



Spinverse

Your Emerging Technology Partner

CTO Survey 2012 Results Overview

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Spinverse accelerates the open innovation ecosystem

Innovation Programs

Preparation and management of multi-party programs:
Vision, partner selection, international networking, funding instrument selection, bid preparation.

Technology Transfer & Scouting

Market-driven technology transfer, business and strategy development services

Capital

Raising capital from private and public sources. Advising public and private investors in technology specific business issues.

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CTO Survey 2012 Introduction

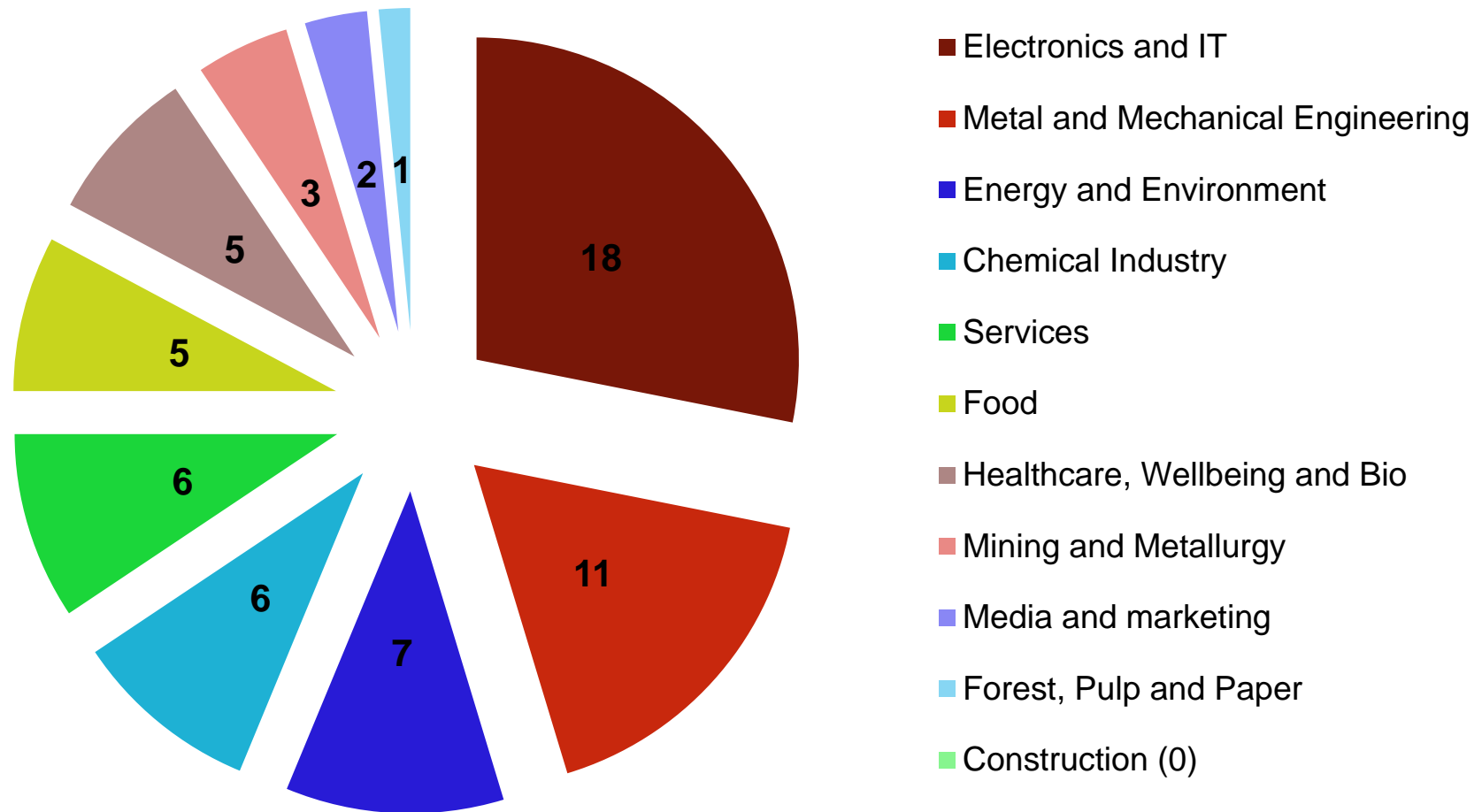


CTO Survey covers over 70 Finnish CTOs views on their current environment and future outlook

- Spinverse conducts annually a survey on Finnish Chief Technology Officers (CTO)
- CTO Survey 2012 was made in partnership with Sitra, Elinkeinoelämän keskusliitto EK and Technology Academy Finland TAF
- Survey received 70 online responses, followed by deeper interviews and analysis
- Survey results are comparable to 2011 with many measures. Additional focus in 2012 was on large enterprises and innovation management processes



Responses cover all industries, ICT and Mechanical Engineering being largest



Quantitative data was complemented by interviewing representatives from large companies

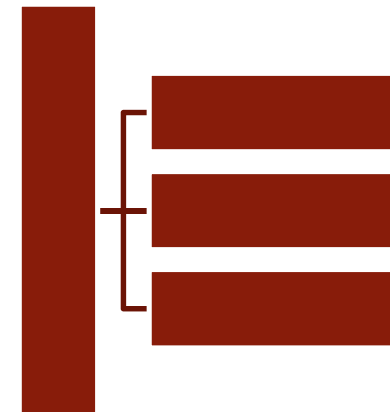
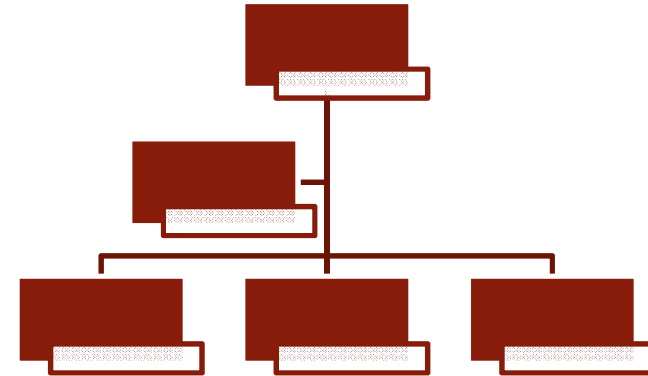
- Kemira: Heidi Fagerholm
- Kone: Giuseppe Bilardello
- Nokia: Henry Tirri
- Orion Diagnostica: Juhani Luotola
- Ruukki: Toni Hemminki
- Stora Enso: Jukka Kilpeläinen
- UPM: Pekka Hurskainen
- Valio: Matti Harju

