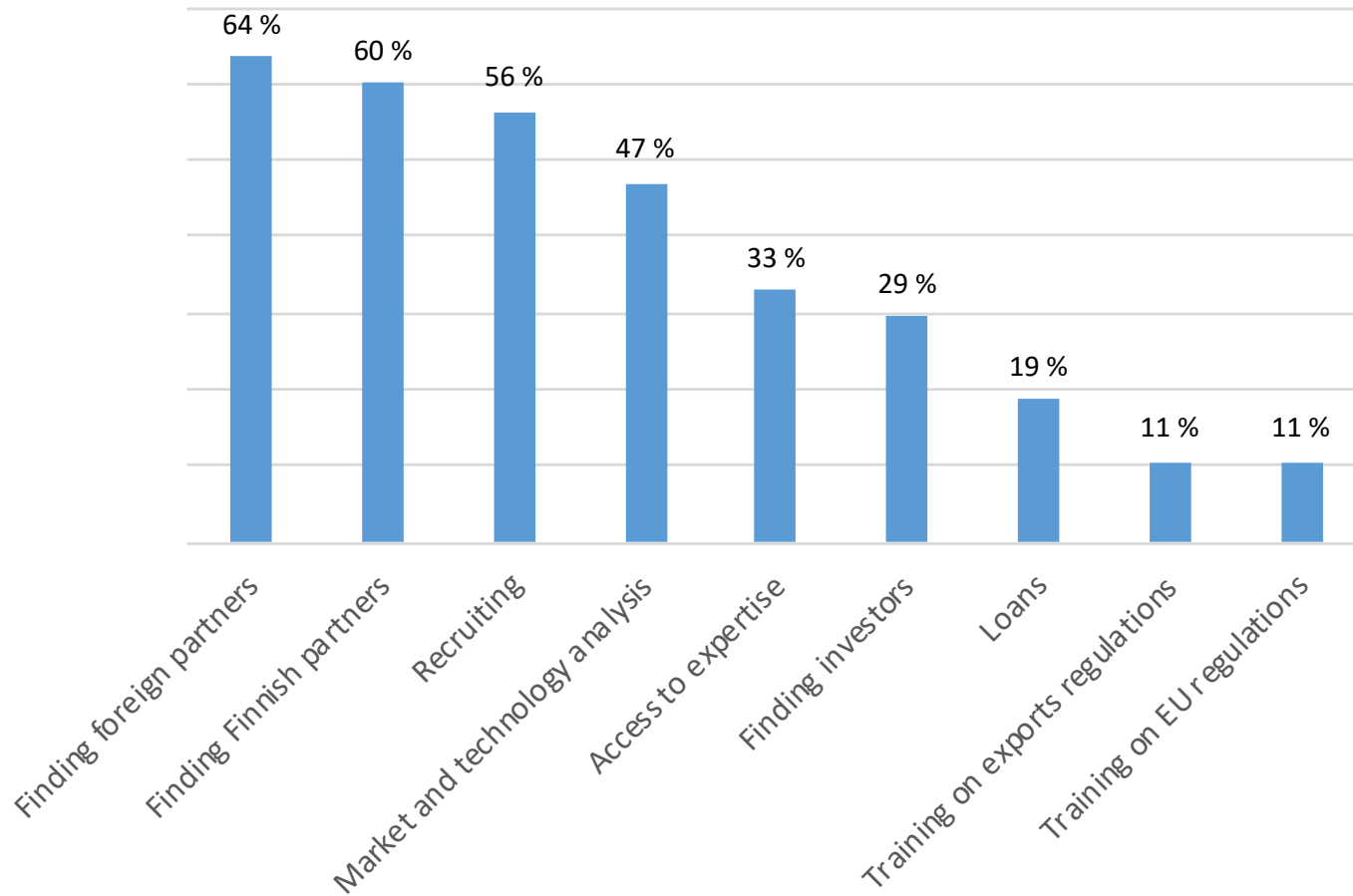
Estimated annual growth rates (%) for the next 3 years for photonics markets, companies and personnel (on average)



- Companies expect their **key target markets to grow 29,0% annually** for the next 3 years (**20,9% in 2016**)
- Companies expect their **photonics related turnover to grow 38,0% annually** for the next 3 years (**27,1% in 2016**)
- Companies expect their **number of employees to grow 31,2% annually** for the next 3 years (**18,3% in 2016**)

