

Enterprise Mobility Cluster

Finnish SMEs

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Management summary (1/3)

Enterprise Mobility Cluster survey 2009 was conducted as a part of Tekes VAMOS programme by the programme activator Spinverse Ltd. Responses were received from 117 SMEs who *offer wireless solutions or solutions which rely on mobility to other businesses or organisations and they operate in Finland*. 91% of respondents were CEO/management level.

Cluster companies are profitable and will grow rapidly in 2010

The average founding year of the respondents was 2001 and the peak of establishing companies was in 2006-2007 after which the rate has stabilised. Their revenues dropped slightly in 2009 to an average of 1,75M€, but they are expected to grow 34% in 2010. The average amount of personnel (18) didn't decrease in 2009, and it's expected to grow to 20 in 2010. Companies stayed profitable (average EBIT 5,9%) and the profitability is expected to grow especially among the small companies. Companies throughout the cluster plan to increase their R&D investments in 2010 to an average of 17,2% of the revenue (higher than with rest of the technology industry).

Management summary (2/3)

The companies target their offerings on field operations

Most respondents consider mobile/wireless solutions as only a part of their offering. Most companies concentrate on Blue Collar Mobility (46%) and Customer Interaction (43%). Low portion of White Collar Mobility solutions (34%) could be explained by heavy international competition. Most solutions are used in supporting Maintenance and Service (46%) and Transportation and Logistics (45%) customer processes. F&C (14%) and HR (14%) are the most underserved customer processes. Among the served customer industries, Transportation and Logistics (47%) and the Public sector (37%) are most popular. Forest (16%) and Food (16%) industries are the least popular.

Solutions typically consist of productised software

Solutions are typically delivered by the SaaS model (39%), and hardware is most important in a supporting role. Companies offer equally products and services. The solutions are more often productised (71%) than not (63%), but productisation does not correlate with profits.

Management summary (3/3)

The solutions rely on widespread technologies

2G&3G technologies are the most popular (77% and 64%), which can be explained by SMS and mobile data enabled services. WLAN (54%) and positioning (45%) stand out but NFC/RFID (23%) is not very popular. Symbian smart phones (42%) and personal computers (41%) are the most popular devices, but the iPhone has a relatively high standing (22%).

Companies increased their solution portfolios during the downturn

Most competition is present in food and transportation and logistics industry providers, but there are no monopolies in any of the customer industries. The companies were not caught by the recession (74%) and instead they increased their solution portfolio in 2009 (71%). High growth is expected within several customer industries in 2010.

R&D activities, international operations and financing

39% of the companies only do R&D along the daily business but 44% have dedicated R&D staff. 44% of companies already have revenue from abroad, and only 10% are not even considering it. Almost all companies are financed by their Finnish founder or employee, and public agencies are the second largest source of funding.

About the report and the survey

- This report is based on Enterprise Mobility Cluster survey 2009
- The survey was conducted as a part of Tekes VAMOS programme by the programme activator Spinverse Ltd
- The survey charted the landscape of Finnish SME's in the Enterprise Mobility Cluster for the first time in history
- The survey consisted of 21 questions in English and it took place in November-December 2009 as a web survey
- Several questions on the survey were based on National Software Industry Survey by Software Business Laboratory at Helsinki University of Technology (<http://www.sbl.tkk.fi/oskari/>)

About the survey sample

- 780 Finnish ICT companies were selected from VAMOS and Spinverse databases and contacted via e-mail
- The recipients were SME's (<50MEUR turnover, <250 employees)
- 117 responses were received (response rate 15%)
- Responded companies *offer wireless solutions or solutions which rely on mobility to other businesses or organisations and they operate in Finland*
- 91% of respondents were CEO/management level
- Respondents were promised that they will receive the report first and that they participate in a raffle of 10 USB sticks

Estimated size of the whole cluster

- The Enterprise Mobility Cluster is considered to consist of small and medium sized enterprises operating in Finland
- The cluster consists of approximately 400-500 companies
- Extrapolated from mean and median revenues, the cluster size is 250 – 500 M€
- As a comparison, the share of Finnish companies in the Finnish software industry is 2300 M€
 - EM cluster is mostly overlapping with the Finnish software industry
 - Corresponds to 10-20% of whole Finnish software industry

Characteristic cluster company (1/2)

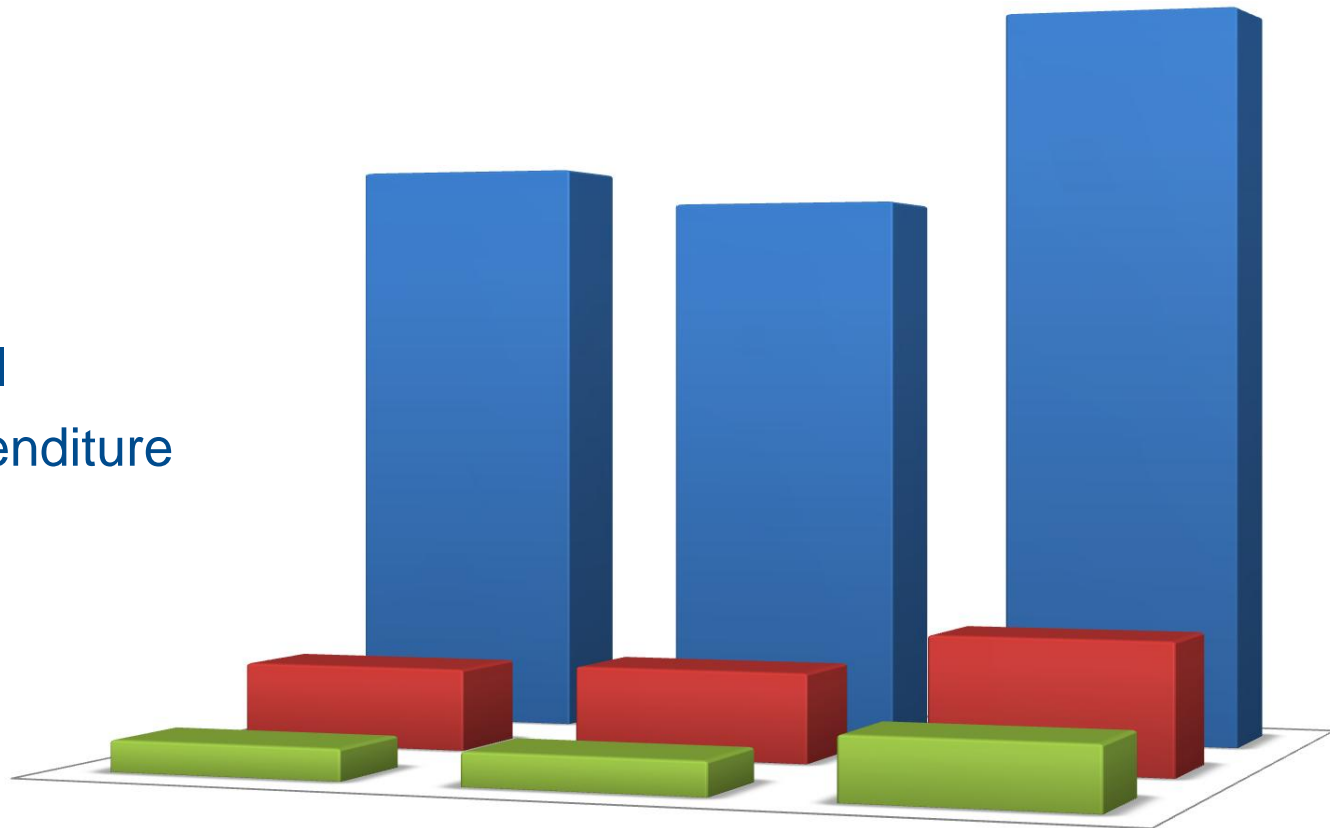
- Mobile solutions are **not the main offering** of the company
- Has customers in **transportation and logistics** and the **public sector**
- Its solutions support **basic industry processes** (blue collar mobility and asset management) or **CRM and marketing processes** (mobile office or mobile customer interaction)
- Its solutions consist of **productised products or services** delivered by **SaaS-model** or as **software** with supporting hardware
- Utilizes **GSM/UMTS** as the main wireless technology, and possibly also **WLAN** or **GPS**
- Its most important technology platforms are **Symbian smart phones, personal computers** and **specialised devices**

Characteristic cluster company (2/2)