CTO Profile



CTO's role may be distributed and titles vary depending on organization structure

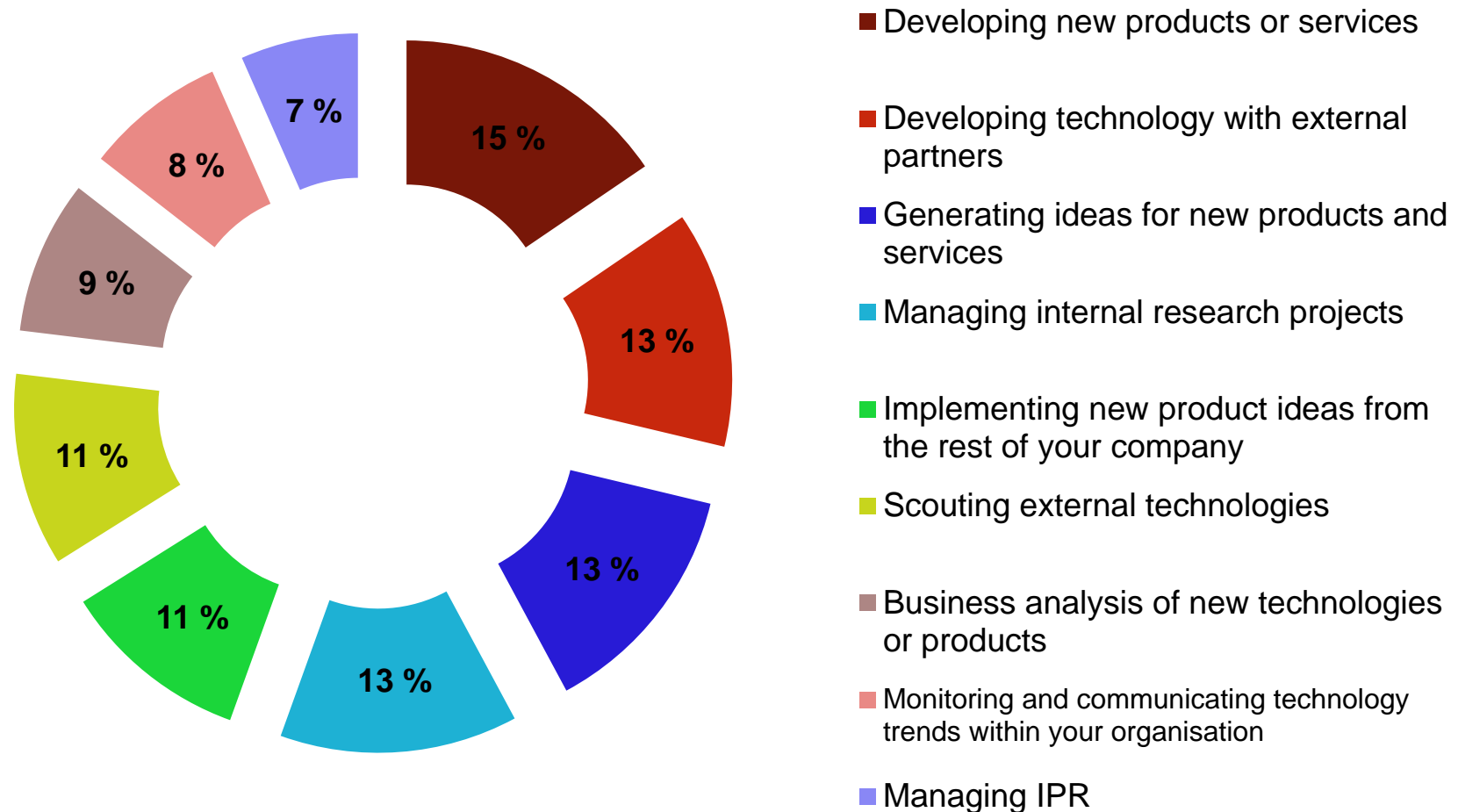
- Research Director
- Technology Manager
- Director of Technology
- Director, Engineering
- Executive Vice President, R&D and Technology
- Group Vice President, R&D
- Global R&D Director
- Head of Technology Management
- SVP, Innovation & technology



- All participants are referred as CTOs in the study

CTO job description is diverse and long

Average % that CTOs use their resources for



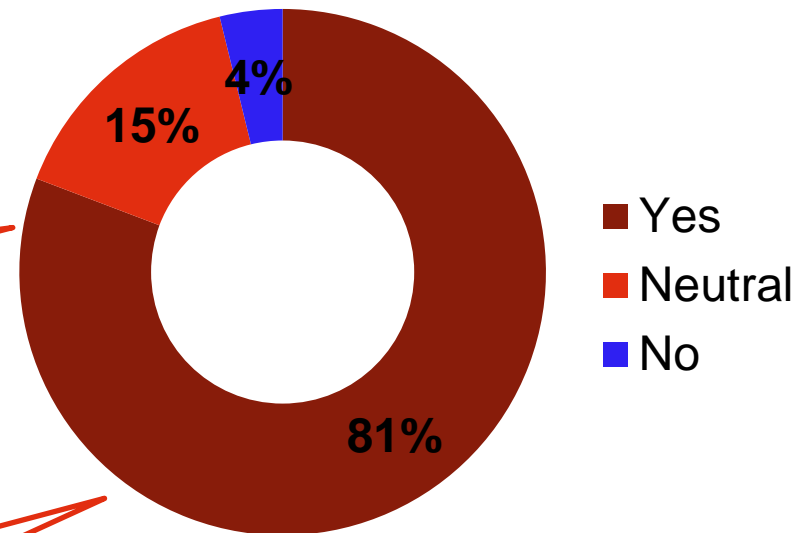
- The average responded use of resources adds to **132%**

The CTO gets most of the new ideas from the customer

- 84 % of CTOs view customers and suppliers as an integral part of the network for idea harvesting

“60 – 70 % of the ideas come from the customer –CTO has to meet the customer and keep up a two-way relationship”.