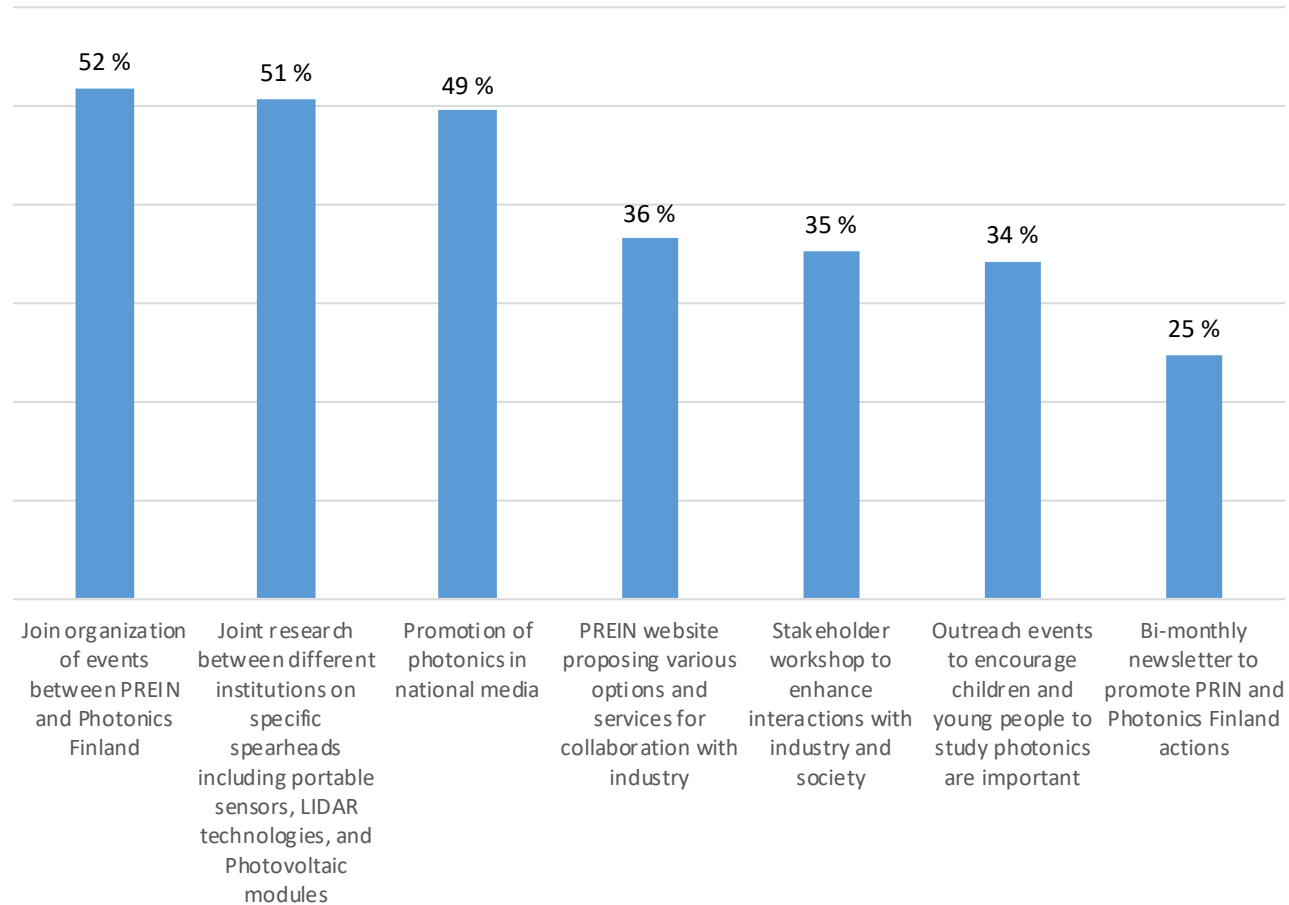
Finding domestic and foreign partners, recruiting and market & technology analysis are the most important facilitators of growth of photonics companies

