



CTO Survey 2013

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Introduction



CTO Survey covers Finnish CTOs' views on the current innovation environment and its future outlook

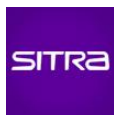
Spinverse annually conducts the **CTO Survey**, targeted to Finnish Chief Technology Officers (CTOs). The survey deals with themes that arise in the semi-annual CTO Forum events.

The CTO Survey 2013 was done in partnership with **Sitra**, **Confederation of Finnish Industries (EK)** and **Technology Academy Finland (TAF)**

The survey received **120 responses** from various industries: online responses were complemented by interviewing representatives from large companies.

Almost half (43 %) of the responses were from **big corporations**.

The results of the survey are **compared to the previous years**.



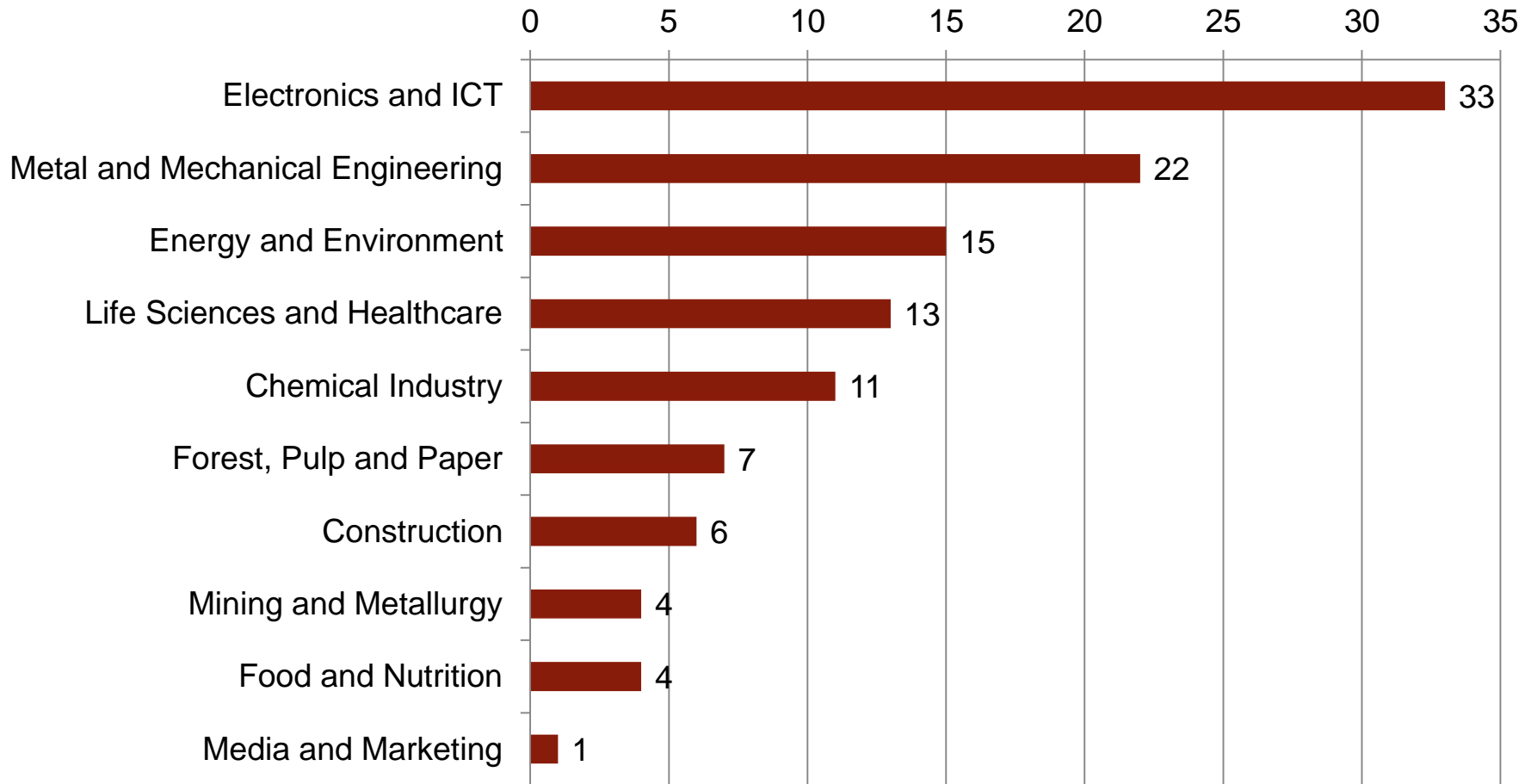
Nearly half of the TOP 100 R&D investors in Finland answered the survey, added by other significant Finnish companies

Examples

- Wärtsilä
- Metso
- Orion
- Kone
- Bayer Schering Pharma
- UPM
- Kemira
- Neste Oil
- Tieto
- Fortum
- Konecranes
- EADS Secure Networks
- Vaisala
- Outokumpu
- Tikkurila
- Ahlstrom
- Sartorius Biohit Liquid Handling
- Logica
- Gasum
- STX Finland
- Beneq
- Okmetic
- NSN
- Ponsse
- Patria
- Santen

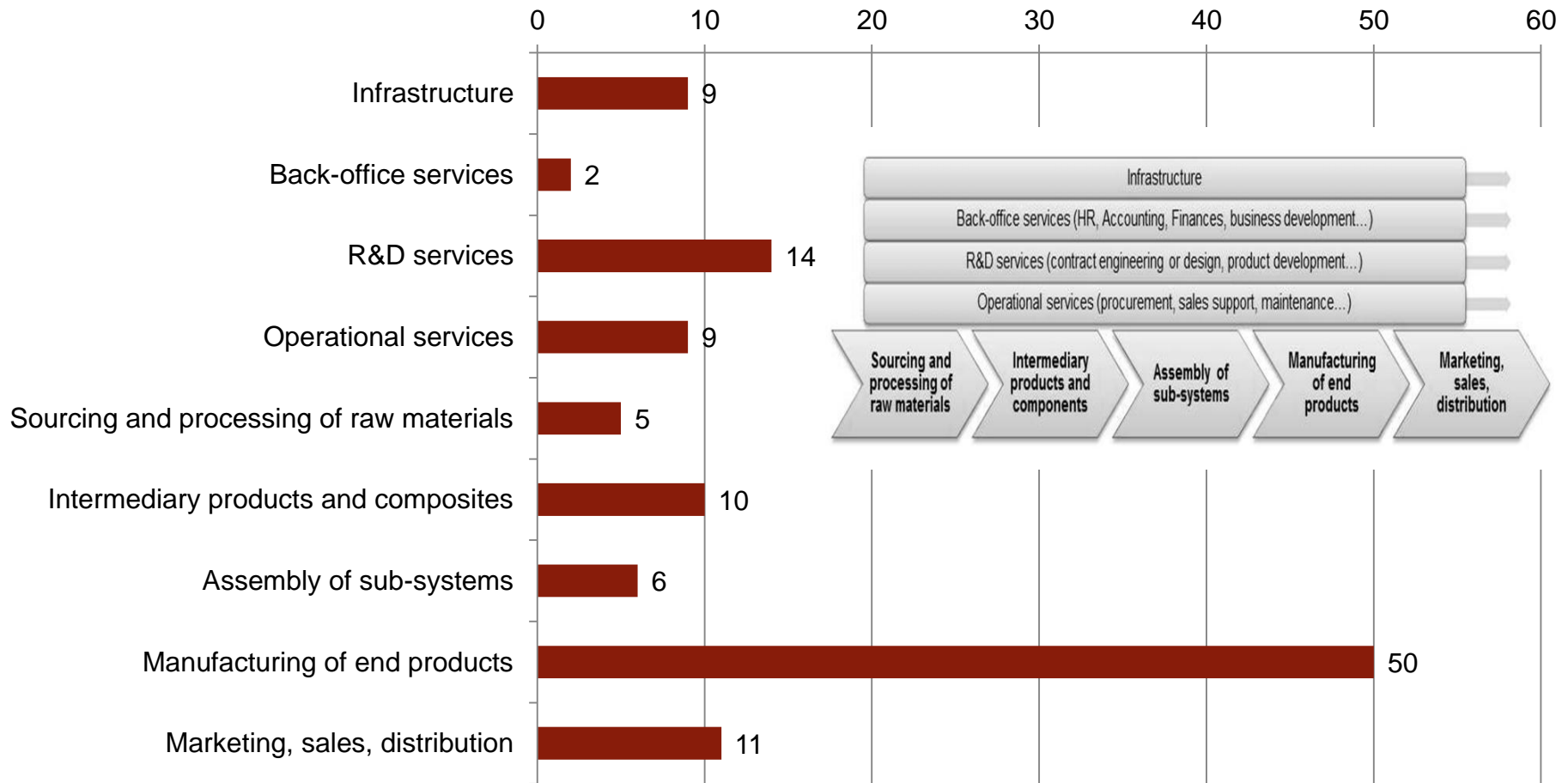
Over 95 % of Finnish R&D investments are done by the top 100 investors.
We cover this population well.