“CTOs can be in charge of getting first contact to new customer – when the area is new for marketing”.

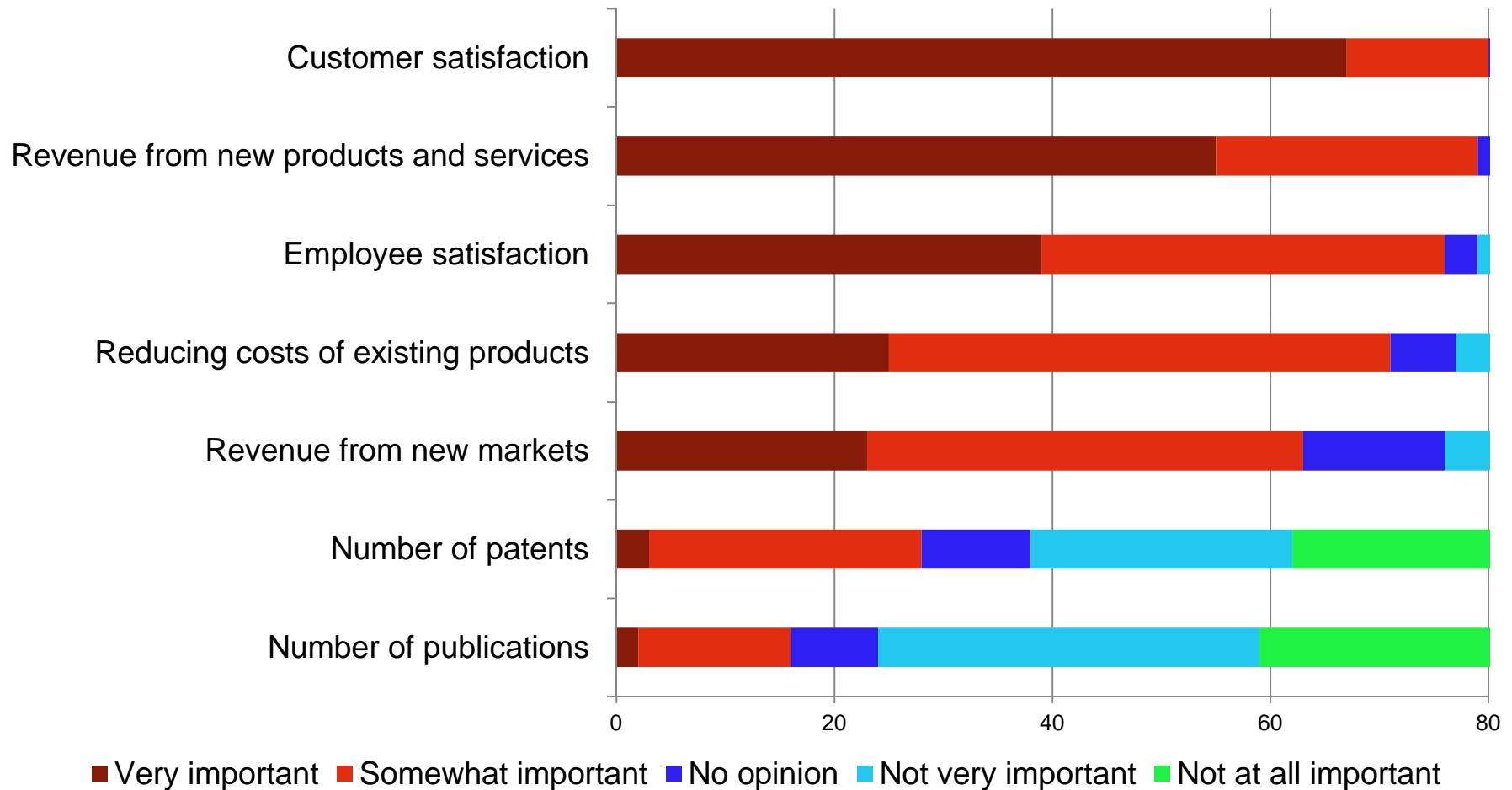


% of CTOs who work well with the customer-facing departments

CTOs on universities: beat international competition with a focus, aim at getting to the top, build own global networks

- "In the traditional industries we have sufficient competences in Finland – for new areas we have started to look for partners also elsewhere"
- "The universities should focus on their areas of expertise"
- "Regarding IPR - University collaboration has been very easy. With VTT we have had some trouble but it is getting better."
- "We have benefited from the international networks of the university professors"
- "Researchers should try to become more international"

Customer and employee satisfaction are important, in addition to the traditional success metrics



Measuring CTO quantitatively is challenging, but possible – some examples

- **New business:** Corporate revenue and profit from new products (< 3 year)
- **Future profits:** Net present value of the CTO portfolio
- **Cost savings:** Manufacturing cost saving, productivity improvement
- **Process efficiency:** Meeting stage-gate process timeline, and budget
- **Volume of innovation:** # of new product releases, # patents
- **Visibility:** Activity in public discussion, hits in media

Needs for new products, working with customers and driving extended organization are global

- The global Arthur D. Little study of CTOs and CIOs in 2011 (N=100) found out that the most important area for innovation investment is gaining a **deeper understanding of the customer**
- The **share of products or services in new business areas is expected to double** from 2010 to 2020
- CTOs and CIOs see that their activity should be **expanded outside new product development** and **innovation should be branched out to e.g. supply networks and quality control**