What kind of assistance would facilitate the growth of your company



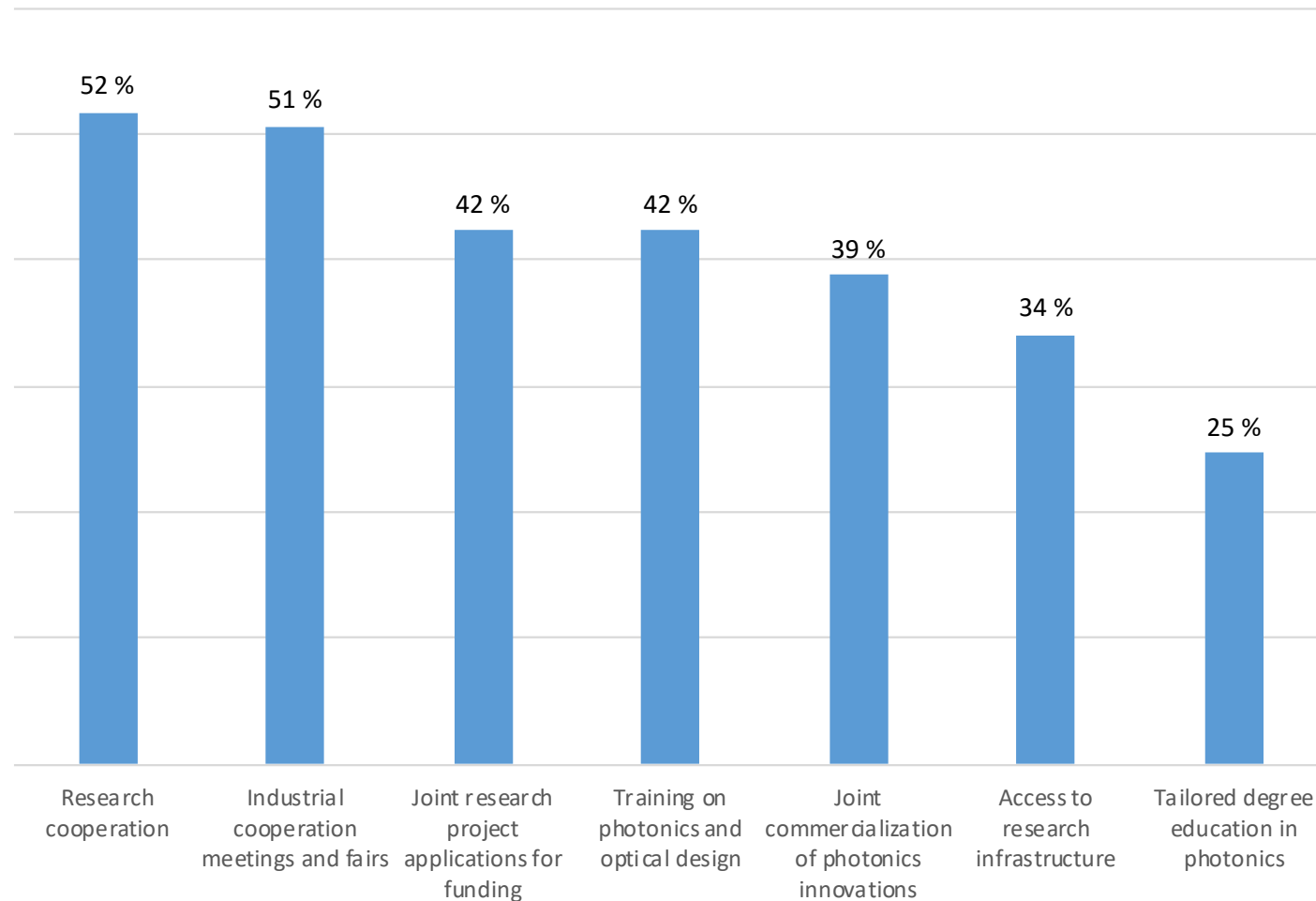
Finnish photonics companies see joint event organization, joint research and media promotion as the most important functions of PREIN (The Flagship on Photonics Research and Innovation)