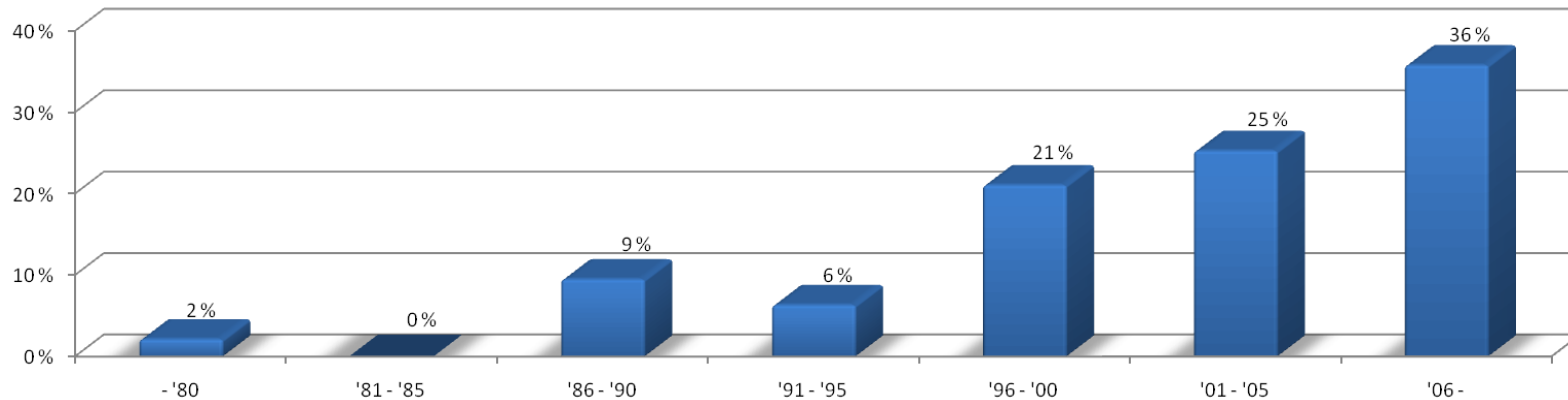
- Is **6-8 years old** and employs a staff of **10-20 people**
- Generates a revenue of **1.5 M€** and expects to grow **34%** in 2010
- Has been able to stay profitable (**EBIT 5,9%**) even during the recession
- Research and development is conducted along daily business, but almost **20% of revenue** is spent on in-house R&D work
- **80% of the revenue** comes from Finland, **20%** from international operations
- The most important source of financing are the **founders or employees** of the company
 - It has also received some financing from Finnish **business angels, VC's or Tekes** and it plans to seek **more external financing** in 2010-2011

Characteristics of Finnish Enterprise Mobility Cluster: **Key Figures**

- Age
- Revenue
- EBIT
- Personnel
- R&D expenditure



Rate of founding new firms has stabilised



- A large number of companies have been founded during the last few years
- The peak was in 2006-2007, since then the rate has stabilized
- An average company was founded in 2001
- Half of the companies have been founded after 2003

"What year was your company founded?"

n= 95

SD= 7

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Cluster companies expect steep growth

Revenue	Fiscal year 2008	Fiscal year 2009	Fiscal year 2010
Mean €	1,87 M€	1,75 M€	2,36 M€
Change %	-	- 6,5%	+ 34%
Median €	0,60 M€	0,50 M€	1,00 M€

- Revenues dropped slightly in 2009, but they are expected to return to steep growth path in 2010
- Variation among companies is high (from 0€ to 20 M€)
- Enterprise Mobility cluster companies are slightly smaller than their software industry counterparts (mean revenue in 2008: **2,3 M€***)

*National Software Industry Survey 2009

"Please estimate your revenue in last, current and next fiscal year"

n= 76 / 83 / 81

SD= 3,2M / 3,0M / 3,5M

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Recruiting will increase with the revenues

Personnel	Fiscal year 2008	Fiscal year 2009	Fiscal year 2010
Mean	18,3	18,4	22,3
Change %	-	+ 0,5%	+ 21,2%
Median	8	7	10

- Cluster companies did not lay off personnel during 2009
- Growth is expected in 2010
- Variation among the companies is high, but a typical company employs 10-20 people

"Please estimate the numebr of your personnel in last, current and next fiscal year" n= 88 / 89 / 88 SD= 32 / 31 / 35

Especially small firms will grow their profits

EBIT	Fiscal year 2008	Fiscal year 2009	Fiscal year 2010
Mean %	5,2 %	5,9 %	8,2 %
Median %	0,0 %	1,5 %	7,0 %

- Despite the recession, companies have managed to stay profitable and even increase their profits
- Especially small companies are expecting higher profits in 2010

"Please estimate your EBIT % in last, current and next fiscal year"
n= 77 / 81 / 82

SD= 0,3M / 0,2M / 0,5M

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R&D investments are high and will increase

R&D share of revenue	Fiscal year 2008	Fiscal year 2009	Fiscal year 2010
Mean €	0,26 M€	0,28 M€	0,40 M€
Mean %	13,7 %	15,8 %	17,2 %
Median €	0,12 M€	0,13 M€	0,21 M€
Median %	20,0 %	26,0 %	21,0 %

- Companies throughout the cluster plan to increase R&D in 2010
- They spend more on R&D than rest of the technology industry
 - Software industry*: Mean **16,6%** / Median **10,0%**
 - Electronics and electrotechnical industry**: Mean **10,0%**
 - Information technology sector**: Mean **6,0%**

* National Software Industry Survey 2009

** Technology Industry in Finland 2008

"Please estimate your R&D expenses (% of revenue) in last, current and next fiscal year" n= 77 / 80 / 81 SD= 0,4M / 0,5M / 0,8M

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Characteristics of Finnish Enterprise Mobility Cluster: **Main product**

- Role of wireless solutions
- What are the products and services about?
- What customer processes they support?
- What customer industries are served?
- How are the solutions delivered?
- How are the solutions packaged?



Illustrations: stock.xchng,
<http://www.finfthelament.fi/rfid>

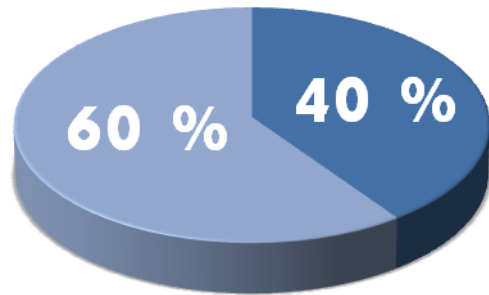
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Significance of mobile/wireless solutions



- Mobile/wireless solutions are our main offering
- Mobile/wireless solutions are a part of our offering

- Most respondents consider mobile/wireless solutions as only a part of their offering
- Companies who see mobile/wireless solutions as their **main** offering
 - are 2 years younger
 - generate 35% smaller revenue and employ 57% less people
 - are twice as profitable(than those who see them only a **part** of their offering, on average in 2009)

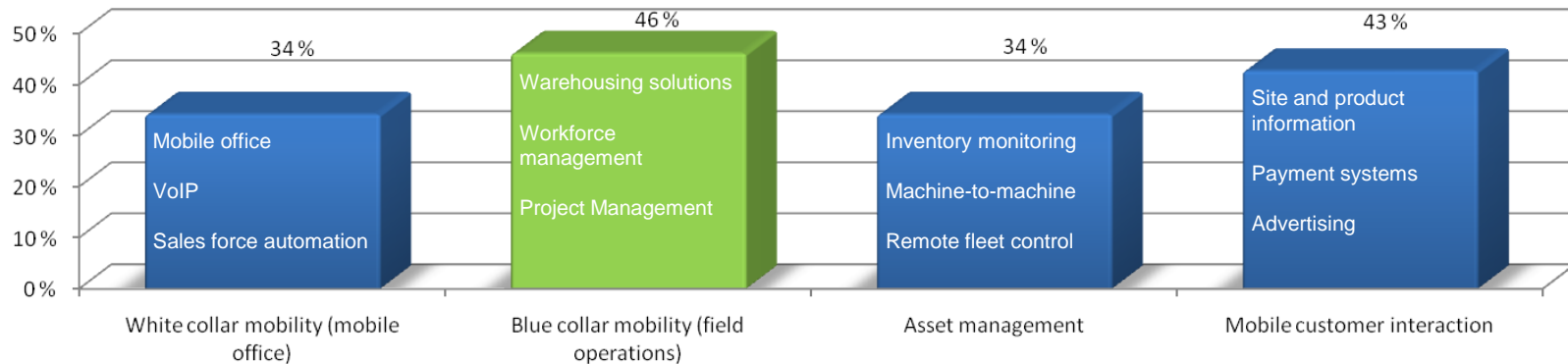
"What role mobile solutions have in your business? "
n=117

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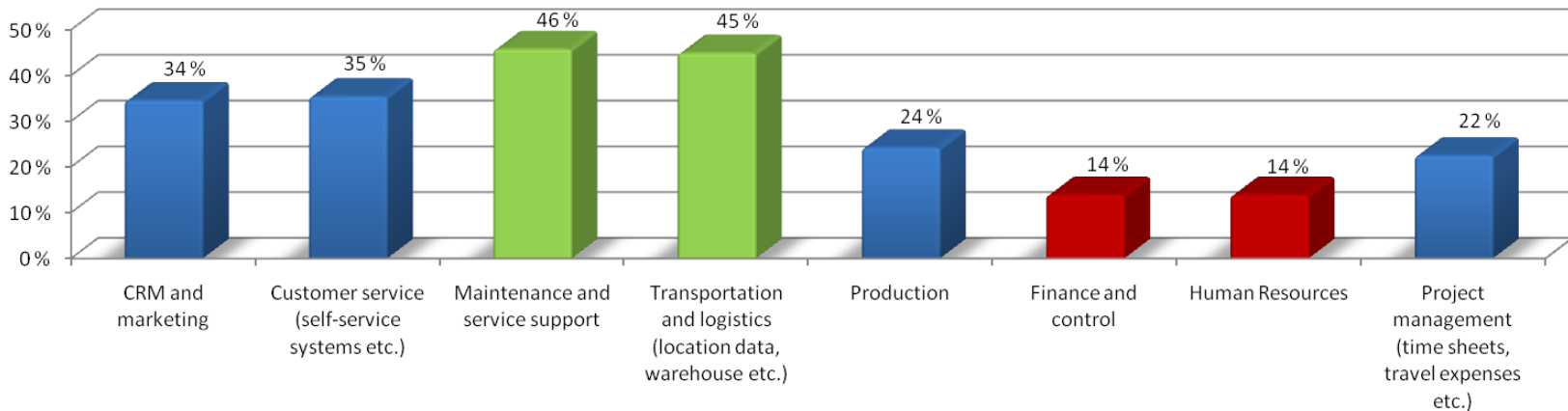
What are the products and services about?