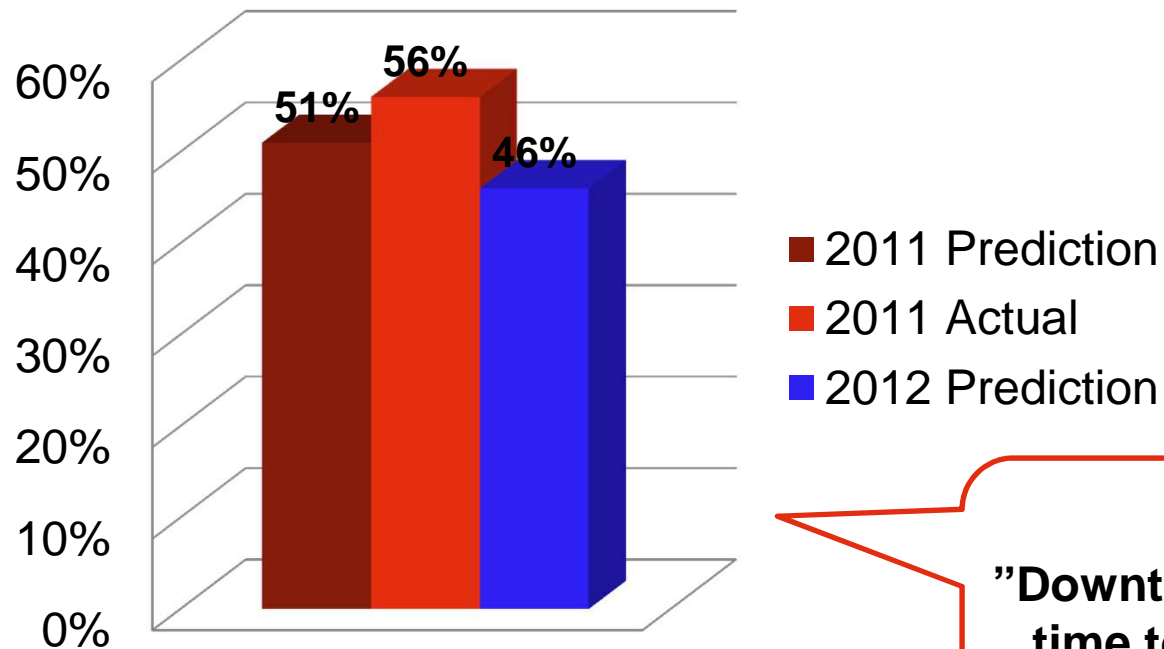


CTO Outlook on 2012



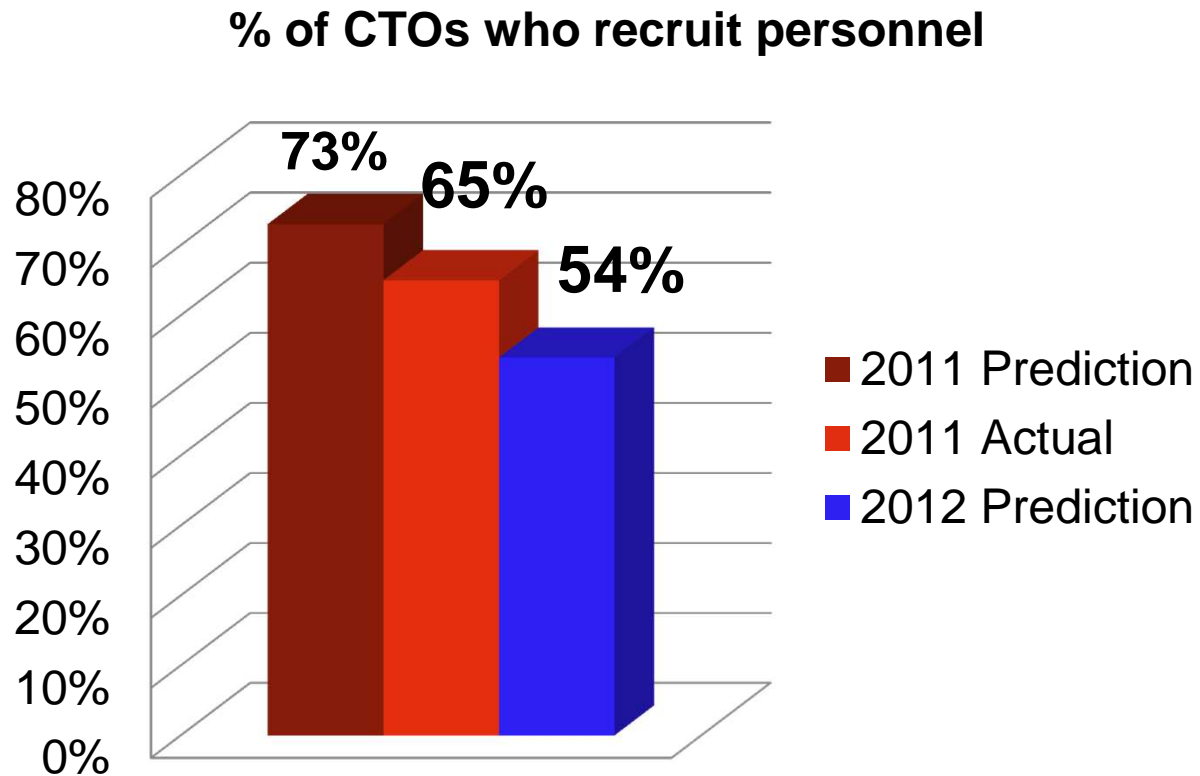
CTOs are not cutting R&D budgets 2012 - almost half of the CTOs plan increases