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



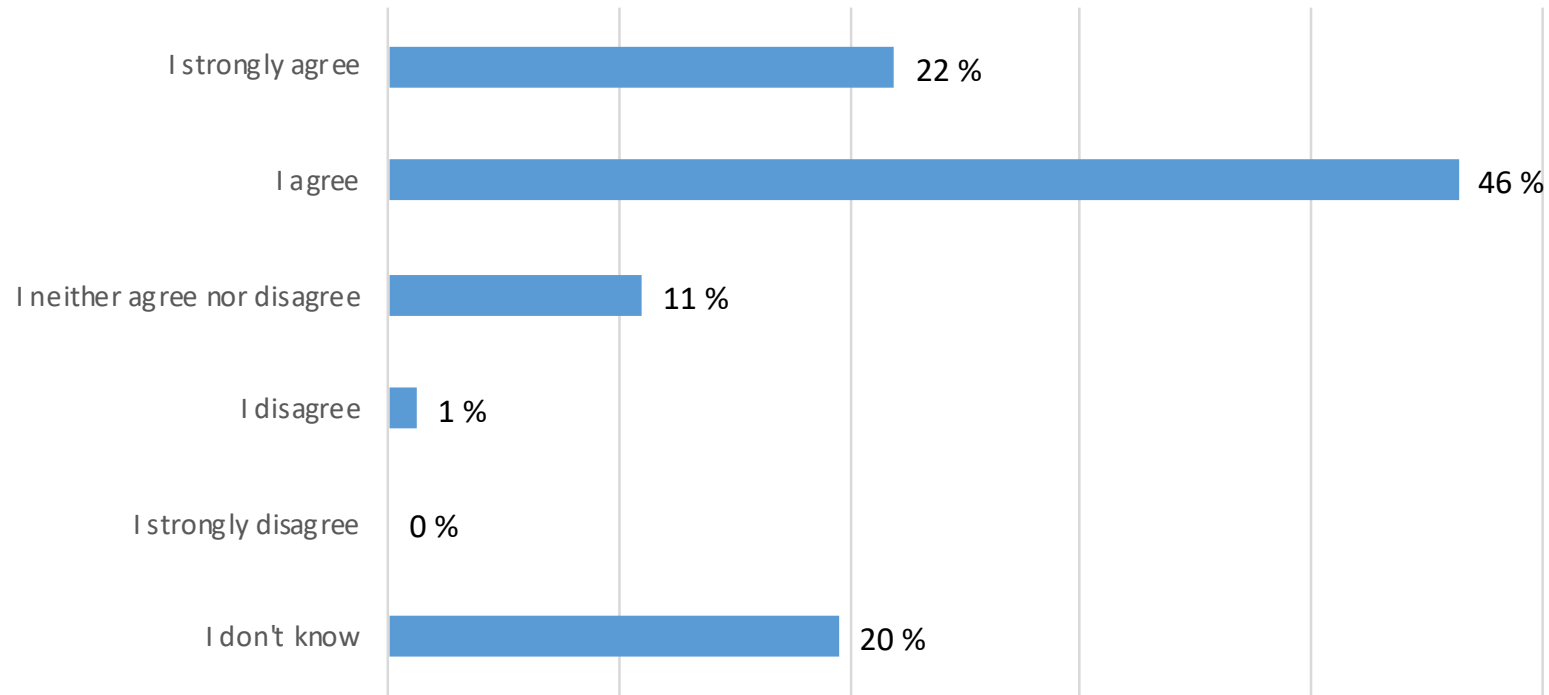
Finnish photonics companies expect PREIN to provide a platform for cooperation in research as well as in industrial meetings and fairs