- **Field operations** and **customer interaction** stand out clearly
- Low portion of **white collar mobility** solutions could be explained by heavy international competition
- On average a cluster company provides solutions in 1.6 of these 4 categories

"How would you classify your solutions?"
n=117

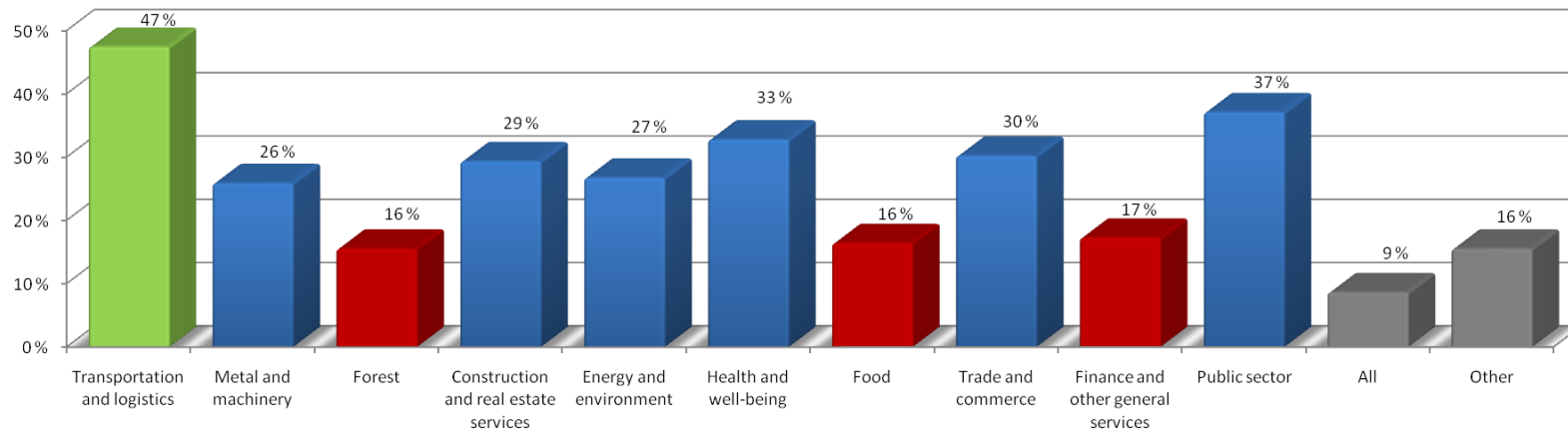
What customer processes do they support?



- Again, **Field operations** and **Customer relationship** related processes employ most companies
- Some **Maintenance** and **Logistics processes** could also be seen as **Production processes**
- There are big growth expectations in **F&C** and **HR processes**
- Typically a company provides solutions to 2 of these 8 processes

"What customer processes are your solutions used in?"
n=116

What industries does the cluster serve?

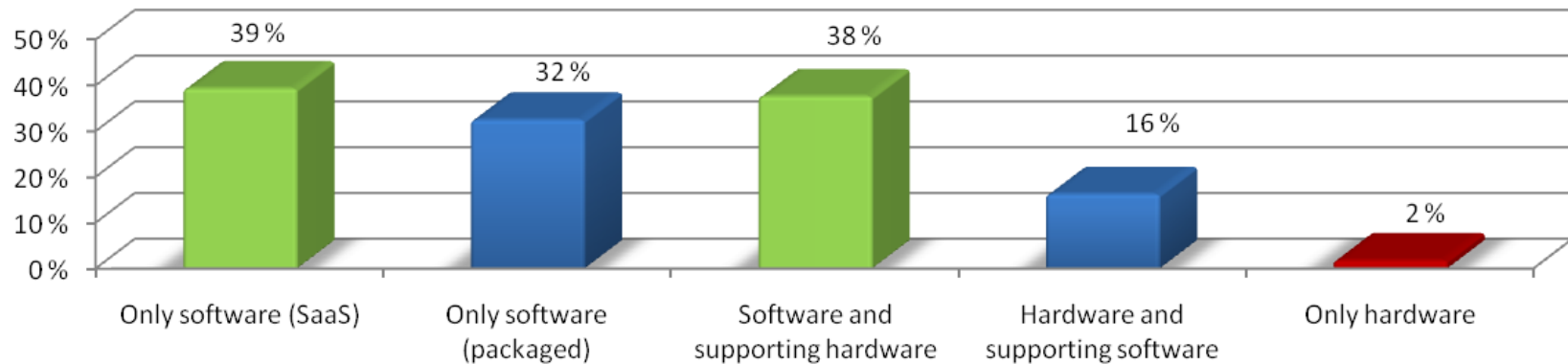


- **Transportation and logistics** industry is the most popular and the **Public sector** is the second most popular
- **Forest** and **Food** industries are mainly served via transportation and logistics processes
- On average a company serves 2.9 of these 10 industries

"What industries your mobile solutions are used in?"

n=116

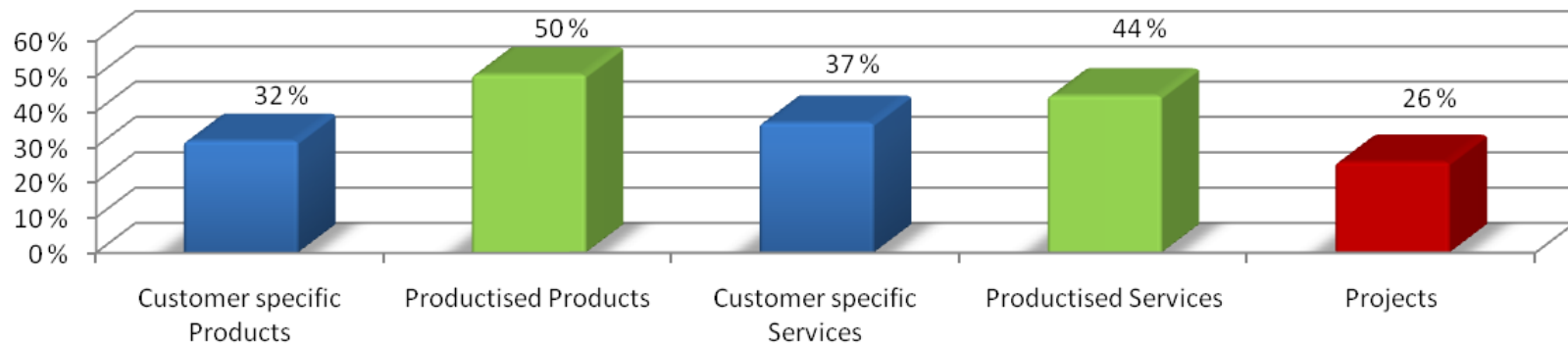
How are the solutions delivered?



- The Software as a Service model is most popular
- Hardware is most important in a supporting role
- On average a company's solution consist of 1.3 of these 5 models

"Our solutions consist of software or hardware?"
n=117

How are the solutions packaged?



- Companies offer equally products (68%) and services (66%)
- Solutions are more often productised (71%) than customised or projects (63%)
- Only 3% sold solely projects
- On average a company offers 1.9 of these 5 models

"Our solutions typically consist of"
n=117

Does it pay to productise?

Productised or customised?	Mean revenue	Mean EBIT	Mean year founded	Responded companies
All services and products customised	1,64M€	106K€	1999	31
Services or products or both productised	1,78M€	96,2K€	2002	83
<i>Difference</i>	+9%	-9%	+3 years	+168%
All products customised	1,73M€	106K€	2000	21
All products productised	1,67M€	48,6K€	2003	43
<i>Difference</i>	-3%	-54%	+3 years	+105%
All services customised	2,58M€	83,1K€	2000	25
All services productised	1,28M€	77K€	2003	34
<i>Difference</i>	-50%	-7%	+3 years	+36%

→ **Young companies productise but don't yet reap the benefits**

Figures from FY2009.

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Characteristics of Finnish Enterprise Mobility Cluster: **Utilised technologies**

- What technologies are being used?
- What devices are being used?