% of CTOs who increase R&D-investment



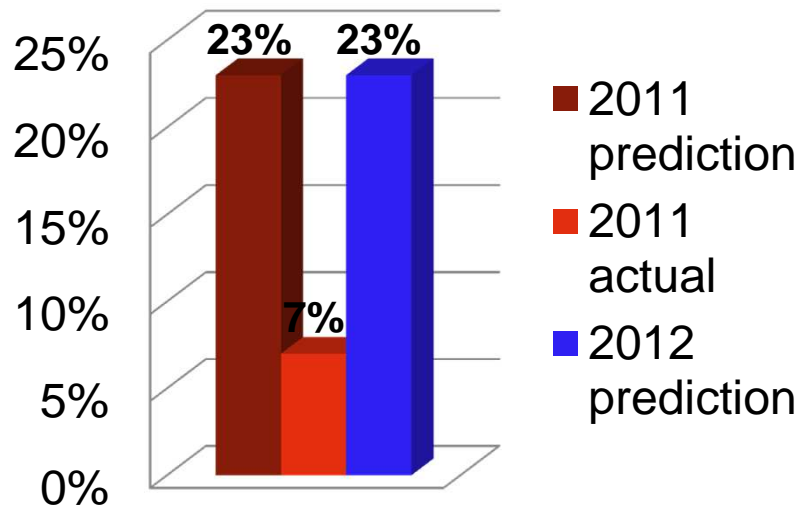
"Downturn is a good time to innovate."

Recruitment also continues, but declines from 2011 signalling increase in outsourcing



Licensing out is difficult for Finnish CTOs and they don't see it very important

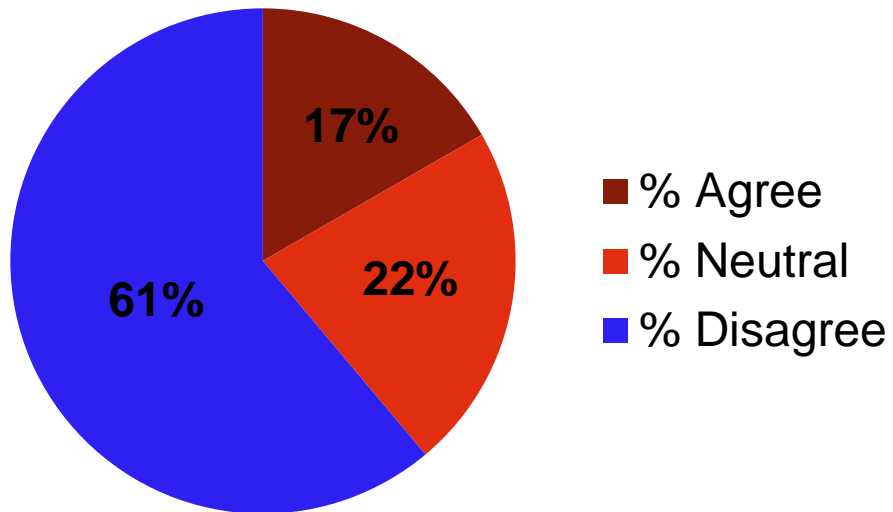
% of CTOs who divest or license out a technology



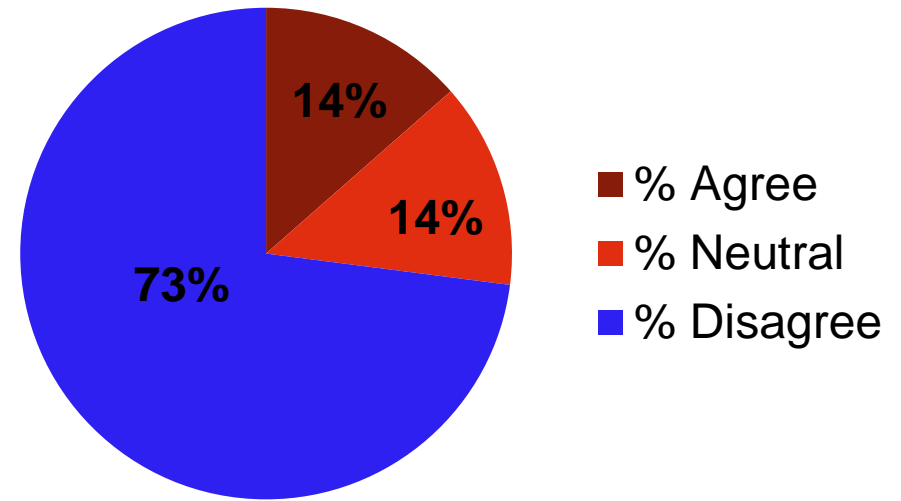
- Only 32 % of CTOs think that licensing and spinning out is important.
- Only 20 % of the CTOs think that their company is well prepared for licensing and spinning out.
- 53 % of the CTOs don't expect to generate revenue in 2012 by licensing or spinning out technologies