The main part of the respondents are from technology-intensive industries

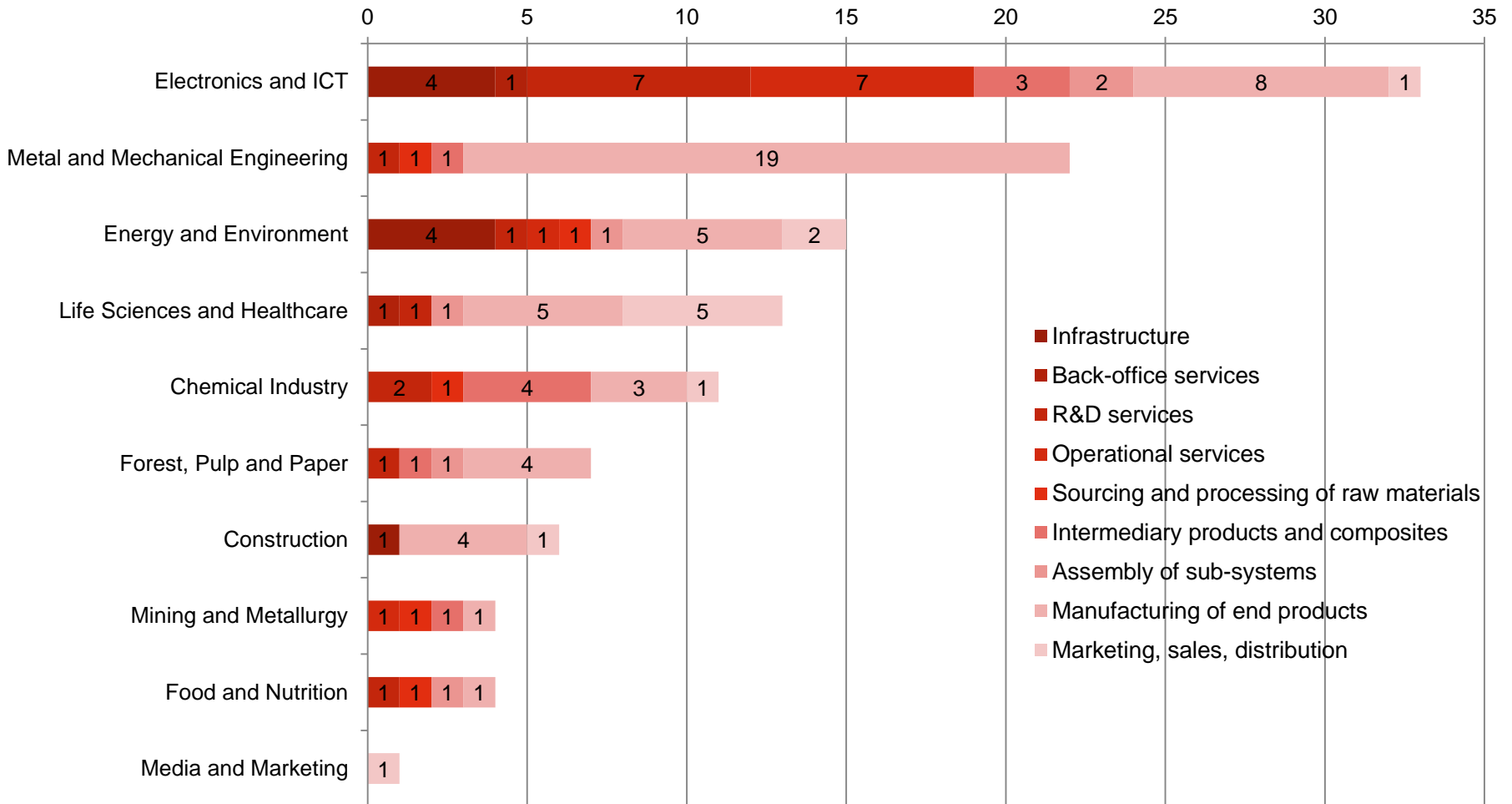


The top three industries are similar to the surveys of 2012 and especially 2011. The next two have bigger proportions now than in 2012, and there were no responses from construction industry in 2012.

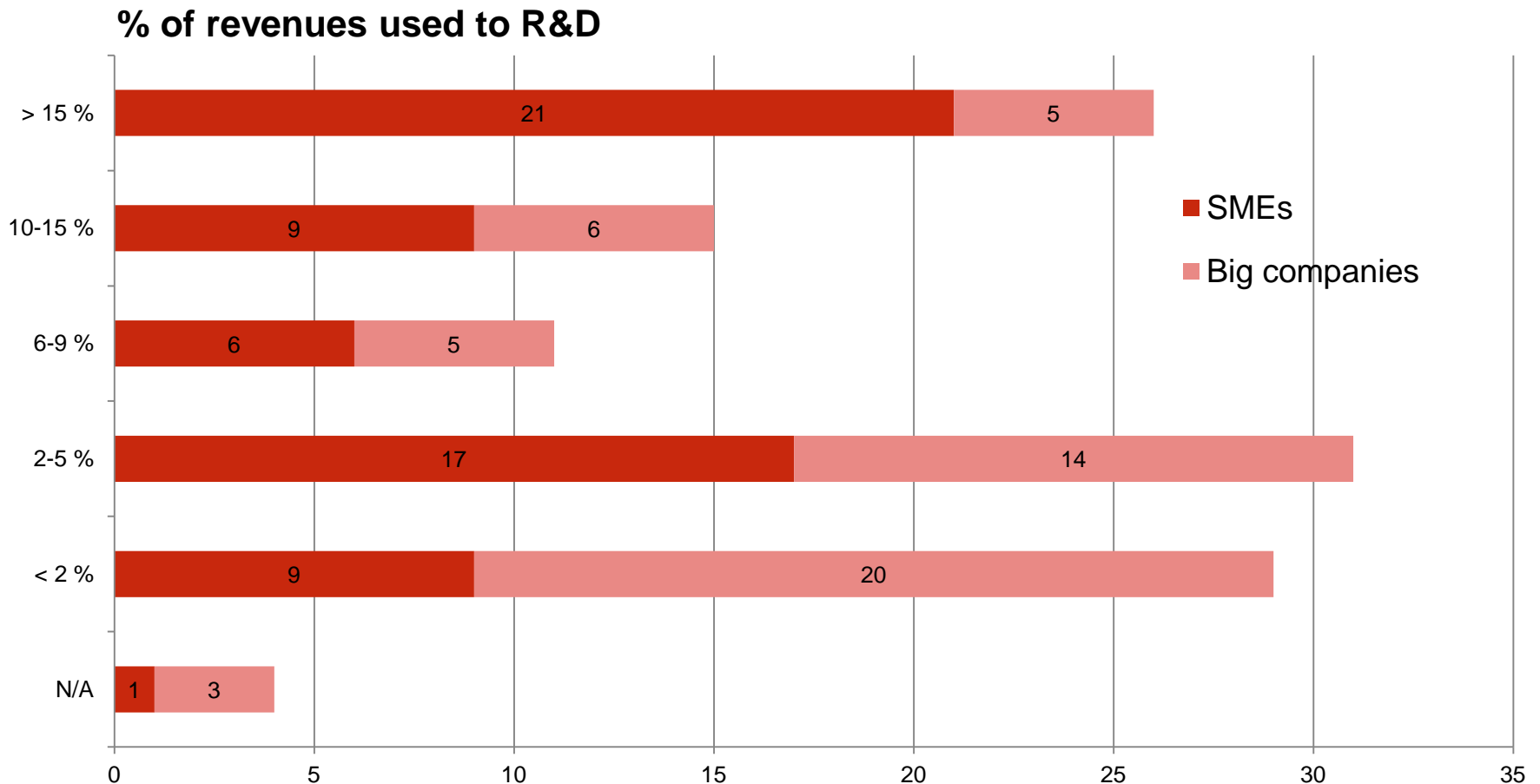
Nearly half of the respondents place their companies to their value chain mainly as end product manufacturers



The responses from the electronics and ICT industry cover almost the whole value chain. On the other hand, metal and mechanical engineering mainly belong to the group of end product manufacturers.



R&D budgets vary between companies. In general, SMEs use a bigger percentage of their revenues to R&D



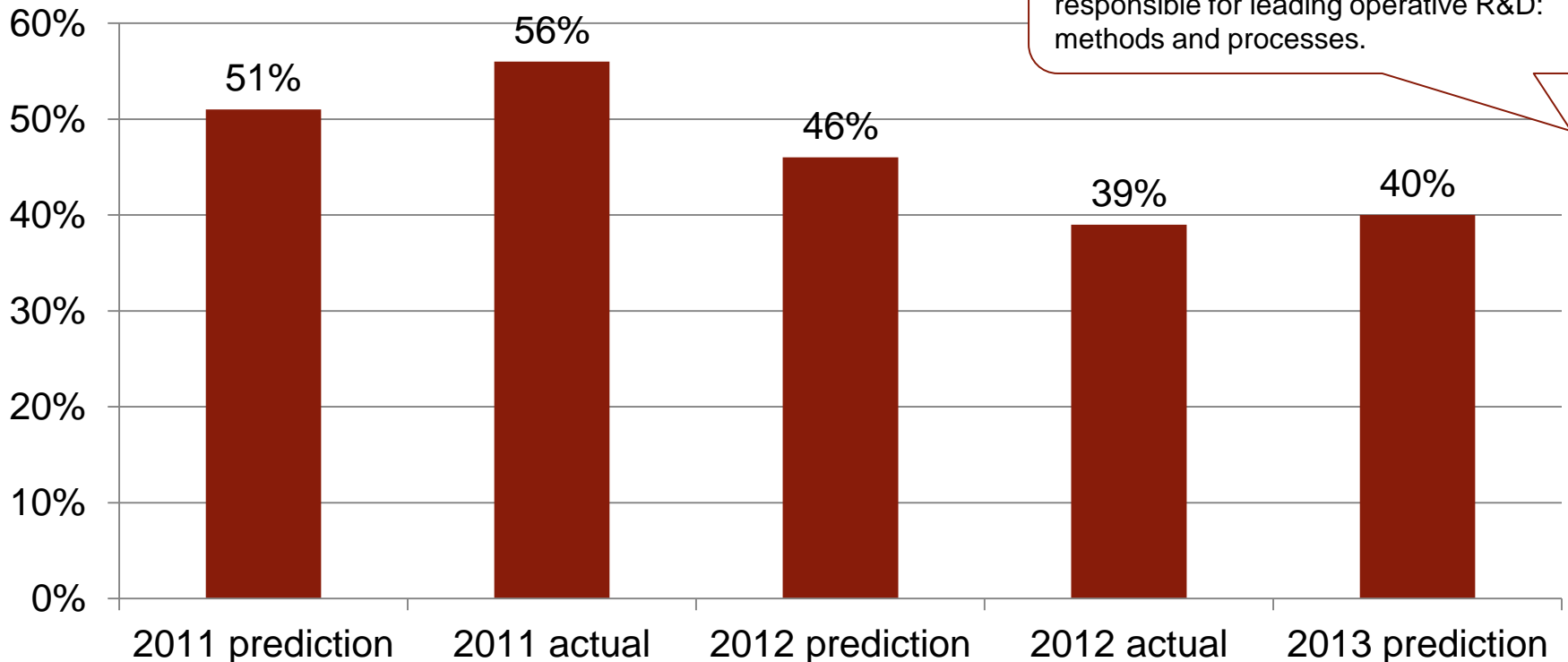
Almost a half (48%) of SMEs but only 21 % of big companies use more than 10% of their revenues to R&D.

CTO Outlook on 2013



Almost half of the CTOs plan increases to the R&D budget for 2013 – however, the CTOs are less optimistic than in the previous years

CTOs who increase R&D investments

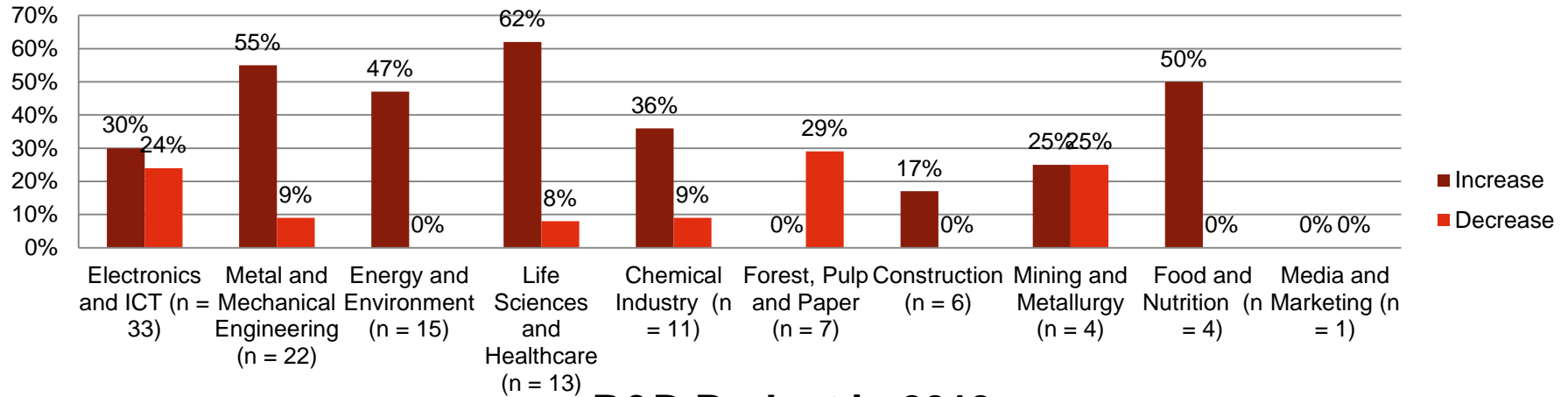


Diminishing resources have been a challenge during the years past. The CTO becomes responsible for leading operative R&D: methods and processes.