Illustrations: Atheros, stock.xchng, www.flickr.com/photos/viagallen

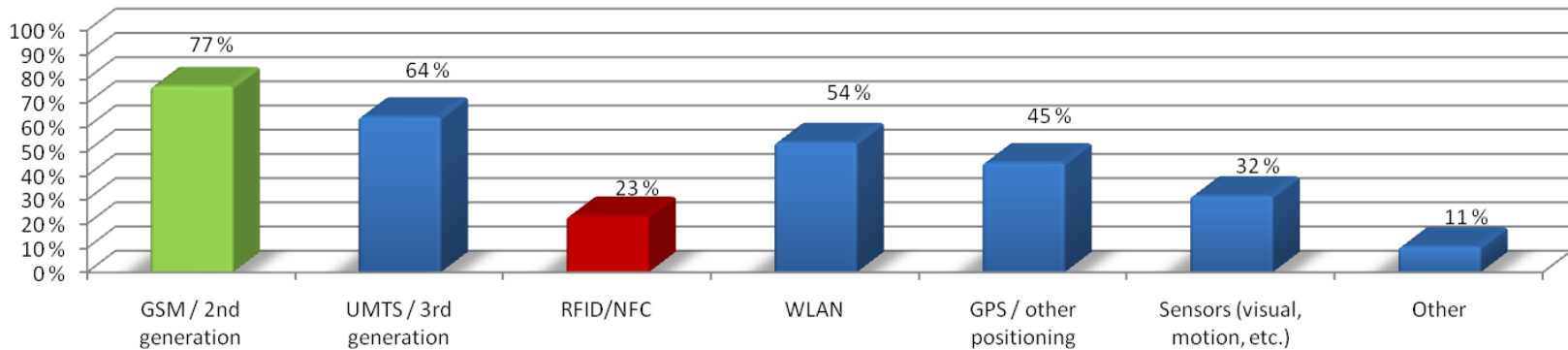
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What technologies are being used?



- SMS and mobile data enabled services explain the high proportion of **GSM** and **3G**
- **WLAN** and **positioning** stand out from the other specialised technologies
- Despite respondent's high involvement in transportation and logistics, **RFID/NFC** is not very often used
- On average a company uses 2.4 of these 6 technologies

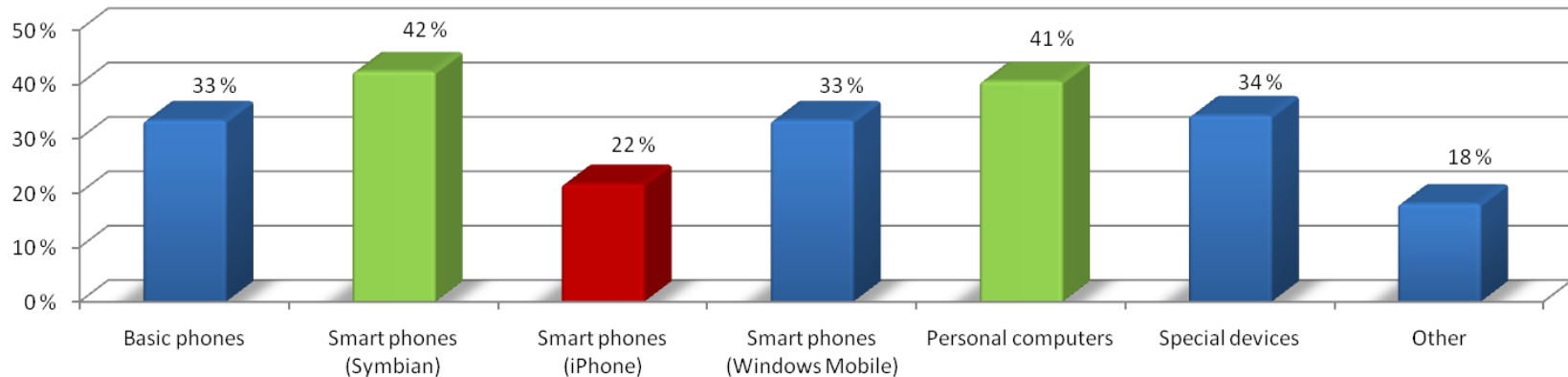
"Our solutions use the following technologies"
n=95

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What devices are being used?



- iPhone stands out as the third largest smartphone platform considering the device's small Finnish user base
- SMS explains the high proportion of basic phones
- The cluster puts 3rd most emphasis on special devices, which can be explained by high industry focus
- On average a company designs solutions to 1.9 of these 6 devices

"Our solutions are designed for the following devices"
n=95

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Finnish Enterprise Mobility Cluster: **Competitive situation**

- Trends
- Current situation
- Business development



Illustrations: stock.xchng



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Competitive situation:

Trends

- Most competition is present in **food** and **transportation and logistics** industry providers
 - All companies have smaller than average market shares
 - Competition has forced companies to alter their pricing or offering
 - Companies have increased their solution portfolio in 2009
- **High growth is expected** within several customer industries
 - Also the target markets in Finance and other general services, Health and well-being, Public sector and Trade and commerce grew the most in 2009
- Companies on average were **well prepared for the recession**
 - Only companies serving the **finance and other general services** industry seem to disagree

Competitive situation:

Current situation on the markets

- It is difficult for us to identify competitors for our firm
- All firms in our market have small market shares
- Competition has forced us to alter our offering or pricing
- The industry is in an early, high growth stage of development
- Our firm was well-prepared for the recession



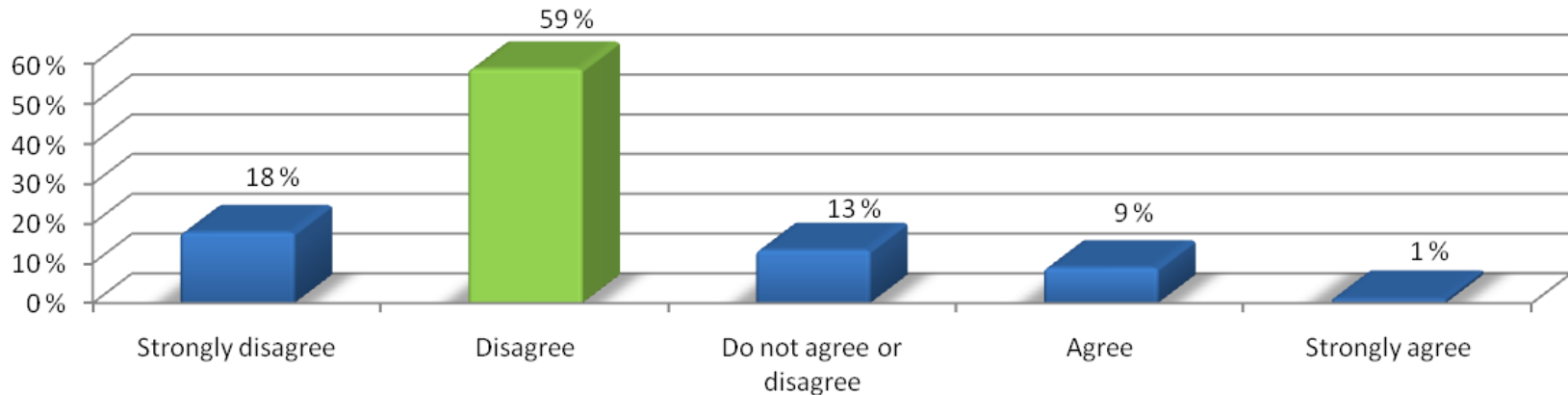
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Are competitors difficult to identify?



- It is slightly more difficult for companies offering solutions to construction or metal industries or to public sector to identify competitors
 - EM Cluster average **2,19***
 - Metal industry average **2,42**
 - Construction industry and public sector average **2,4**

"It is difficult for us to identify competitors for our firm"

n=90

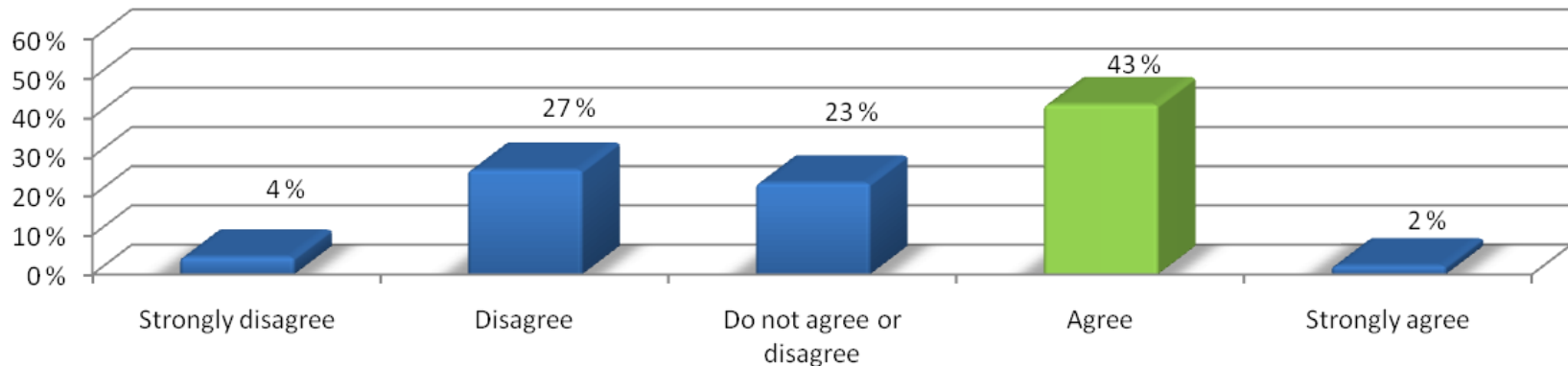
*Scale from strongly disagree (1) to strongly agree (5)