Moreover, acquisitions are not seen important and little practiced

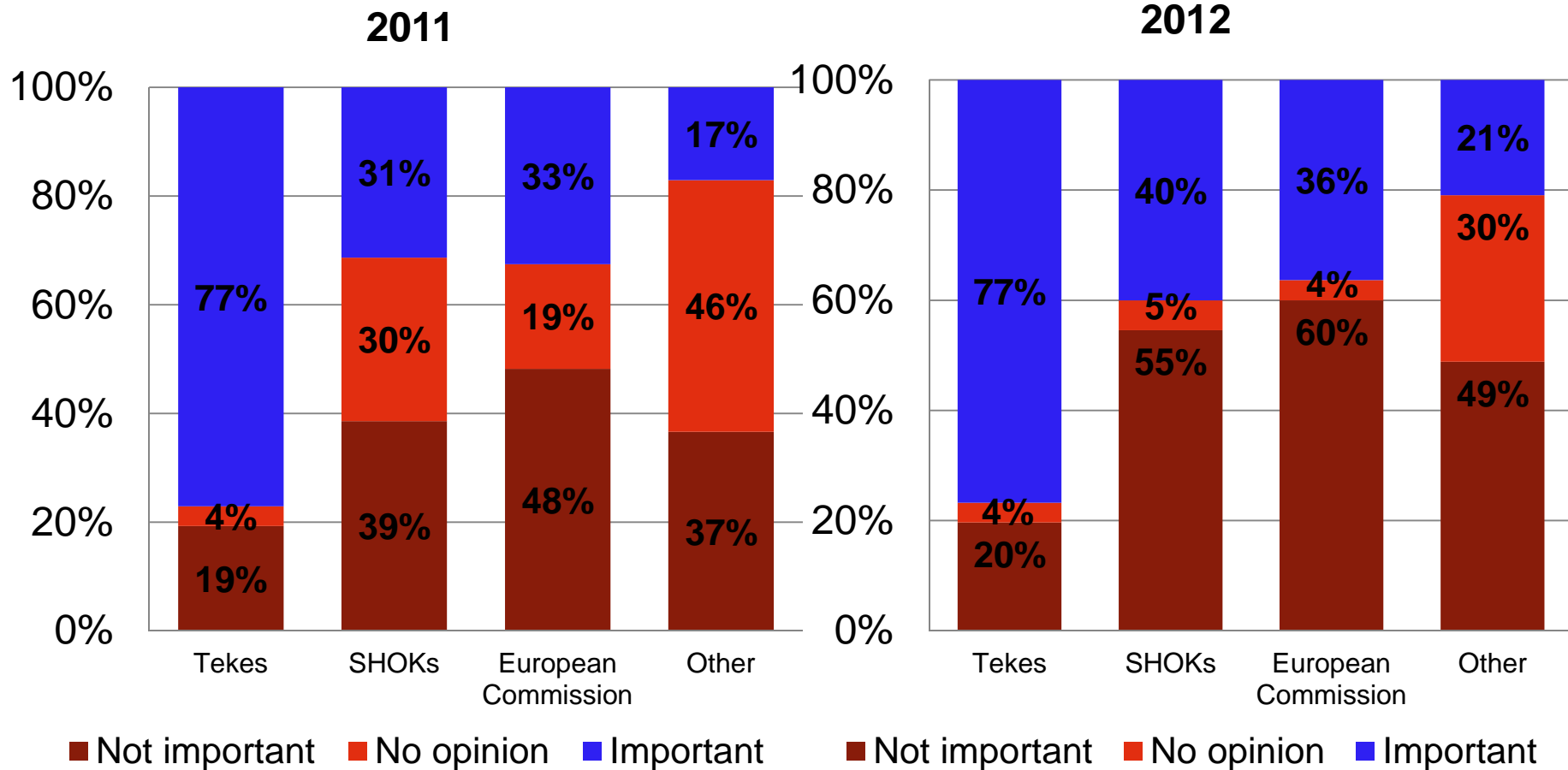
Introducing new technologies by acquisitions is important



We practice acquisitions in order to introduce new technologies

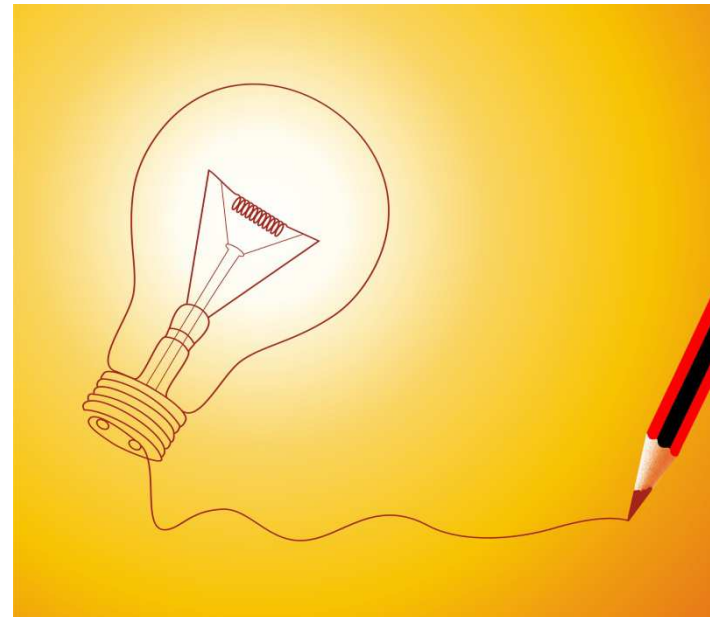


Funding: Tekes dominates, SHOKs gain importance, EU funding seen as the least important