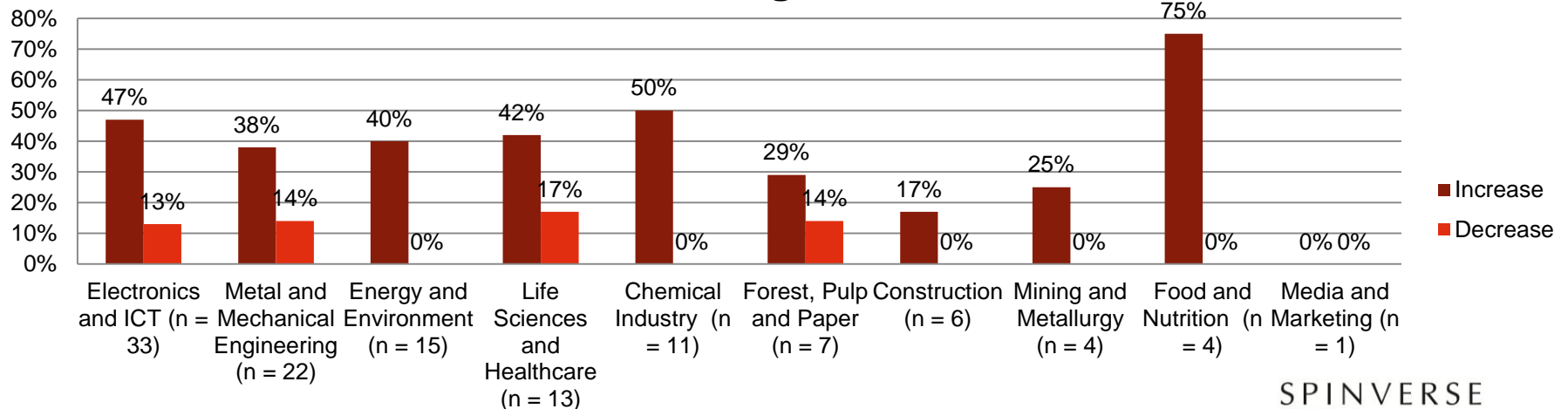
Only about 13% had decreases in 2012 and 9% had them in sight for 2013.

Especially metal, life sciences and food sectors increased their R&D investments for 2012, whereas the forest industry decreased those.

R&D Budget in 2012

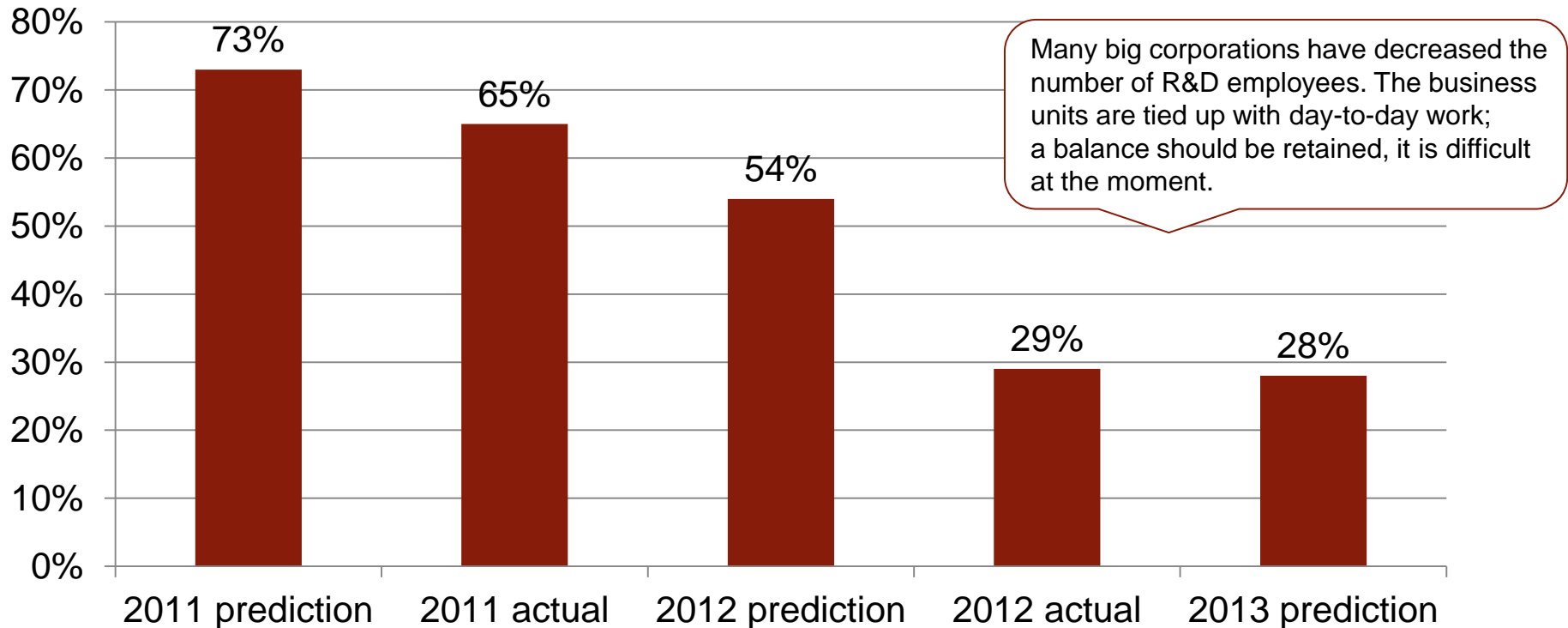


R&D Budget in 2013



Even though a third of the companies increases recruiting in 2013, this number has clearly declined from the previous years

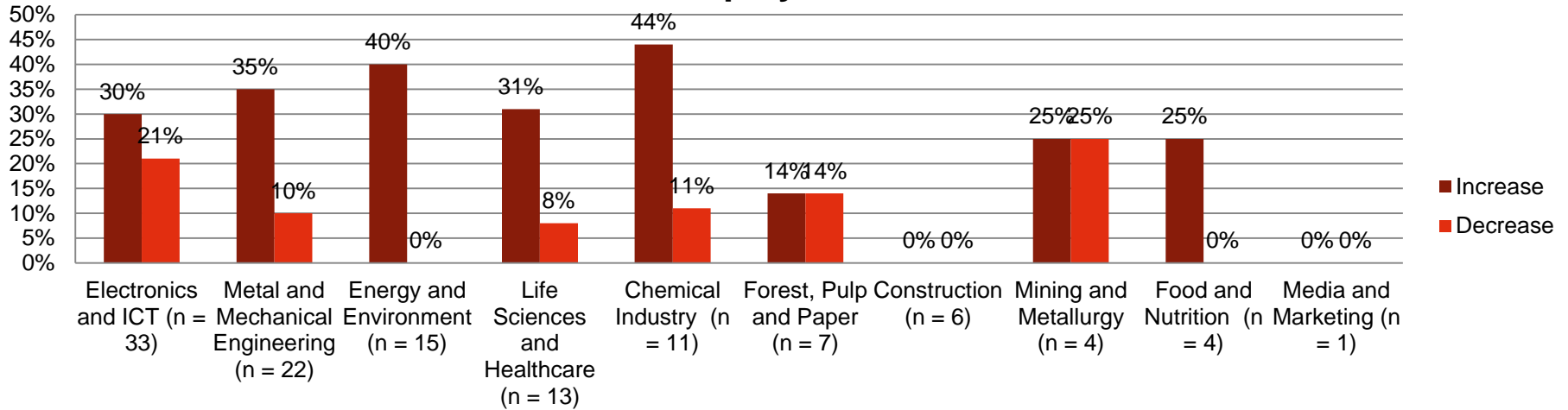
CTOs who increase R&D recruiting



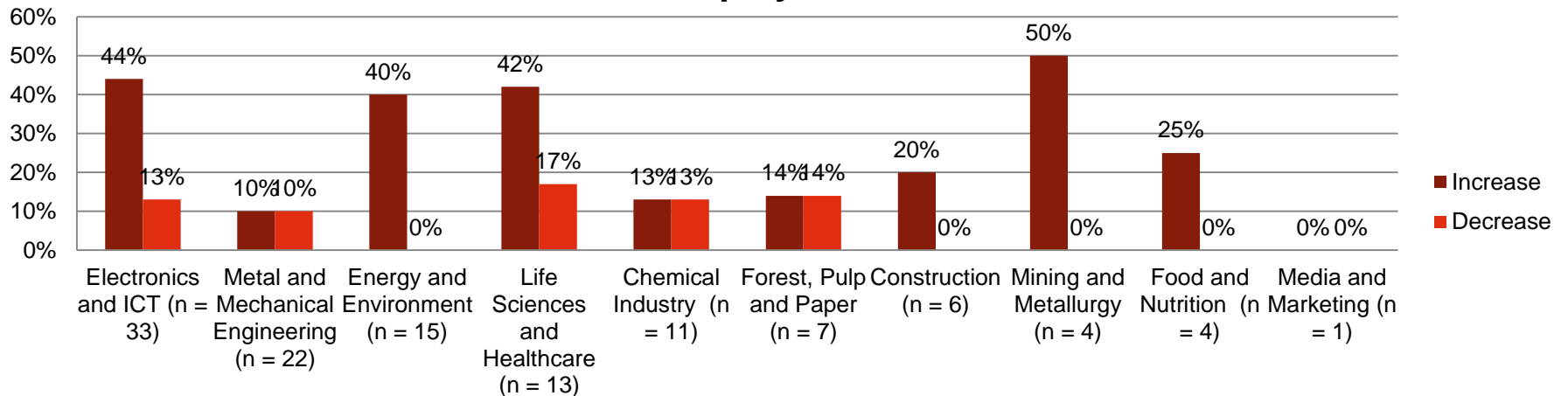
However, only about 10 % foresee decreases for both 2012 and 2013.

The biggest drops in recruiting from 2012 to 2013 happen within the Metal and Mechanical engineering, as well as Chemical industries.