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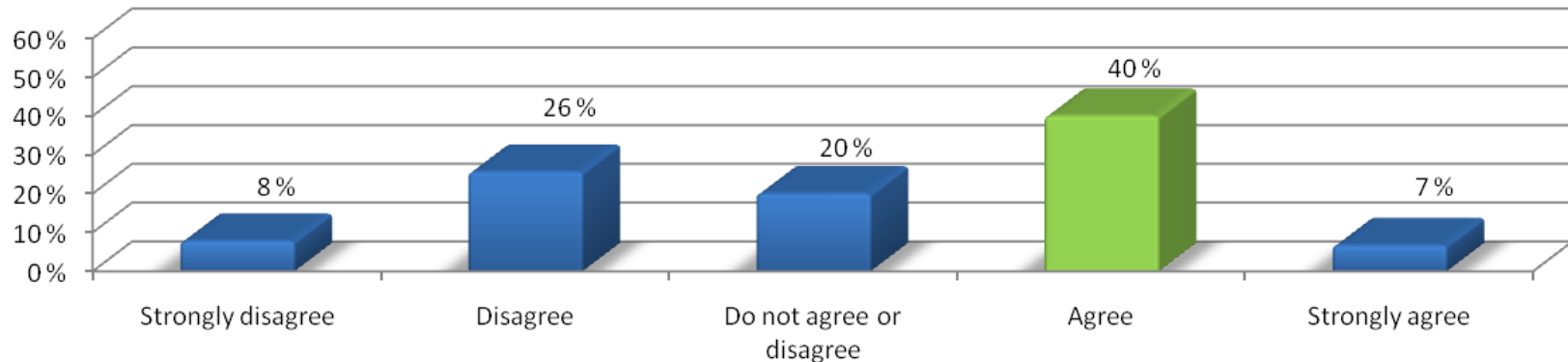
Market shares are commonly small



- Significantly dominating companies cannot be found in the market
- Only companies offering services to Finance and other general services companies seem to disagree
 - EM Cluster average **3,09**
 - Finance and other general services average **2,69**
- Food industry and transportation and logistics seem more likely to agree: Averages **3,31** and **3,21**, respectively

"All firms in our market have small market shares"
n=90

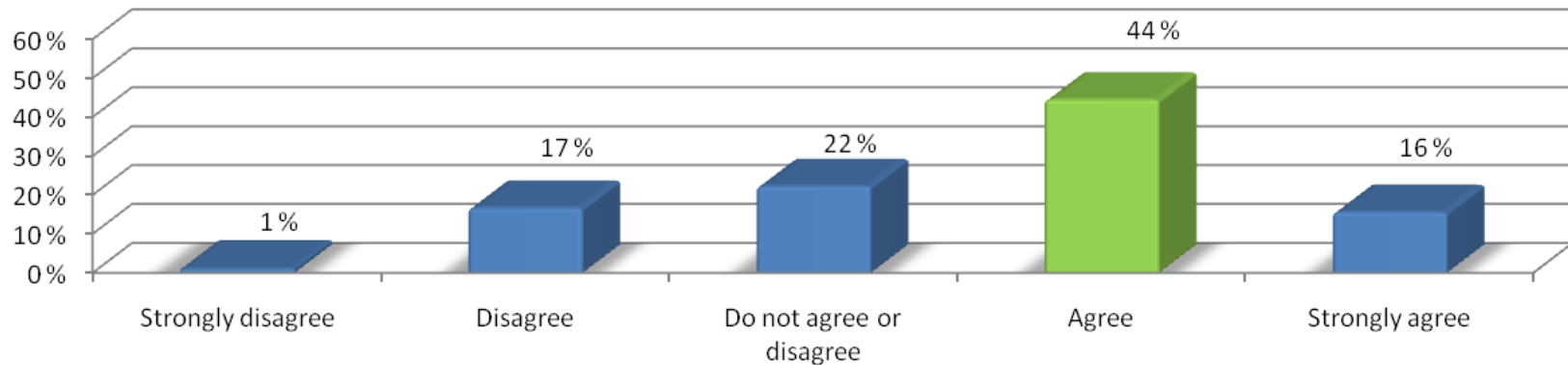
Competition forces to re-think strategies



- Competition has forced almost half of companies to alter their offering or pricing
- Most competition exists in transportation and logistics as well as in the food industry (see previous slide)
 - EM Cluster average **3,06**
 - Transportation and logistics and food industry **3,3**
 - Energy industry providers seem to agree too, average **3,44**

“Competition has forced us to alter our offering or pricing”
n=90

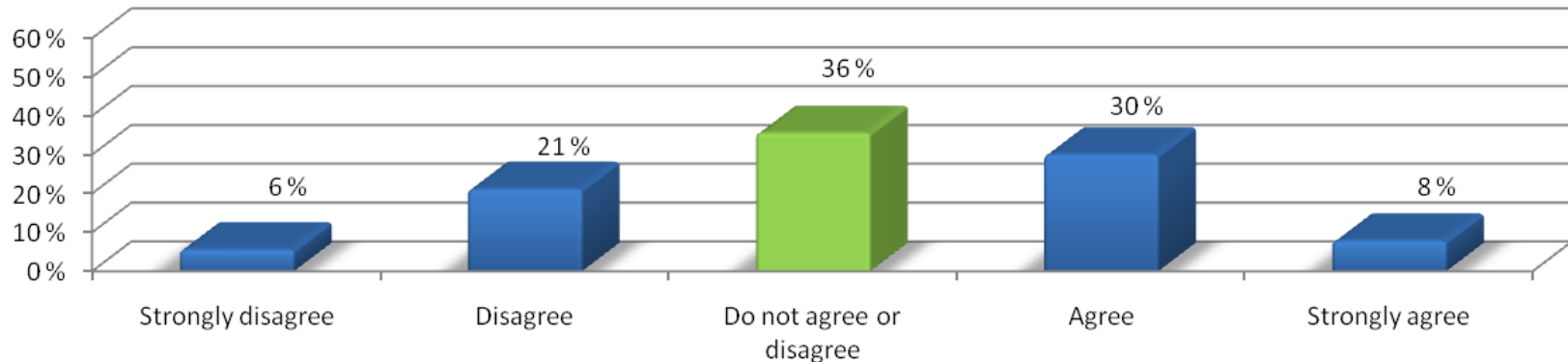
This new cluster will grow rapidly



- Most of the sectors are expecting high growth in future
 - EM Cluster average **3,56**
 - Finance **3,88**, health and well-being **3,83**, public sector **3,74** and trade and commerce **3,74**
- Metal and food industries are a little more reluctant to agree
 - Averages **3,27** and **3,38**, respectively

“The industry is in an early, high growth stage of development”
n=90

The cluster was prepared for the recession



- Companies providing solutions to finance and other general services industry were hit hardest by the recession
 - EM Cluster average **3,13**
 - Finance and other general services average **2,88**
- Most prepared were trade and commerce (**3,59**) and forest industries (**3,41**)

"Our firm was well-prepared for the recession"
n=90

Competitive situation:

Business development

- The size of our target market
- Our sales and marketing expenses
- Our R&D expenses
- The number of our employees
- Our solution portfolio



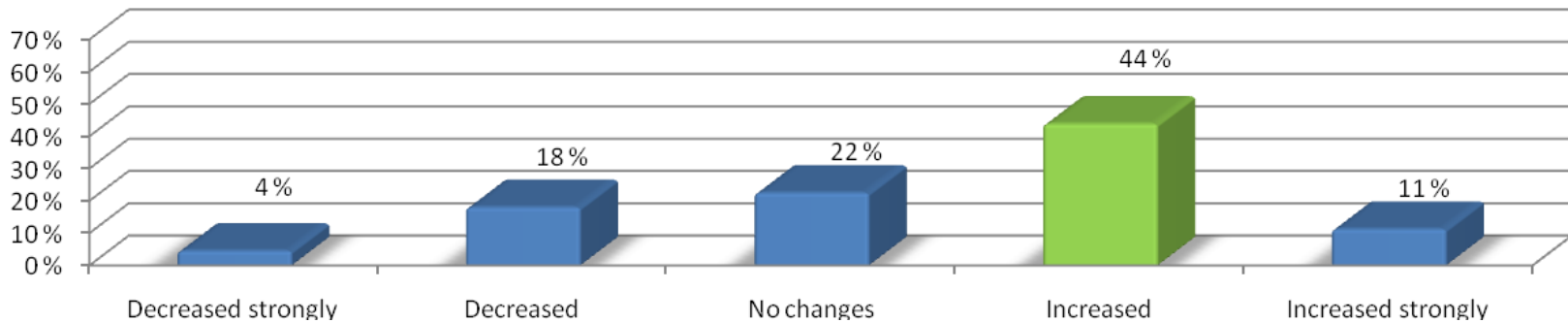
Illustrations: stock.xchng

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The size of target markets increased



- The markets of more than half of the companies increased
- Size of target market correlates strongly with high growth industries presented earlier
 - EM Cluster average **3,35**
 - Industries expecting above average growth are finance (**3,81**), health and well-being (**3,77**), public sector (**3,69**), forest (**3,69**), energy (**3,64**) and trade and commerce (**3,58**)

"The size of our target market" (during last year)