Restructuring of Tekes-funding worry large companies and may move work abroad

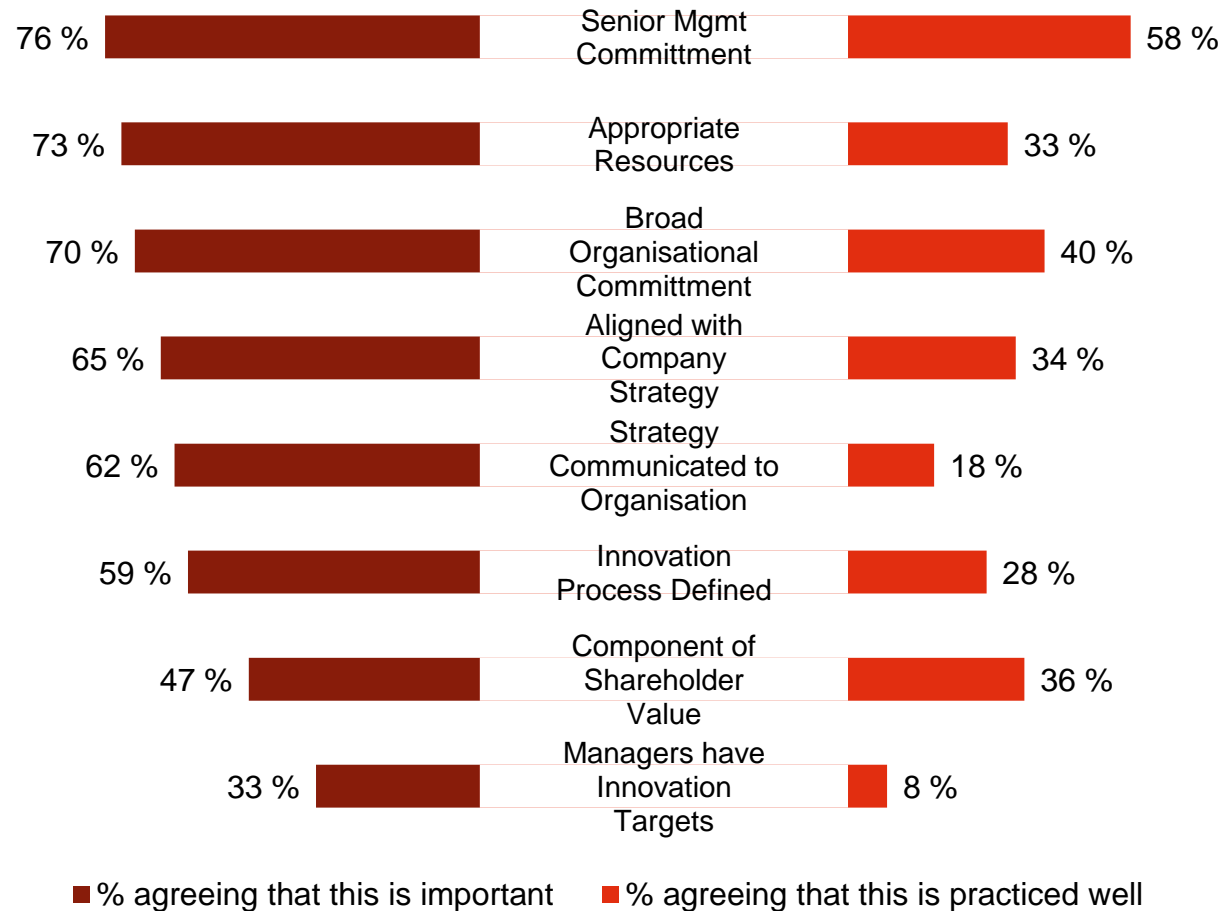
- **“Our company is willing to invest heavily in our Finnish R&D-units, but public funding is a must to keep Finland being a competitive choice”**
- **“Tekes-funding to large companies basically goes almost 100% to Finnish universities, research institutes and SMEs”**
- **“Tekes keeps up the Finnish ecosystem of open innovation.”**
- **“We need to look more into the EU-funding in the future”**



CTO Views on Innovation Management



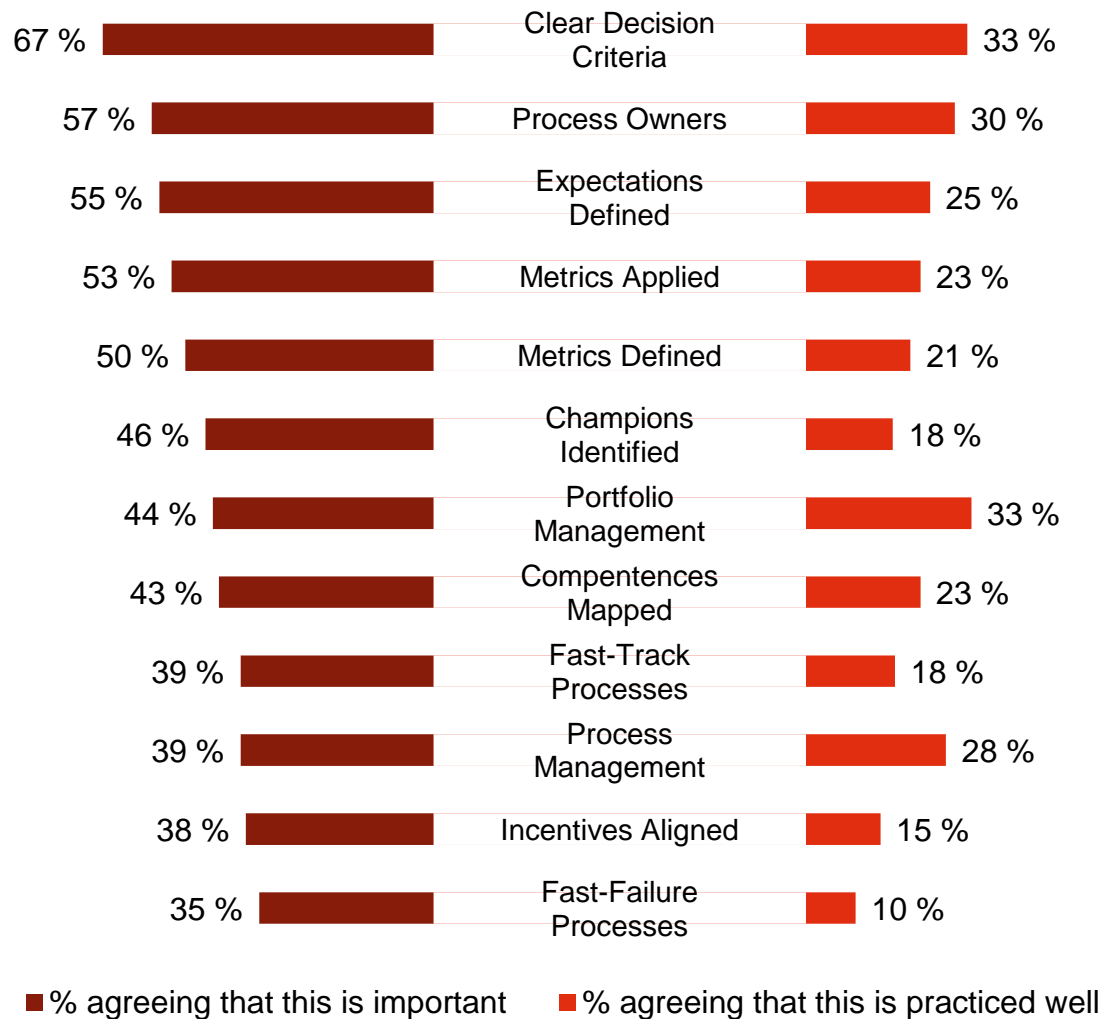
CTOs receive more backing from CEO than the rest of the organisation, communication being a key challenge