R&D Employees in 2012

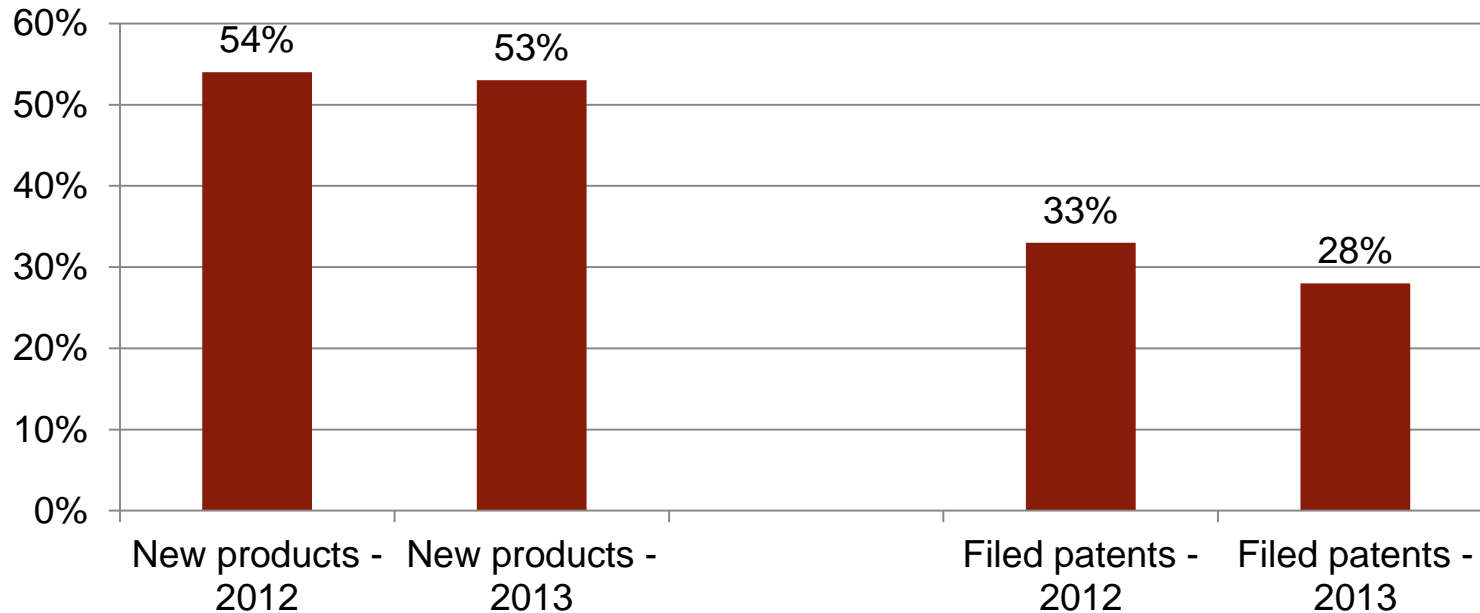


R&D Employees in 2013



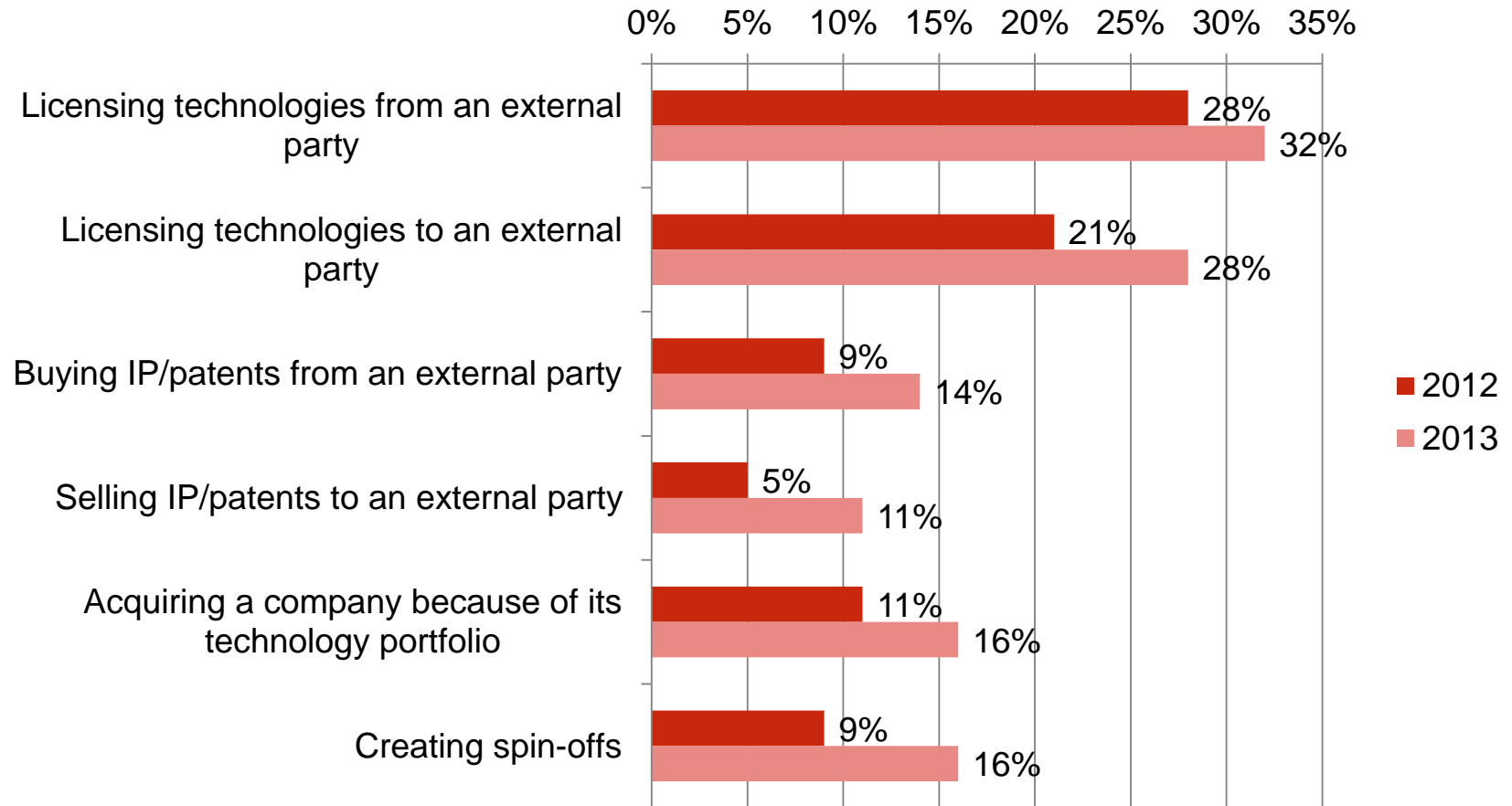
In 2013, recruiting clearly increases in the Electronics and ICT, Construction, and Mining and Metallurgy industries.

Over a half of the companies introduce an increasing number of products or services to the markets each year



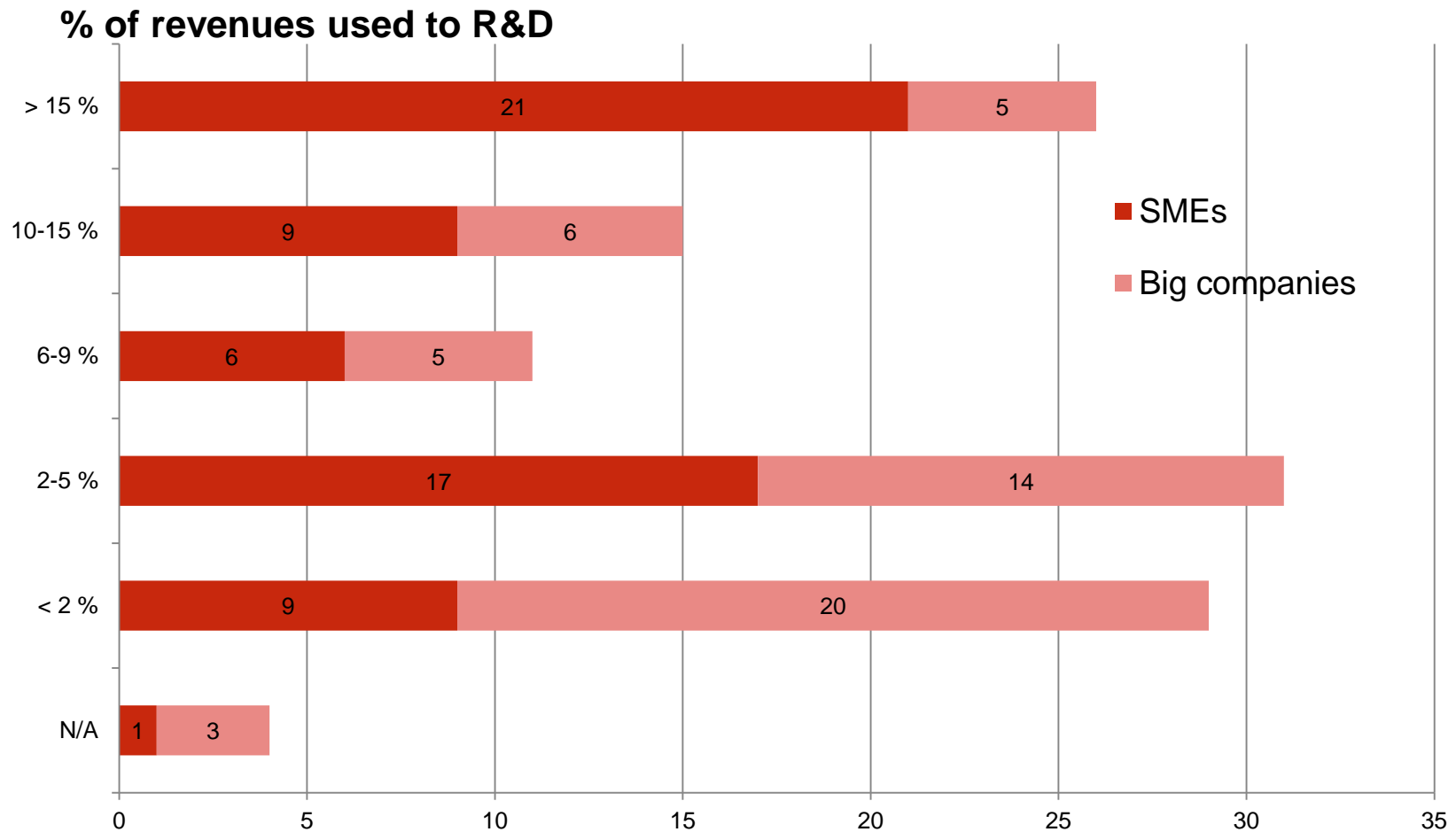
Only 2% decreased the numbers of new products and patents in 2012. For the year 2013, 2% see decreases in the number of new products and no one in the number of patents.

An increasing number of companies is planning to benefit from external technology sources



In 2011 and 2012, 23 % of CTOs planned to license out a technology. Moreover, only 7 % actually did that in 2011, compared to 21 % in 2012.