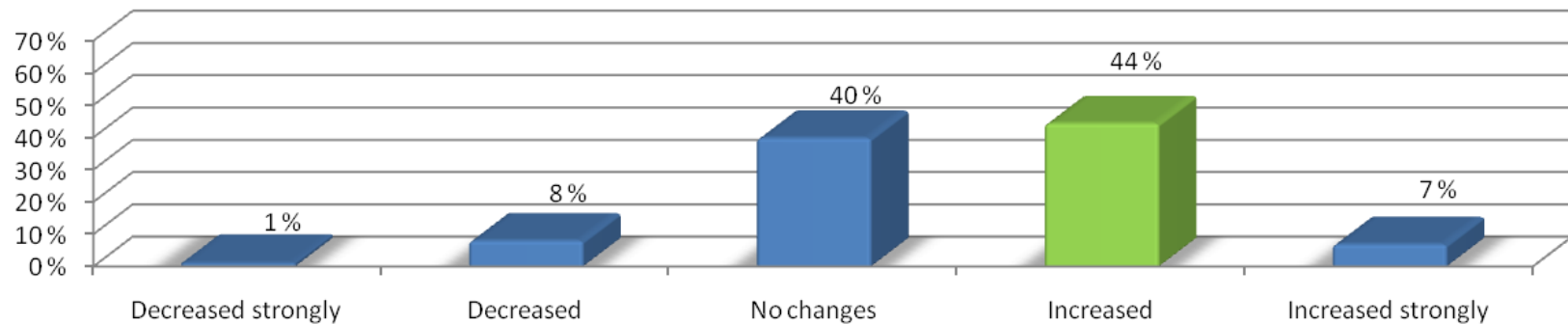
n=89 *Scale from decreased strongly (1) to increased strongly (5)

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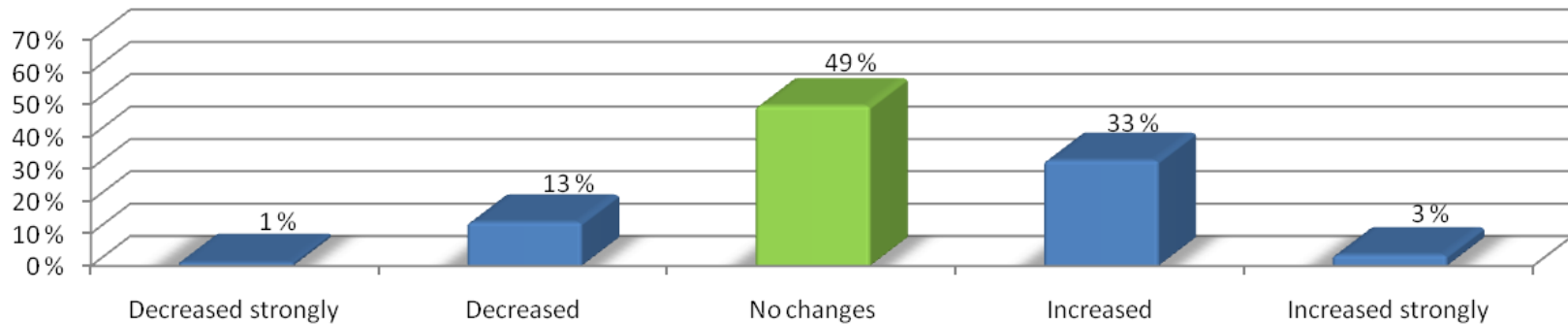
Sales and marketing expenses increased



- Companies dealing with finance and trade industries were most likely to increase their sales and marketing expenses
 - EM Cluster average **3,46**
 - Finance average **3,81**, trade and commerce average **3,65**

"Our sales and marketing expenses" (during last year)
n=88

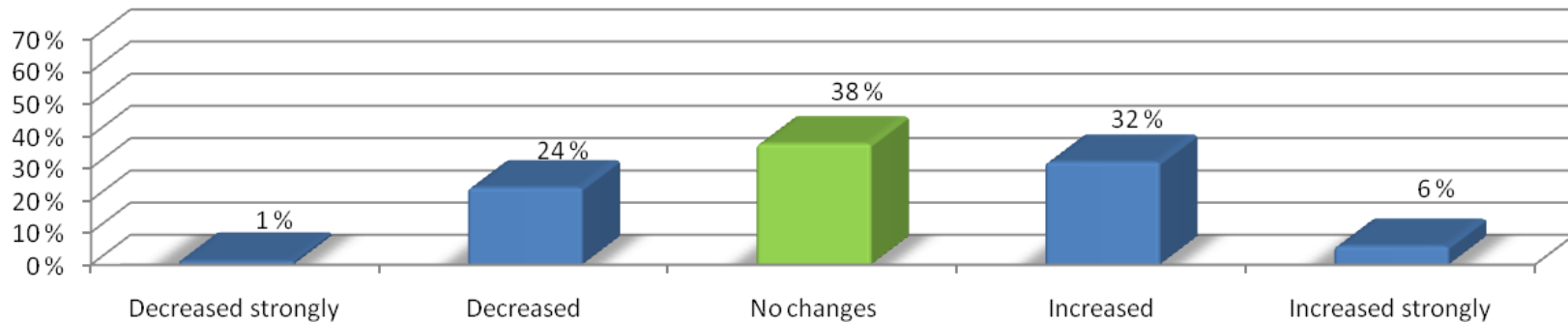
R&D expenses slightly increased



- No significant differences between industries
 - Finance, trade and commerce and food industries are slightly below the EM Cluster average **3,24**
 - Forest and metal industries are slightly above average
 - See the **R&D** slide from **Key Figures** section for supporting data

"Our R&D expenses" (during last year)
n=89

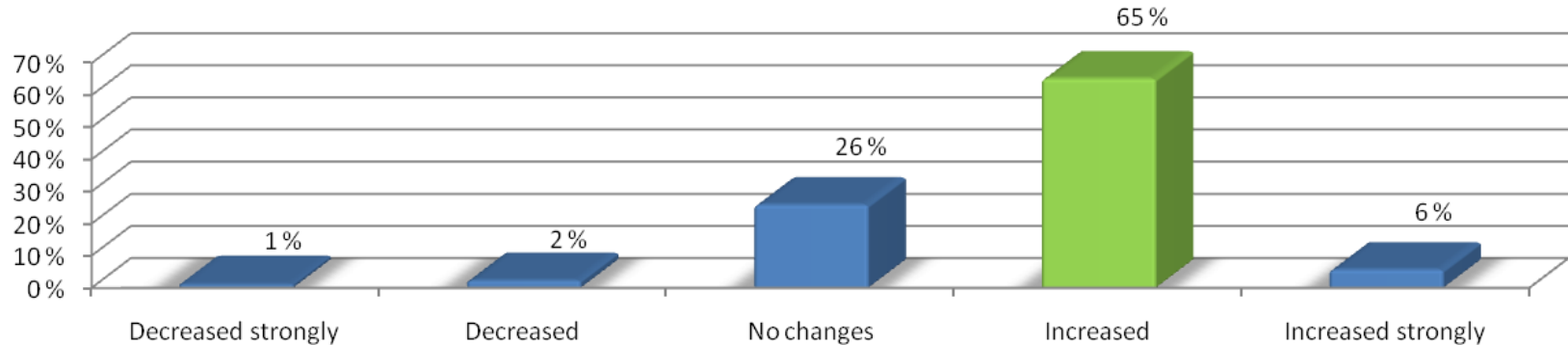
The number of employees was maintained



- Finance and forest industries scored the lowest average among different clusters – this is clearly caused by the recession
 - EM Cluster average **3,17**
 - Finance and other general services average **3**, forest industry average **3**
- See the **Personnel** slide from **Key Figures** section for supporting data

"The number of our employees" (during last year)
n=88

Solution portfolios increased widely



- The highest increase were seen in the food industry serving companies that has most competition, too
 - EM cluster average **3,71**
 - Food industry average **3,94** can be seen as another indicator for the high level competition in the market

“Our solution portfolio“ (during last year)
n=89

Finnish Enterprise Mobility Cluster:

Customer segments

- What customer processes does the cluster support?
- Sub-clusters identified by customer process
- What customer industries are served?
- Comparison of customer industries



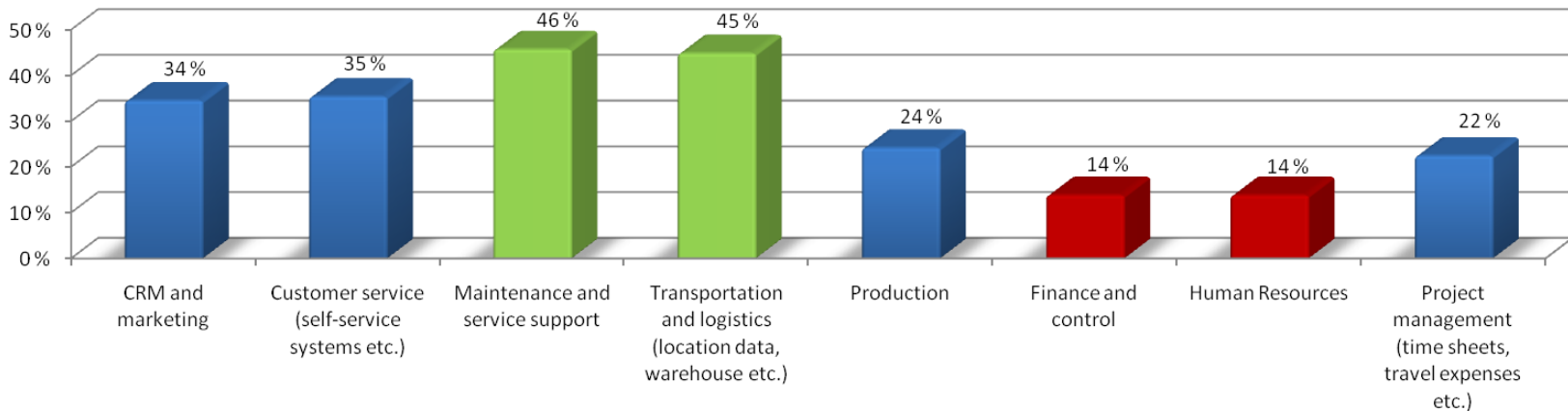
Illustrations: stock.xchng

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What customer processes do they support?