What are your expectations from PREIN



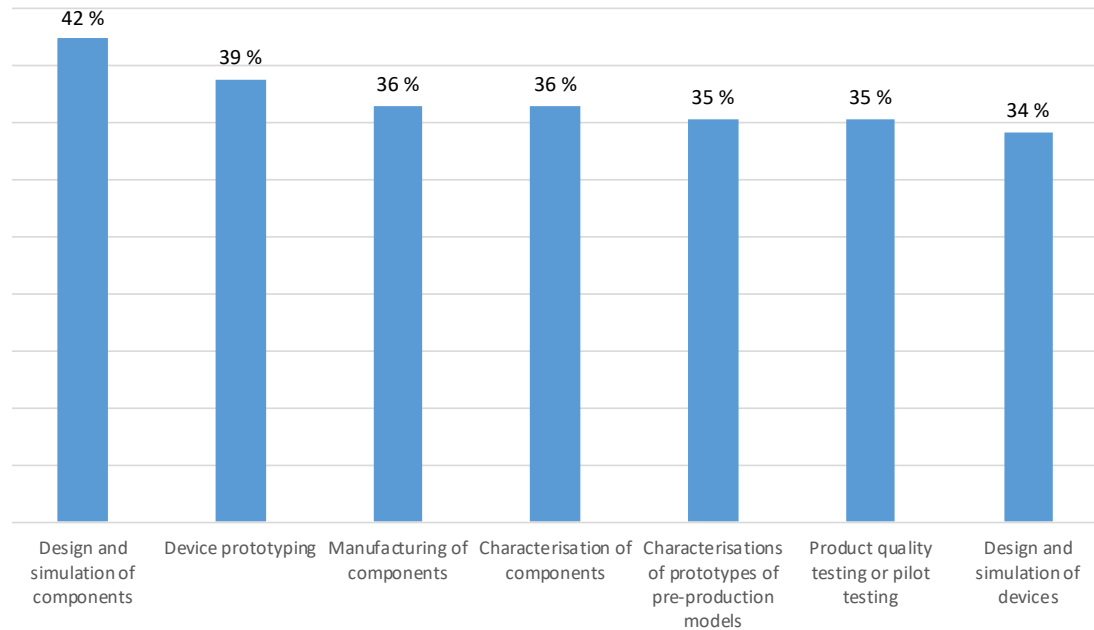
Most of the surveyed companies have positive opinion on PREIN Flagship initiative

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

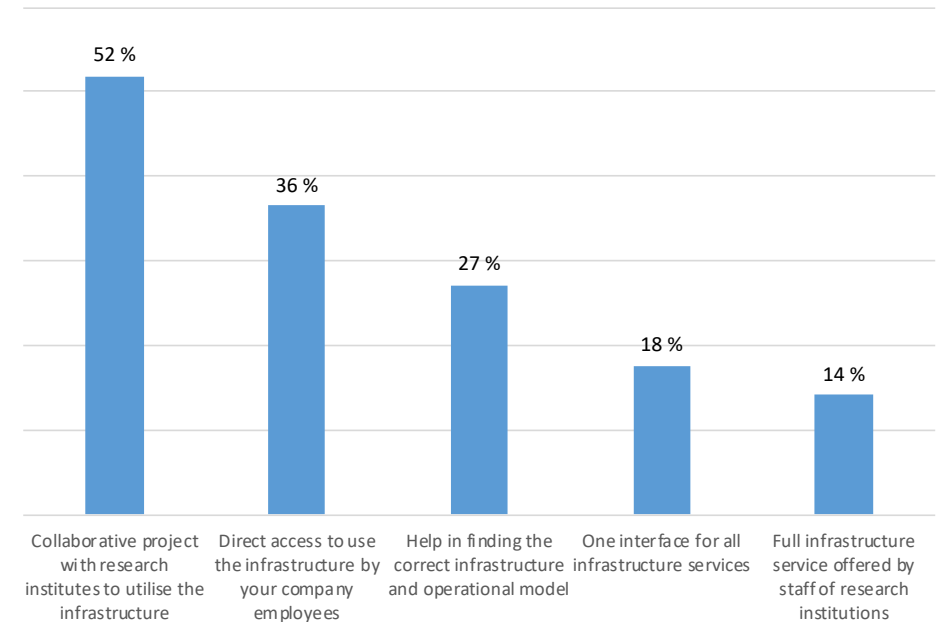


Majority of photonics companies are hoping for collaborative projects with research institutes to utilize the whole potential of Finnish photonics infrastructure

Universities and research institutions operate remarkable Photonics research infrastructure in Finland. 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



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Summary (1/2)

- **At the industry level, the estimated total annual revenue of photonics business in Finland is over 1200 meur**
 - Compared with the results from 2016 survey, the industry has grown more than 40%
- **Photonics business directly employs more than 4200 workers in Finland**
- **Finland has at least 260 companies with photonics activities based on survey results**
 - Compared with the results from 2016 survey, the number of active companies has approximately risen by 60 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, with the Information and communication market experiencing highest growth from 2016 (see Figure 1)