R&D budgets vary between companies. In general, SMEs use a bigger percentage of their revenues to R&D



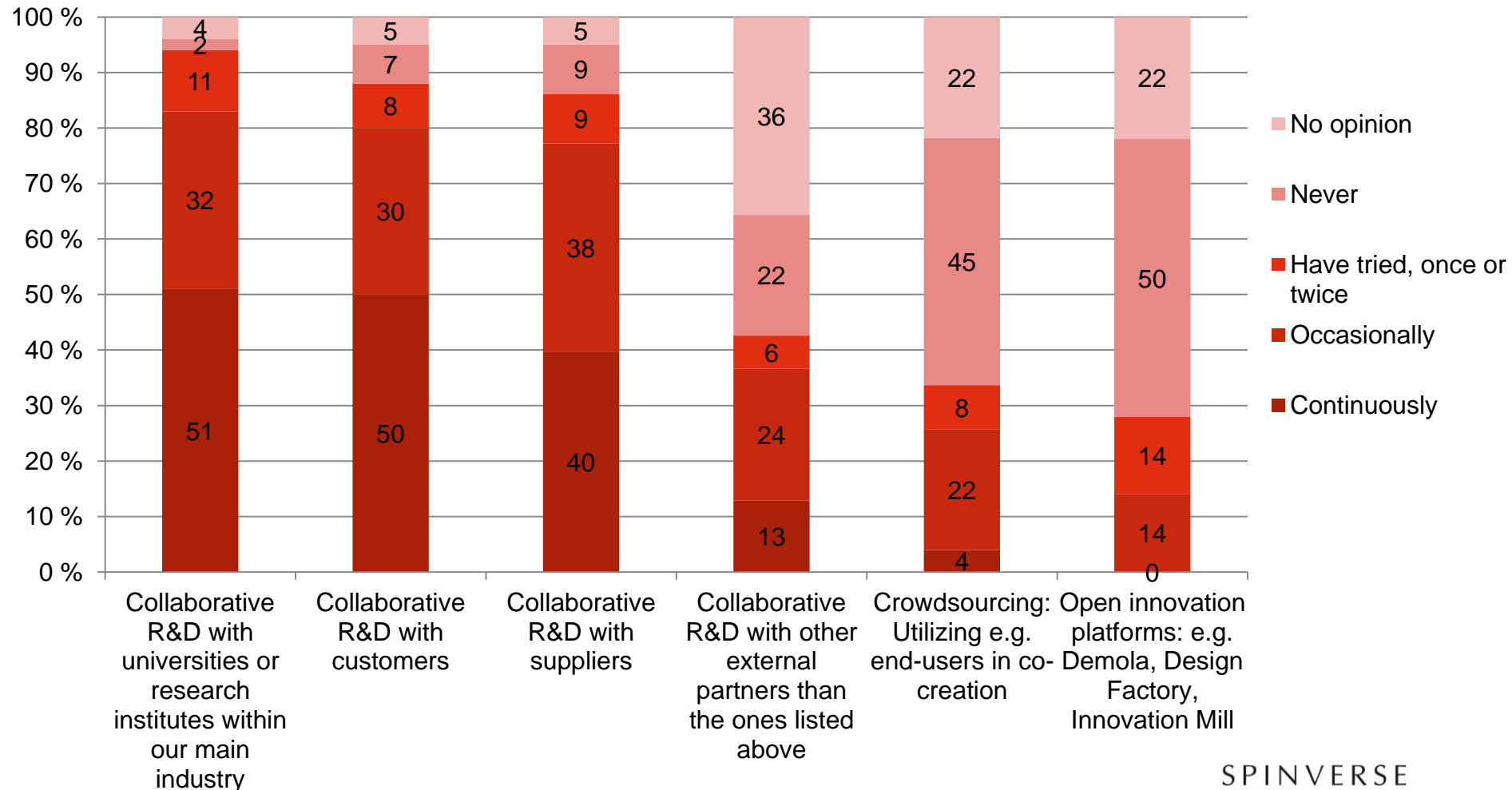
Almost a half (48%) of SMEs but only 21 % of big companies use more than 10% of their revenues to R&D.

CTO Views on Innovation across Value Chains



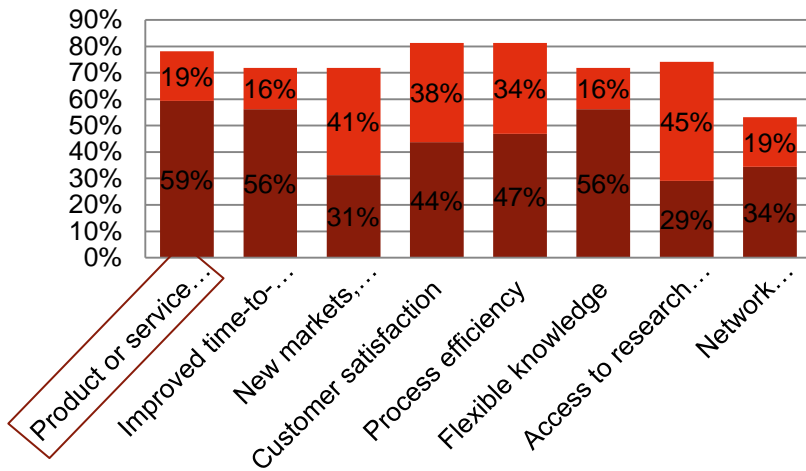
Finnish CTOs understand the importance of customers and suppliers in R&D

The occurrence of R&D collaboration of the CTOs' companies with...

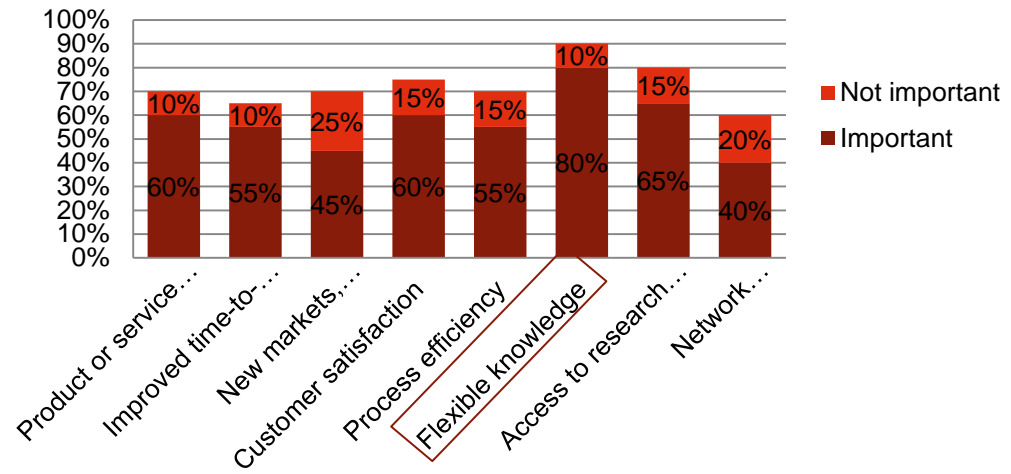


The main benefit of R&D collaboration are product or service ideas for electronics and energy, flexible knowledge for metal and life sciences

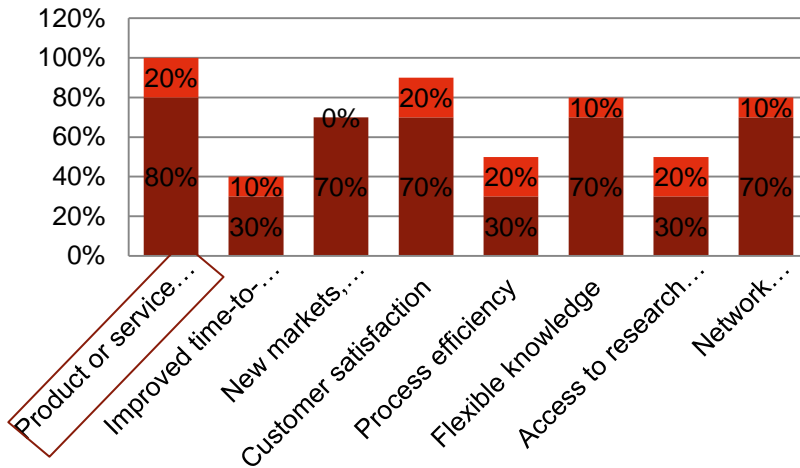
Electronics and ICT



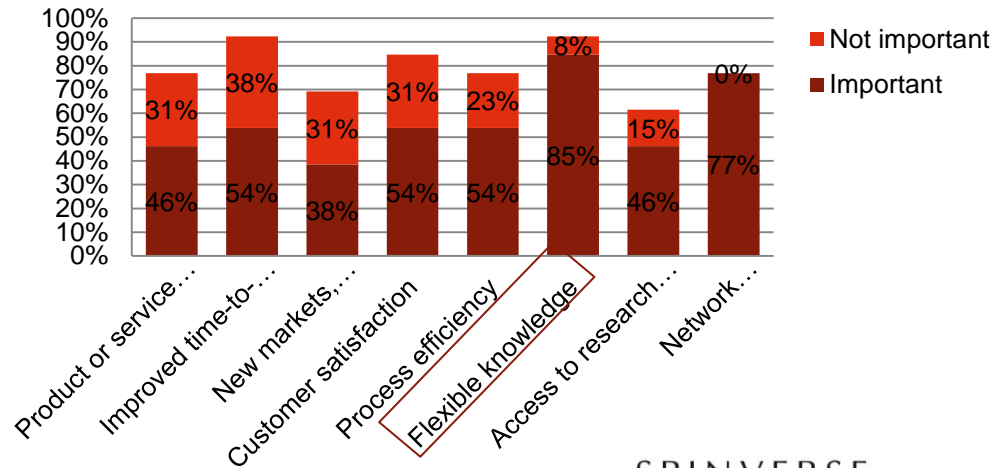
Metal and Mechanical Engineering



Energy and Environment

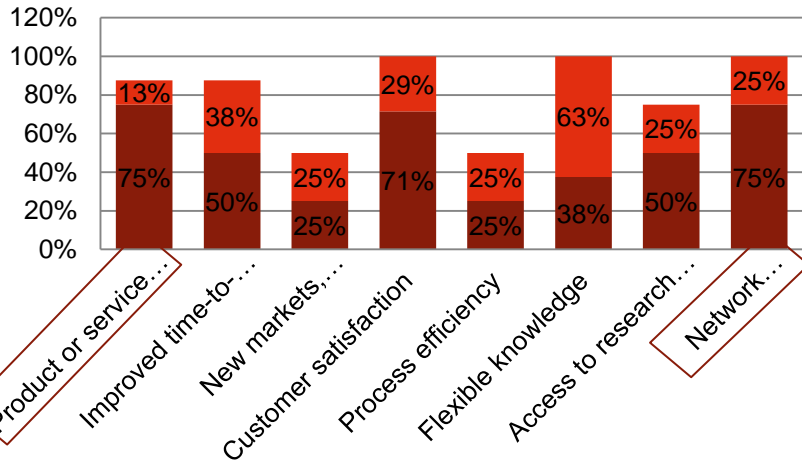


Life Sciences and Healthcare

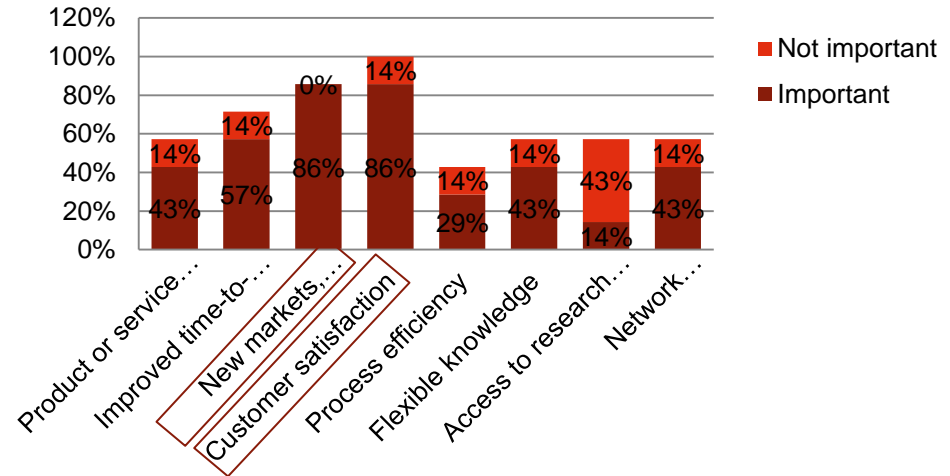


Networks are important as a main benefit of R&D collaboration for chemical, construction and mining sectors. Forest values customer satisfaction and new markets.