→ A broad organisational commitment is often lacking, perhaps because of difficulties in communicating the innovation strategy to the organisation as a whole

→ Resource shortages may also reflect challenges in aligning innovation with the company strategy

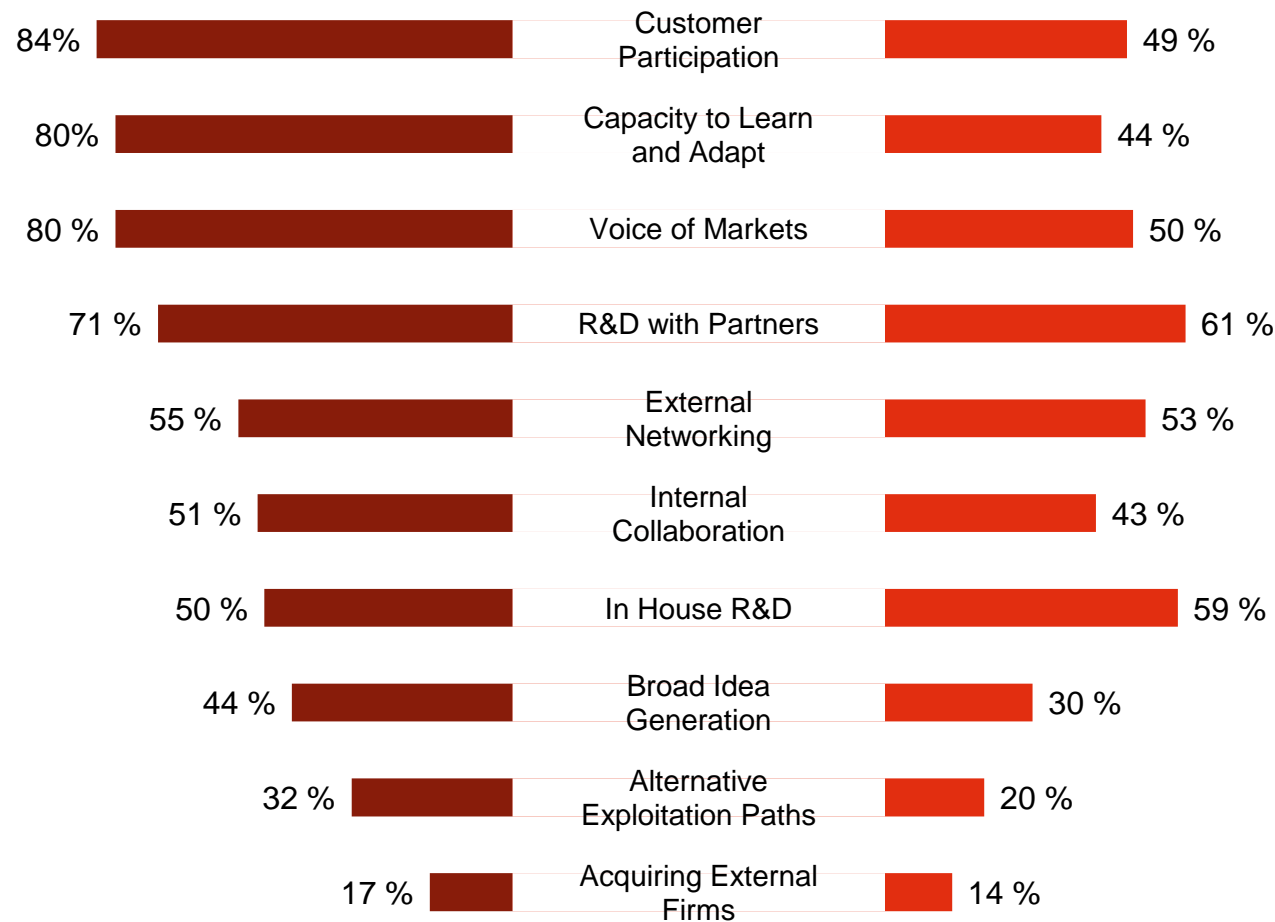
CTOs seek clear decision criteria, but face challenges in setting expectations and defining metrics



→ Portfolio and Process Management is important and performed well

→ A majority find innovation metrics to be important, but few feel these are applied as well as possible

The capacity to generate and absorb ideas from external sources is critical, but could still be improved



→ There is broad agreement on the importance of customers, markets and partners

→ Yet fewer companies believe that this is being handled as well as possible

→ By contrast internal collaboration is felt to work well

■ % agreeing that this is important ■ % agreeing that this is practiced well

Innovation does not require management – it requires empowerment and customer needs

”Innovation management is only useful for measuring output, not for creating or enhancing innovation.”

”Hiring, maintaining and developing competence is important: anything beyond that is completely unnecessary.”

” Inventions do not come because you ask but when you create a good place to innovate”

“Stage-gate model doesn’t work anymore, we turn the model around and get driven by customer needs”



Conclusions and Recommendations



CTO is elementary for business success. Collaboration is the key to sufficient resources

- CTO Survey 2012 by Spinverse was supported by Sitra, EK and TAF. Responses cover 70 CTOs from all industries, supported by face-to-face interviews
- CTO's Role is to bring new technologies and products to market collaborating with customers, suppliers and universities. Wide internal communication and translating technology to business language is a must
- CTOs on universities: beat international competition with focus, aim at getting to the top, make IPR licencing easy
- CTOs are measured by quantitative business and output metrics, but customer and employee satisfaction are important
- Recruitment declines 2012, but still the majority of CTO's plan to recruit 2012. Almost half of the CTOs plan to increase R&D-investment.
- Licensing, spinoffs and acquisitions are unused tools – improvement needed for better utilization of assets and meeting global standards
- Tekes dominates funding, SHOKs gain importance, EU funding seen as the least important. Tekes-funding cuts worry large companies and may move work abroad
- CTO Views on Innovation Management CTOs receives more backing from CEO than the rest of the organisation; communication skills, target setting and transferring ideas from the outside into the organization need improvement