- **Field operations** and **Customer relationship** related processes employ most companies
- Some **Maintenance** and **Logistics processes** could also be seen as **Production processes**
- There are big growth expectations in **F&C** and **HR processes**
- Typically a company provides solutions to 2 of these 8 processes

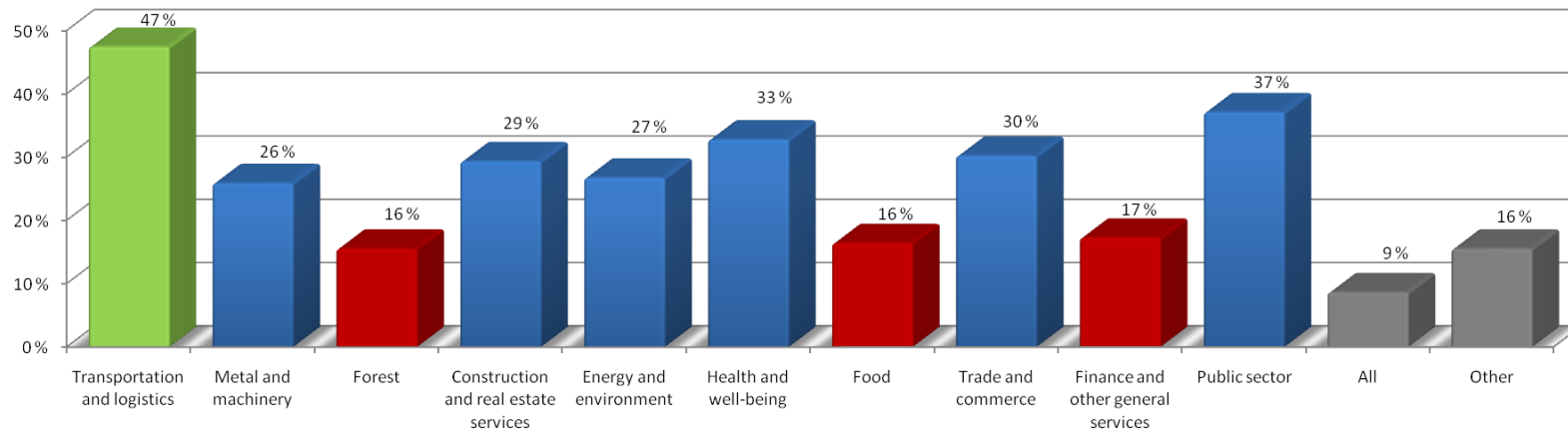
"What customer processes are your solutions used in?"
n=116

Sub-clusters identified by customer process



- These sub-clusters were identified via strong correlations between responses to two or more customer processes

What industries does the cluster serve?



- **Transportation and logistics** industry is the most popular and the **Public sector** is the second most popular
- **Forest** and **Food** industries are mainly served via transportation and logistics processes
- On average a company serves 2.9 of these 10 industries

"What industries your mobile solutions are used in?"

n=116

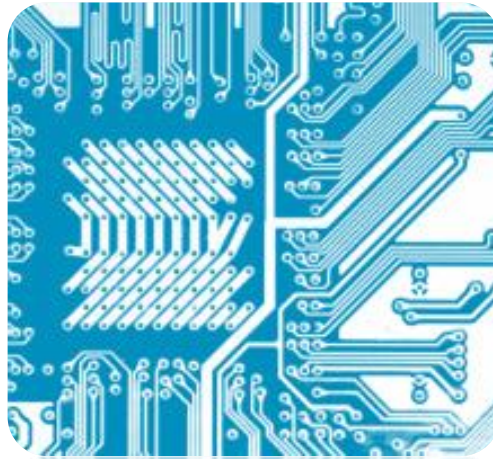
Comparison of customer industries

Measure	Top performers serve these customer industries	Lowest performers serve these customer industries
Revenue	Highest: <i>Forest, metal and machinery</i>	Lowest: Health and well-being, finance and other general services
Personnel	Most: <i>Metal and machinery, forest</i>	Least: Health and well-being, finance and other general services
Growth	Highest expectations: Health and well-being, finance and other general services	Lowest expectations: <i>Transportation and logistics, forest</i>
EBIT %	Most profitable: <i>Food, trade and commerce</i>	Least profitable: Health and well-being, finance and other general services
R&D %	Most R&D: Health and well-being, finance and other general services	Least R&D: <i>Food, forest</i>
Age	Oldest: <i>Metal and machinery, construction and real-estate, forest</i>	Youngest: <i>Energy and environment, finance and other general services</i>

- Companies serving **health and well-being** and **finance** are clearly in a high growth stage

Operations of Finnish Enterprise Mobility Cluster: **Research and development**

- How much companies are investing in R&D?
- How do companies do R&D?



Illustrations: stock.xchng

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R&D investments are high and will increase

R&D share of revenue	Fiscal year 2008	Fiscal year 2009	Fiscal year 2010
Mean €	0,26 M€	0,28 M€	0,40 M€
Mean %	13,7 %	15,8 %	17,2 %
Median €	0,12 M€	0,13 M€	0,21 M€
Median %	20,0 %	26,0 %	21,0 %

- Companies throughout the cluster plan to increase R&D in 2010
- They spend more on R&D than rest of the technology industry
 - Software industry*: Mean **16,6%** / Median **10,0%**
 - Electronics and electrotechnical industry**: Mean **10,0%**
 - Information technology sector**: Mean **6,0%**

* National Software Industry Survey 2009

** Technology Industry in Finland 2008

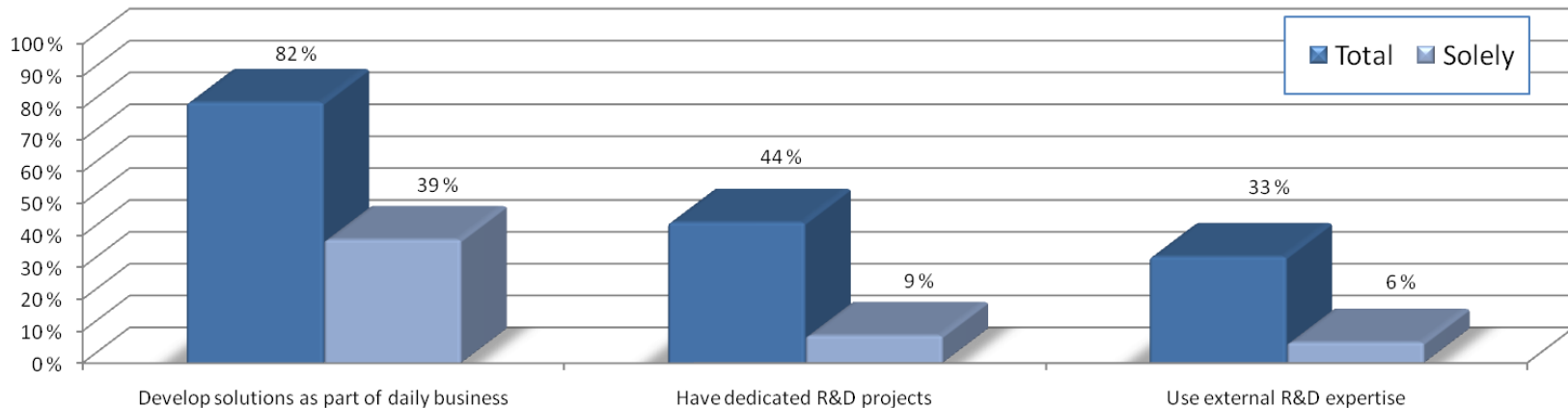
"Please estimate your R&D expenses (% of revenue) in last, current and next fiscal year" n= 77 / 80 / 81 SD= 0,4M / 0,5M / 0,8M

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Tekes

How do companies do R&D?



- Most companies develop solutions as they run their daily business
 - For 39% of the companies this is the only way for doing R&D
- 44% of companies have dedicated R&D staff
 - Their average R&D staff size is 4 people
- 33% of companies use external R&D expertise
 - Only a quarter of outsourced R&D is done outside of Finland

"Your R&D activities" & "What percentage your subcontracted R&D is done: In Finland/in other countries" n=93 and N=27, respectively

Operations of Finnish Enterprise Mobility Cluster: **Internationalisation**

- Did companies have revenue from abroad?
- Where does the revenue come from?