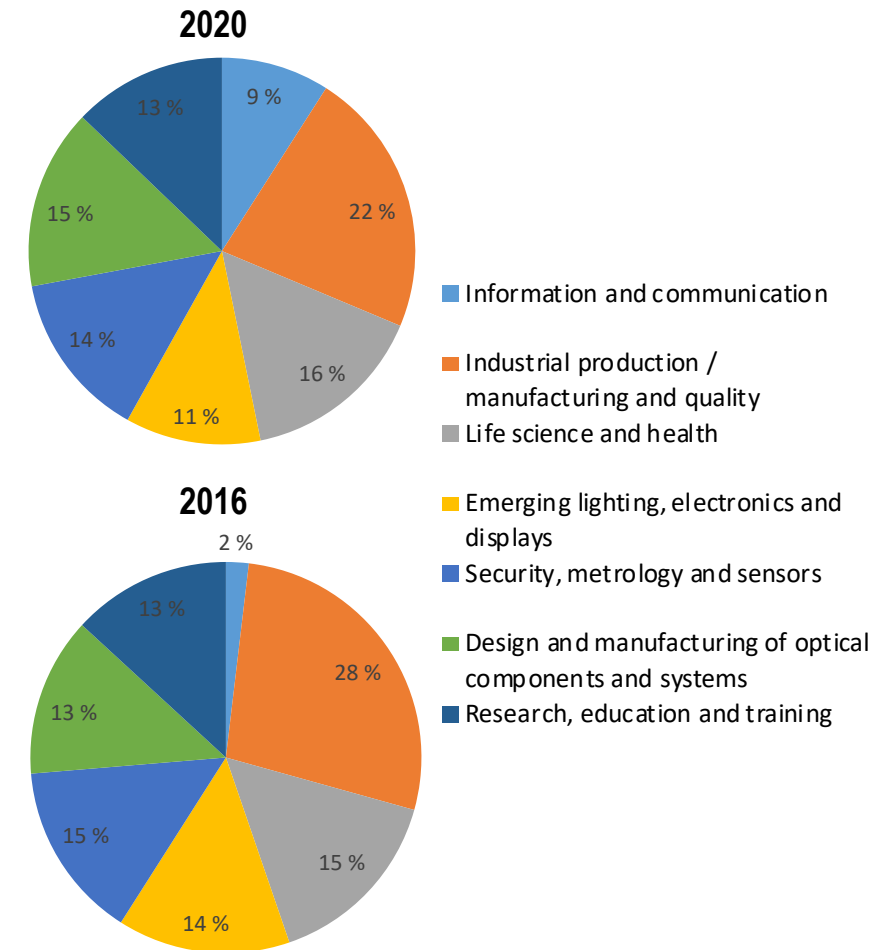


Figure 1: Type of market you are addressing with your products and/or services that apply photonics

Summary (2/2)

- **Finnish photonics companies are extremely export-intensive**
 - Over 40% of the companies reported that their revenue is generated almost entirely from exports
 - The key export markets for Finnish photonics companies are Europe, Asia and USA
- **Finnish photonics companies expect the industry to grow at a fast pace**
 - The companies reported high growth expectations for the following 3 years
 - 38% annual growth rate for turnover (27% in 2016)
 - 29% annual growth rate for market size (21% in 2016)
 - 31% annual growth rate for the number of employees (28% in 2016)
- **Finnish photonics companies see assistance in finding both domestic and foreign partners as the most important facilitators of further growth**
 - Additionally, companies call for assistance in market and technology analysis as well as recruiting

Recommendations for photonics industry roadmap



- **Recommendation 1: targeted support services to companies.** To ensure that the growth expectations for the future are reached, it will be crucial to provide companies with sufficient support that addresses their main needs:
 1. Provide access to foreign and domestic partners
 2. Support company recruiting and access to expertise
 3. Coordinate and address company needs for market and technology analysis



- **Recommendation 2: facilitate and launch joint spearhead research projects.** Further industrial cooperation meetings (e.g. between PREIN and Photonics Finland) and joint research projects on specific spearheads (e.g. portable sensors, LIDAR technologies, photovoltaic modules) play a significant role for company business development



- **Recommendation 3: cultivate company-university collaboration.** Improved access for companies to the photonics research infrastructure through collaborative projects with universities and research organizations could hold one of the keys for unlocking the whole potential of the Finnish photonics industry