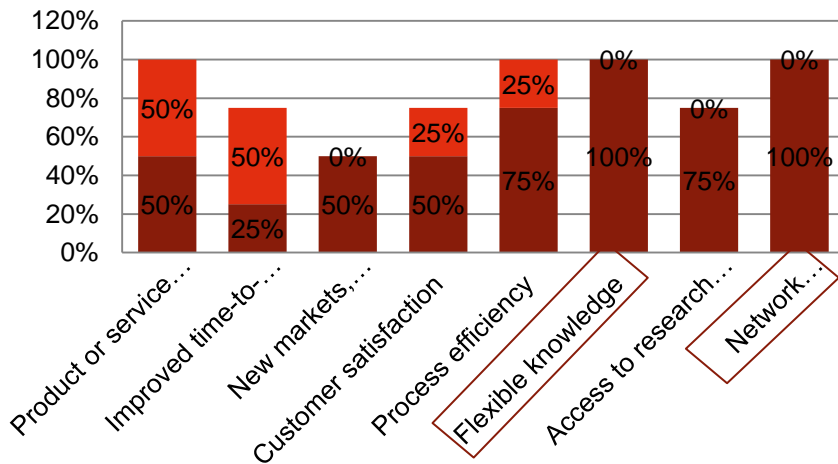
Chemical Industry



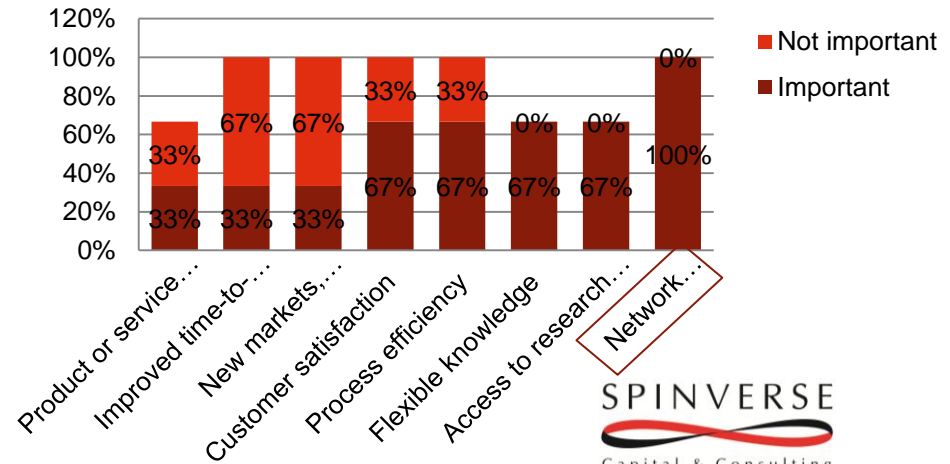
Forest, Pulp and Paper



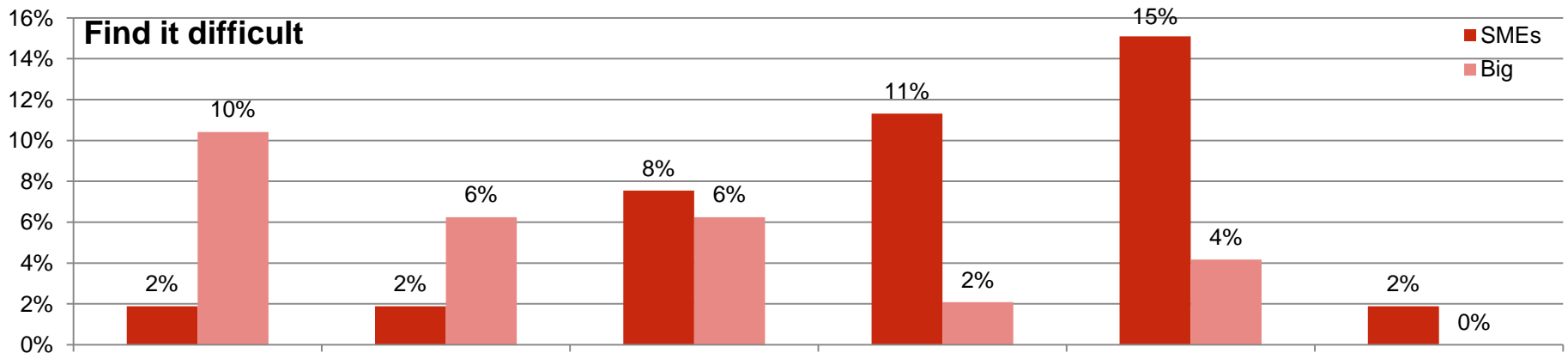
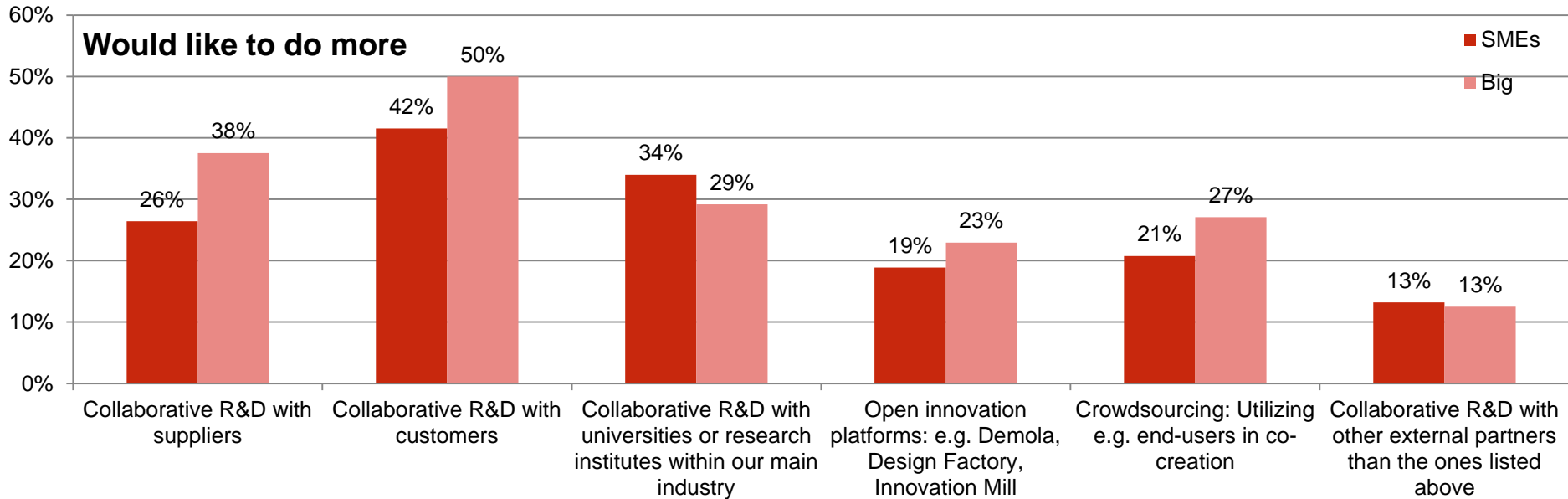
Construction



Mining and Metallurgy



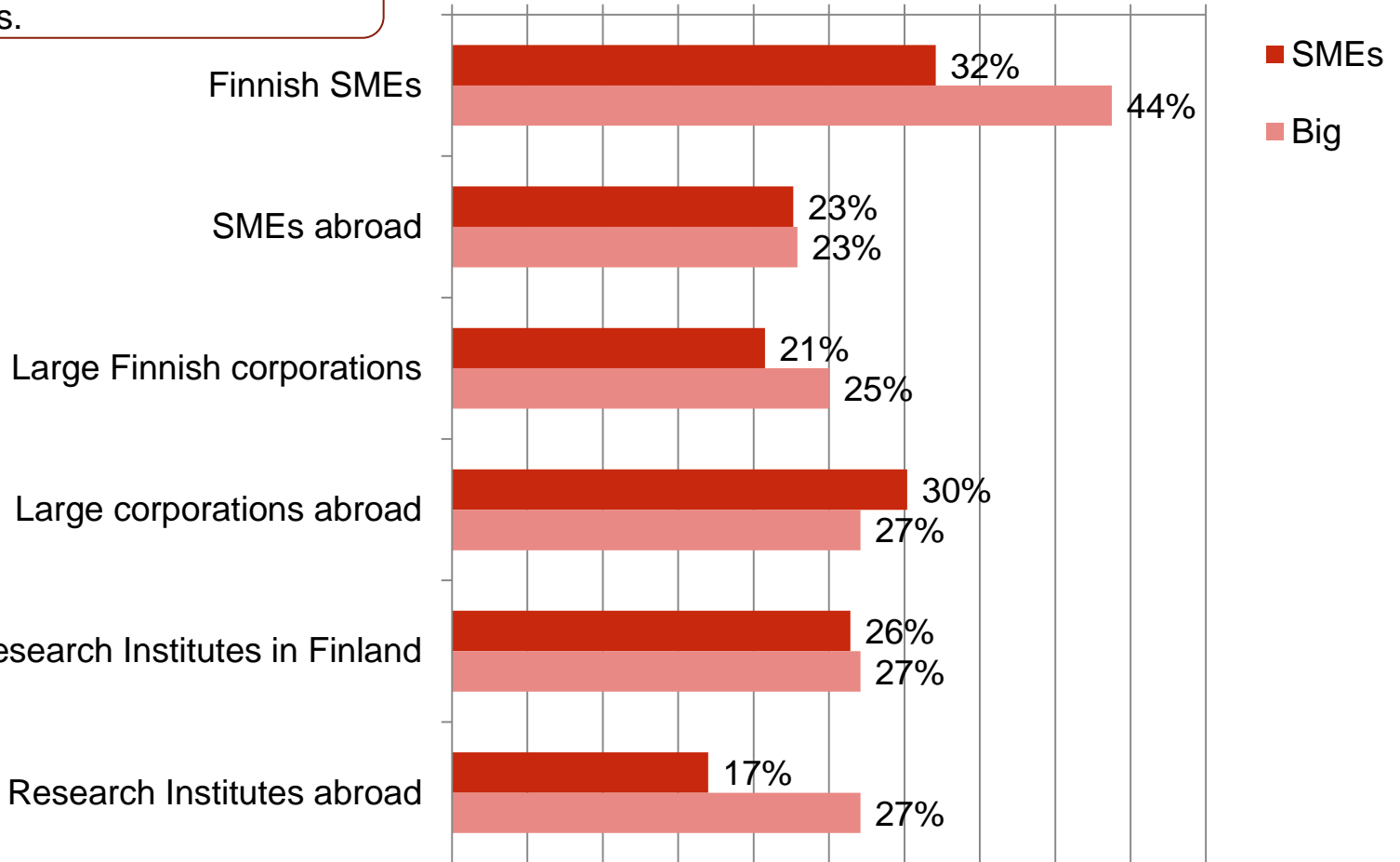
Collaborative R&D across value chains is considered to be easy – is it really?