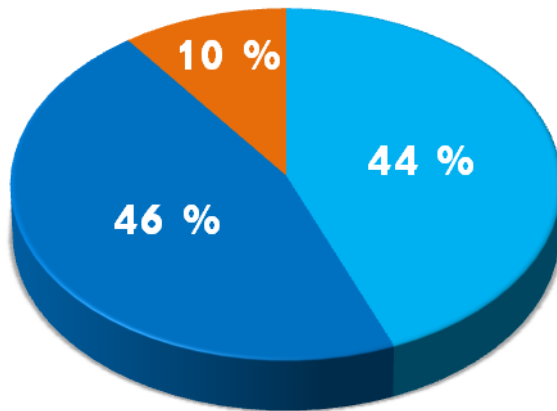
Illustrations: stock.xchng

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Tekes

Did companies have revenue from abroad?



■ Yes

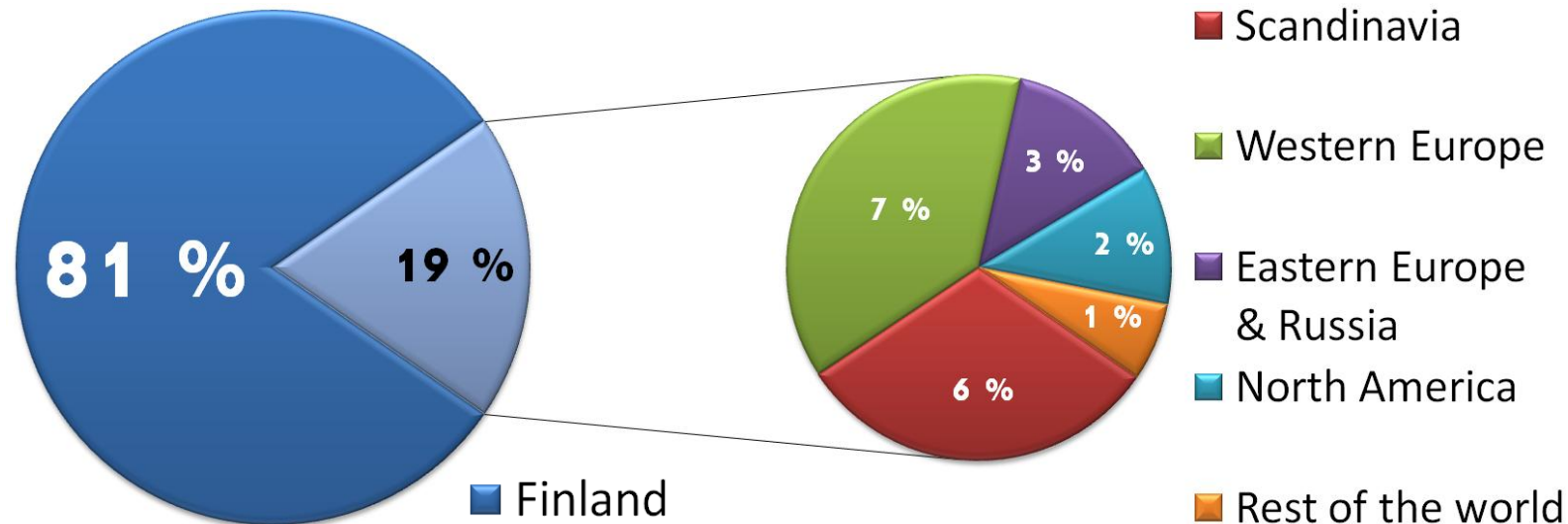
■ No, but internationalisation has been considered

■ No, and internationalisation is not currently relevant

	Key figures of companies who had sales revenue from abroad	Key figures of companies who had considered internationalisation	Key figures of companies to whom international business was not relevant
Mean revenue	2,62 M€	0,80 M€	2,1 M€
Median revenue	0,71 M€	0,30 M€	1,50 M€
Mean founding year	1998	2003	2003
Median founding year	2000	2005	2002
Conclusion	Well established position in the market	The smallest ones in the cluster	Doing well in Finland

"Did your firm have sales revenue from abroad during last fiscal year?"
n=93

Where does the revenue come from?



- Finland is by far the the most important source of revenue
- Western Europe, Scandinavia and Eastern Europe with Russia are the main areas for export

“How is your revenue distributed between the following geographic areas?” n=40

Operations of Finnish Enterprise Mobility Cluster: **Financing**

- What are the sources of financing?
- What was and what will be the need for external financing?



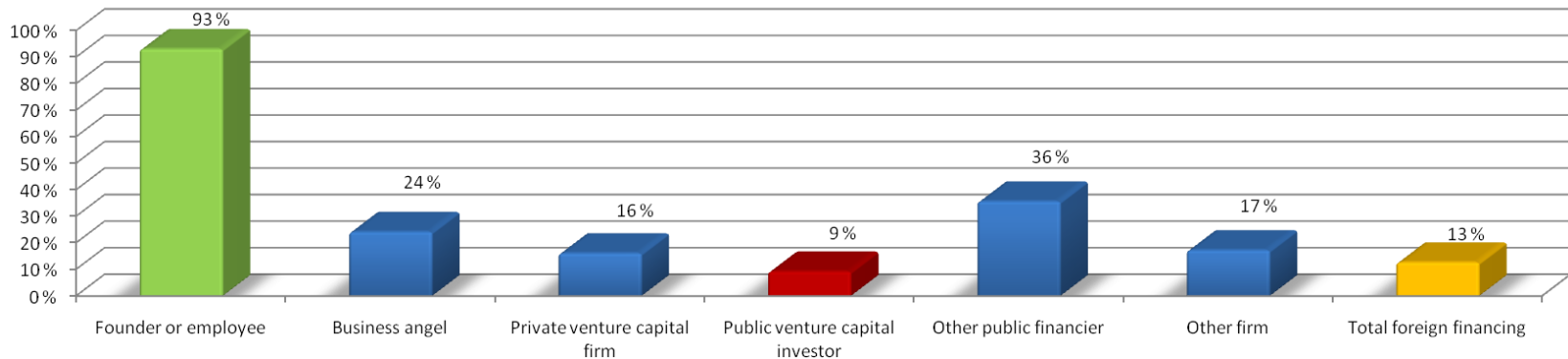
Illustrations: stock.xchng

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Tekes

What are the funding sources?



- Almost all companies are financed by their Finnish founder or employee
- Tekes (or equivalent) is the second largest source of funding for the cluster
- In most cases the foreign financing comes from a founder or an employee

"Which of the following parties currently have a financial investment in your firm? (Choose all that apply.) "

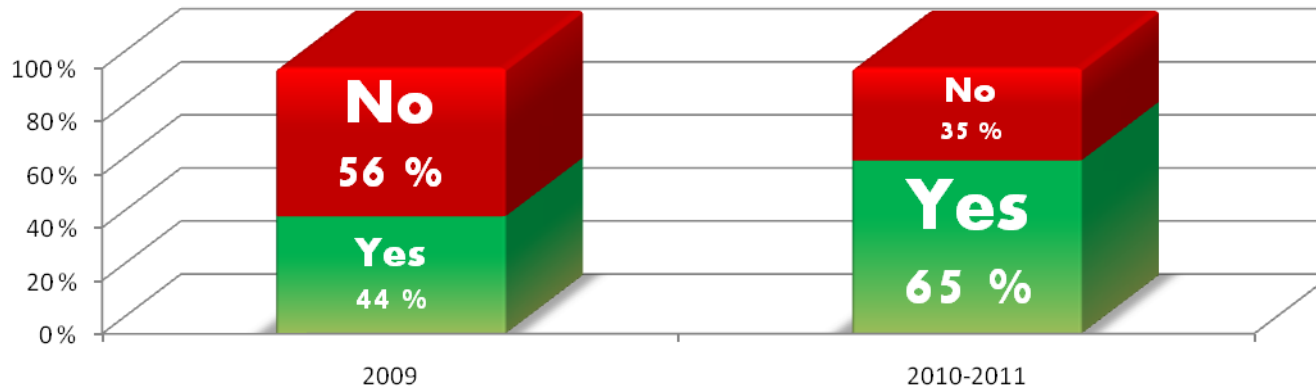
n=87

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Tekes

Are the companies financed externally?



- More than half of companies did not seek external financing in 2009
- Need will grow remarkably within the next two years
 - 98% of companies which sought external financing in 2009 are seeking it in the next two years, too
 - 45% of companies which did not seek external financing in 2009 are seeking it in the next two years

"Your company's external financing (We have sought/We will seek)"
n=90

Summary

- Finnish Enterprise Mobility Cluster consists of many small players serving a wide set of industries and customer processes
- Recession had only a small effect on the cluster and rapid growth is expected in 2010
- Need for funding will also increase
- The cluster invests relatively more R&D than the rest of the technology industry
- Transportation and logistics is the leading application area for wireless and mobile technologies, but the growth is slowing
- Finance and other general services have largest growth expectations
- Productisation of offerings is still a work in progress

Conclusions

- Companies on the more saturated markets (e.g. Transportation & logistics) should seek international expansion or widen their offering to serve underserved markets
- Productisation and internationalisation projects should be launched and supported by public funding especially in the high expectation markets (e.g. Healthcare & well-being)
- When investing to this cluster, the internationalisation eagerness and competitiveness of the company should be carefully inspected
- There will be lots of interesting domestic M&A possibilities as the young cluster consolidates

Contact information

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