The CTOs would like to increase their R&D collaboration especially with Finnish SMEs

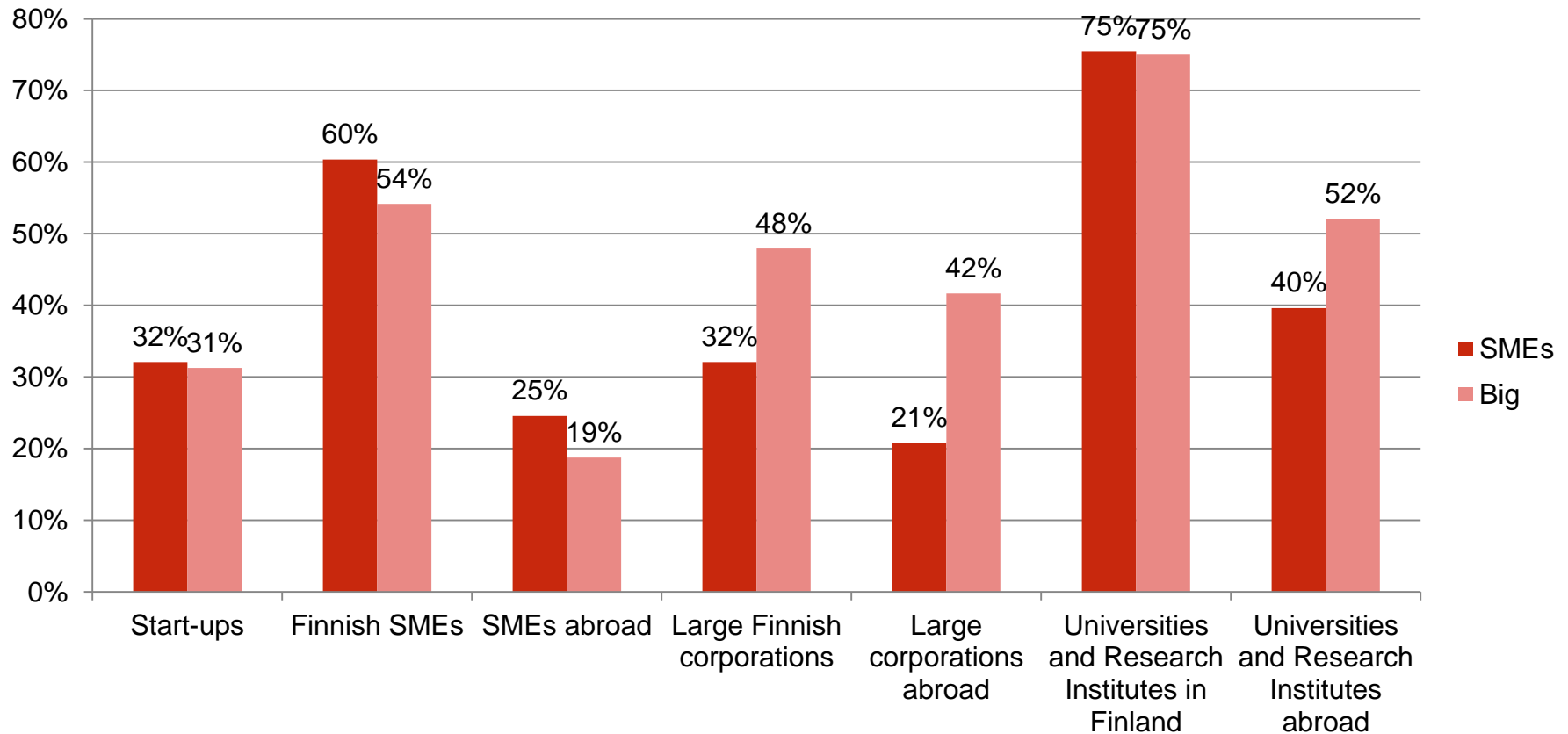
Ardent, innovative entrepreneurs have a lot stronger drive than the ones working in big corporations.

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50%



Foreign SMEs and large companies are seen as interesting, but how to find good R&D partners among them?

The amount of CTOs who think that it is easy to find good R&D partners among...



CTOs' views on networking and collaborative R&D

Networking is important for the development work; however, it needs to be remembered that own skills are needed in order to absorb new knowledge.

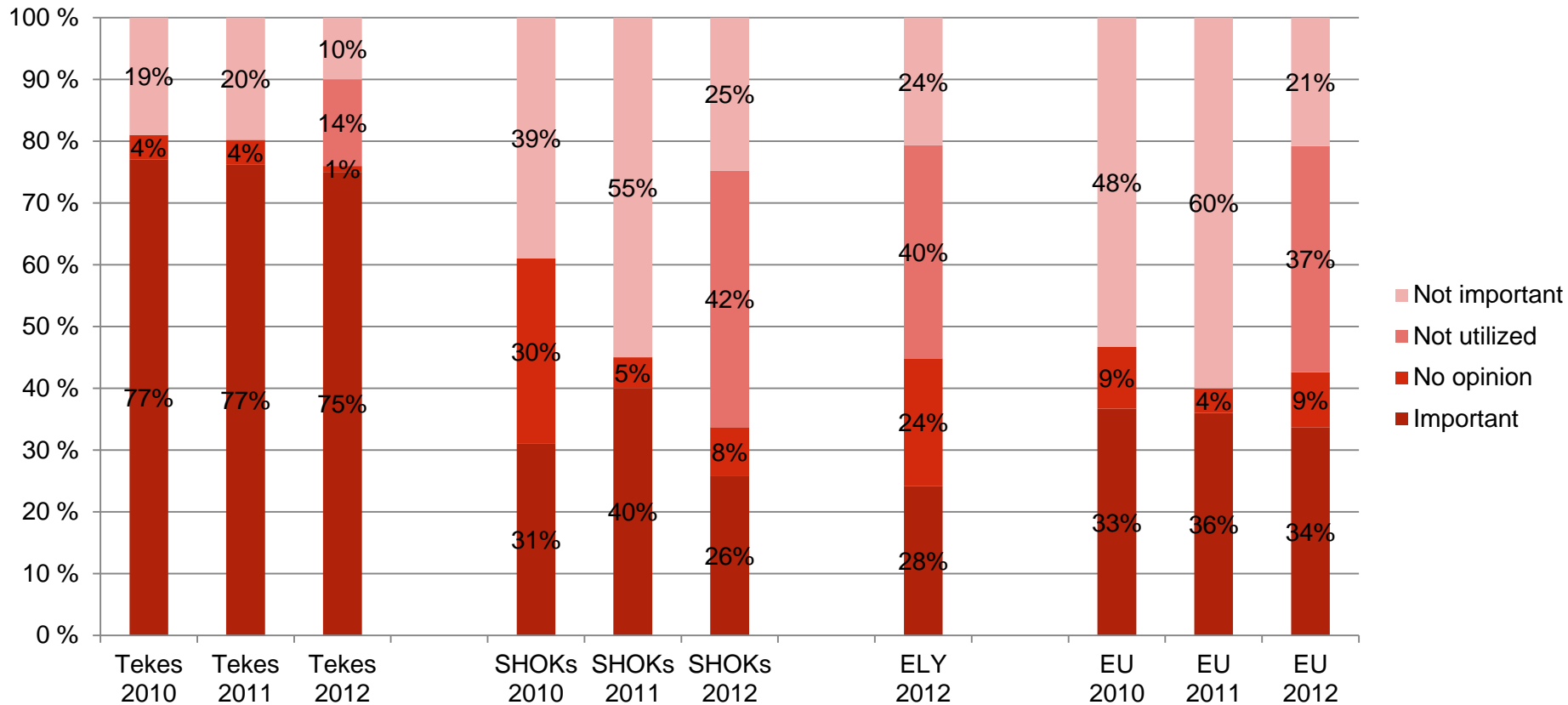
When developing your product portfolio upstream in the value chain, you need to remember not to go to your customer's area of business.

By developing service business, a technology supplier can participate in process and technology optimisation.

R&D could be developed by improved networking. CTOs have a central role in this.

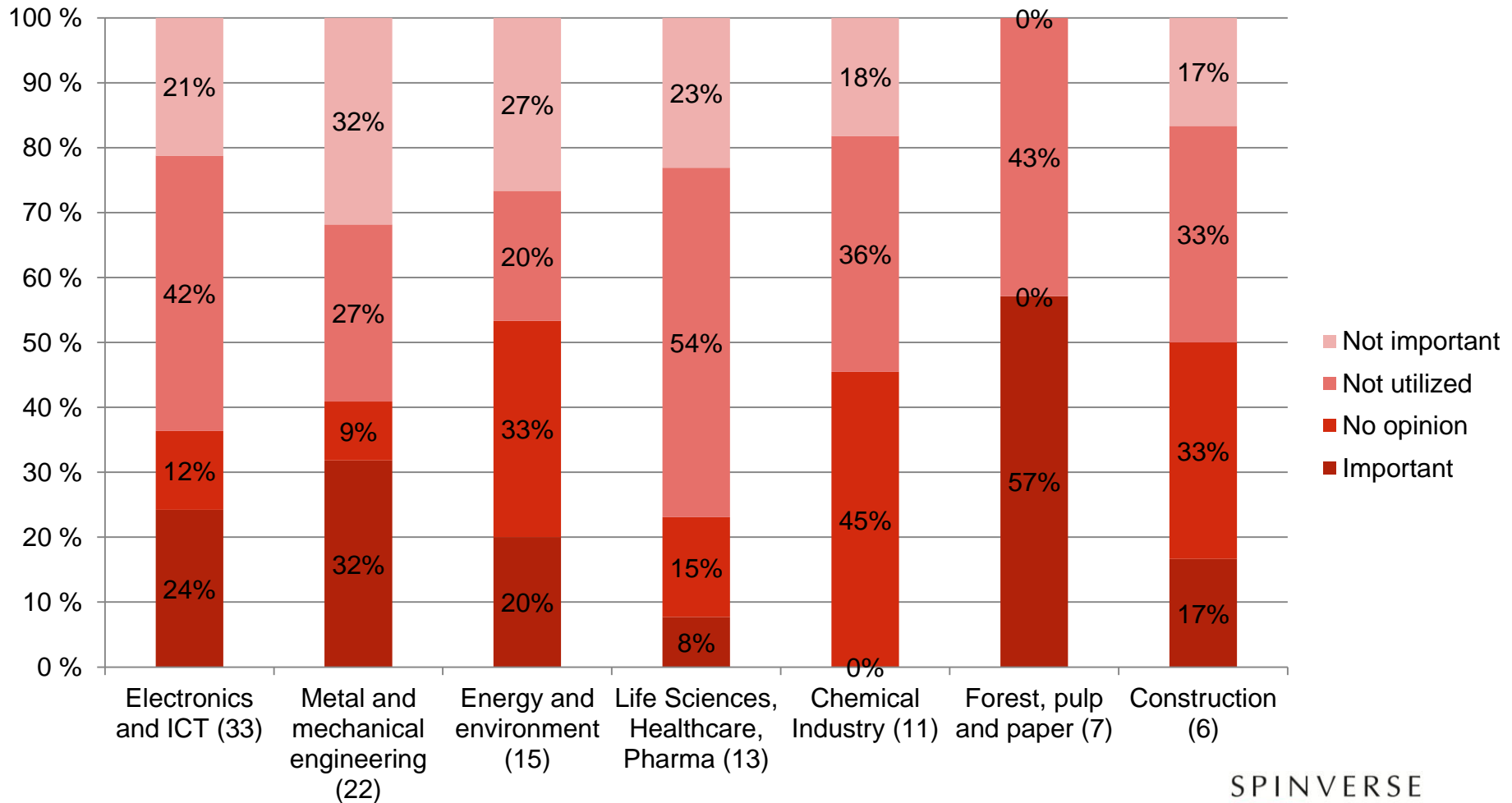
In order to ensure expertise and an availability of knowledgeable employees, It is important to support the research done at universities. That can often also be utilised in processes and product development.

SHOKs are clearly more important for big companies than for SMEs. EU funding is only important for a third of the CTOs.

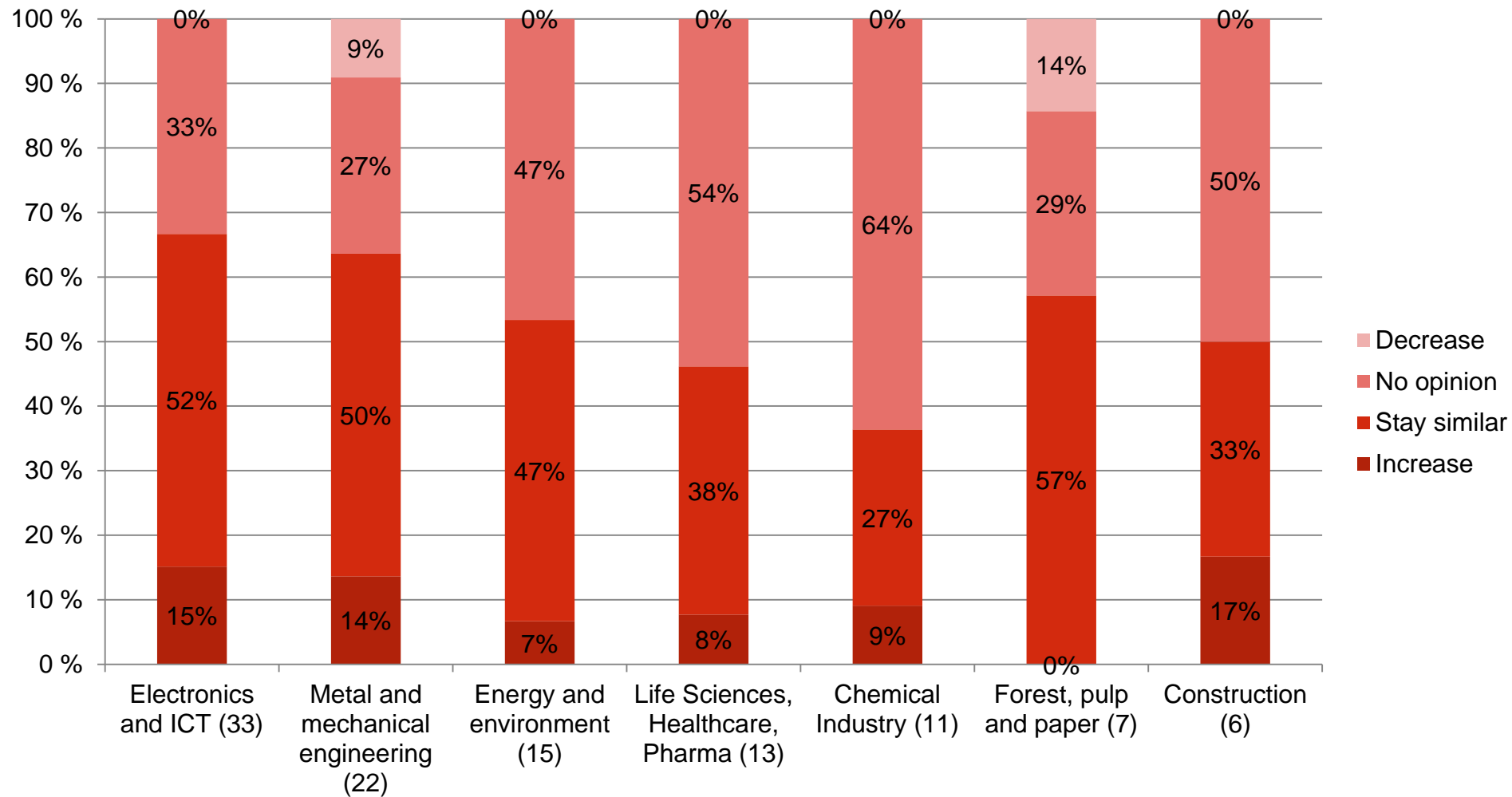


- In 2010 and 2011 figures, the “not utilized” opinion was not used
- 65% of the CTOs who stated SHOKs to be important were from big corporations

In 2012, SHOK funding was found the most important by companies within the Forest, pulp and paper industry, as well as Metal and mechanical engineering



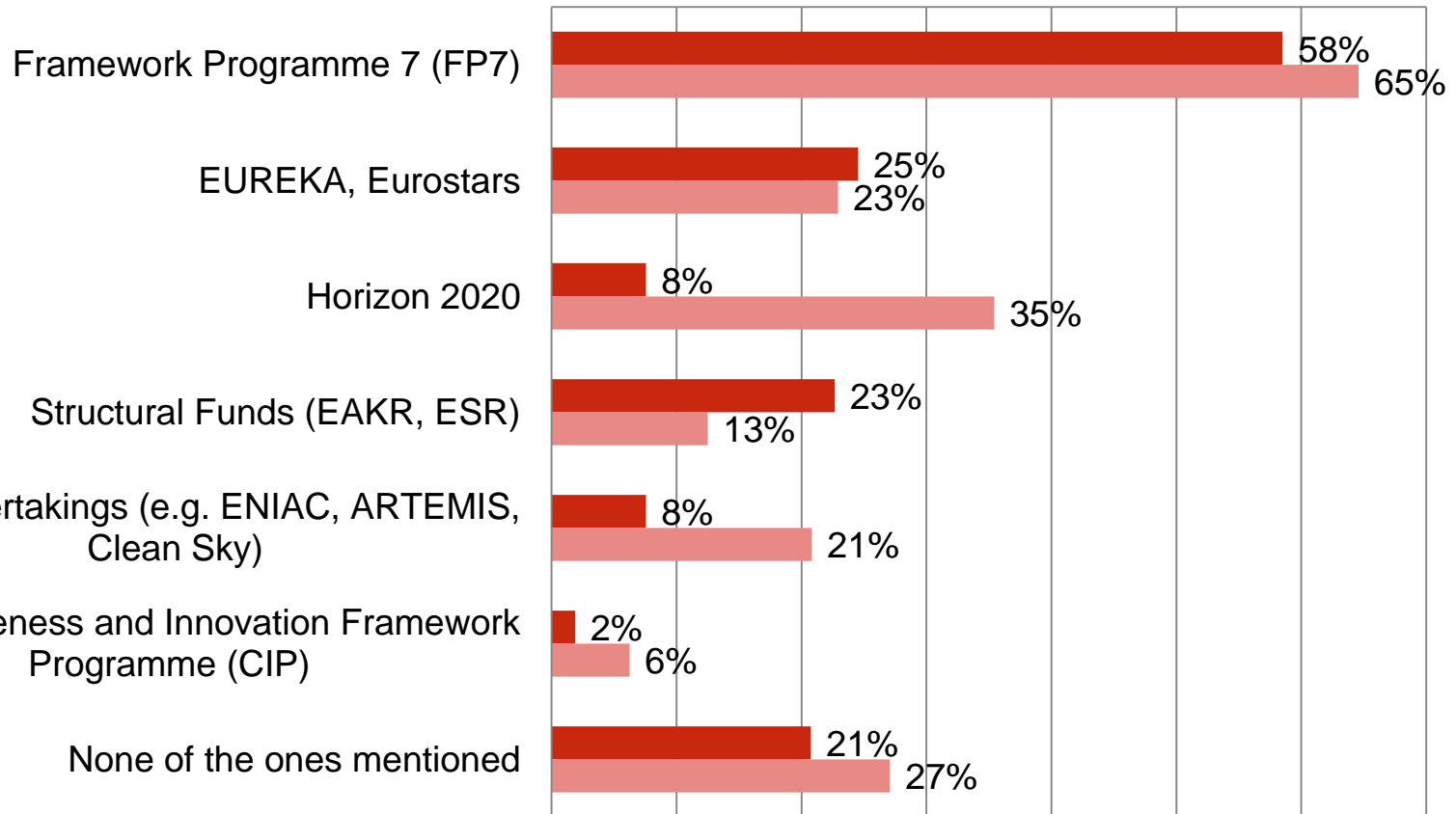
The importance of SHOK funding remains the same in 2013



A quarter of the respondents were not familiar with the most common EU funding opportunities

CTOs who find these EU funding opportunities familiar

0% 10% 20% 30% 40% 50% 60% 70%



■ SMEs
■ Big

Mining and metal industries need more piloting opportunities, SMEs and more value added processing to be done in Finland

Good technology companies in the metal industry value chains are quickly acquired by someone.

A problem of small entrepreneurs is credibility. However, giving opportunities for piloting has been our policy. [The company] sees new SMEs beneficial and needed within the industry.

- The mines that have been active in Finland for a long time have active collaboration in technology piloting with their technology suppliers.
- Technology companies within the mining industry would like to collaborate more with Finnish SMEs and wish to have new entrepreneurs within the industry
- The mines that have opened in Finland lately bring new opportunities for enlarging the collaboration to new metals and production processes
- Domestic value-added to Finnish ore should be increased

Where will Finnish mining technology be developed in the future? [...] Core competences should be retained in Finland.

Conclusions



Even though Finnish CTOs see their R&D investments and recruiting to increase, they are less optimistic than in the previous years: less CTOs see increases coming up.



Most CTOs have R&D collaboration with their customers, suppliers and universities. Big corporations would like to increase R&D collaboration especially with Finnish SMEs. However, only a third of the SME CTOs think that it is easy to find good R&D partners among big corporations.



Building international networks would need additional emphasis to also enable a better gain from international funding opportunities: 25% of Finnish CTOs are not familiar with the most common EU funding opportunities and only a third of them thinks that EU is an important source of public funding.



The interviews revealed that Finnish mining and metal industries need more piloting opportunities, SMEs and more value added processing to be done in Finland.