



The Swiss Medical Technology Industry 2008 Survey

medical cluster 

helbling

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Preface and acknowledgments

In 2005, Patrick Dümmler published his PhD thesis on the Swiss medical technology industry (SMTI). One year later, together with Beatus Hofrichter, he published at Helbling Management Consulting an update describing the macro-economic issues and market framework of this fast-developing industry. Since then, the SMTI has grown remarkably, with many new businesses and start-up companies, increased production capacity, IPOs, internationalization of suppliers, new governmental R&D programs and support from larger economic regions.

In 2008, Medical Cluster, Helbling and Roland Berger Strategy Consultants designed a study investigating the current state of the SMTI. This study aims to shed light on the microeconomic structure, size and opportunities of the industry, as well as the challenges facing it. As a basis for the study, a four-page questionnaire was sent to all medical technology companies in Switzerland in May/June 2008. Almost 300 companies responded, allowing a comprehensive and reliable database to be formed.

The questionnaire, whose results are presented here, provides facts and figures about the SMTI. It helps us understand what action is necessary to ensure a prosperous future for the industry. The focus is on Switzerland as a research and production site for medical technology; we do not look at Switzerland or other countries as a market for medical technology devices.

The authors would like to thank the companies that participated anonymously in the survey, the Innovation Promotion Agency CTI which has supported this survey, and our colleagues at Medical Cluster, Helbling and Roland Berger Strategy Consultants for their help and feedback.

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Management summary



Management summary (1/2)

The three partners Medical Cluster, Helbling and Roland Berger Strategy Consultants designed a study in 2008, investigating the current state of the Swiss medical technology industry (SMTI). This study analyses the microeconomic structure of the industry, company sizes, challenges and activities with a four-page questionnaire. Almost 300 companies responded, allowing a comprehensive and reliable understanding of this industry.

Industry size

The SMTI generated about CHF 20.3 billion turnover in 2007. Thus, the industry continues to play a significant role in the Swiss industry; 45 % of the industry's turnover derive from manufacturers. The SMTI has significant scale compared to EU countries – it is the leading industry in relative terms of workforce together with Ireland – and some 700 manufacturers and suppliers form the backbone of the industry. Export ratios have been more or less stable over the last few years, being at 66% of the turnover at present.

Industry growth

Industry managers expect good or very good growth prospects (average of study sample is 6% p.a.; industry experts are expecting 8-10% growth p.a.) in the coming two to three years. This is above the Swiss industry average; which is also supported to some extent by the high expectations regarding future earnings of the bio- and medical technology stock market index. Strongest growth rates are expected to be generated again by manufacturers, with an average of 8% p.a.

Company structure

In this study, manufacturers, traders and distributors showed that their product range is at least 80% of the turnover devoted to the medical technology industry. Contrary to this, only 39% of the suppliers' turnover serve the medical technology industry. These companies generate their major revenue from other sectors, such as watches, optical instruments, machine construction, automotive and electronics by multiplying the same technology.

Management summary (2/2)

Workforce

The SMTI employs an estimated 45,000 people, more than 50% of them are working in manufacturing companies. The survey identified a significant increase in the total workforce over the last two years, with an annual growth rate of approximately 13% since 2005. The industry base is highly fragmented – over 80% of companies employ less than 50 people. Over the last few years, many new businesses and start-ups have been created. These companies contribute substantially to the growth in the industry, thanks to their innovation.

R&D

Manufacturers spend an average of 12% of their turnover on R&D; whereas suppliers spend only 5%. This level of R&D spending indicates that the SMTI is a high-tech industry. Some 16% of the industry's workforce is employed in R&D functions.

57% of all R&D projects are conducted in collaboration with industry partners or academic institutions. Companies conduct a large number of smaller R&D projects; 64% of the projects have budgets below CHF 250,000.

Manufacturers with a R&D spending ratio of 15% expect a strong business growth of over 10% p.a. Contrary to this, companies with a R&D spending of 5% expect no growth.

Major challenges

The survey identified that the availability of skilled employees and access to know-how are the major challenges faced by industry participants. These two challenges count each for over 80% of the survey's answers. More than 60% of the answers indicated that the fear of pricing pressure, increasing regulatory requirements and cost pressure are also important challenges.

Strategic actions

Although the challenges are quite homogeneous for all sizes of businesses, companies are hoping to overcome the above mentioned challenges by different activities: whereas large and small-sized companies will mainly strengthen their product innovation, medium-sized and micro companies will focus on optimizing marketing activities.



A. Industry framework



Understanding the industry framework means knowing the interfaces, value chain and growth factors

1 INTERFACES AND VALUE CHAIN

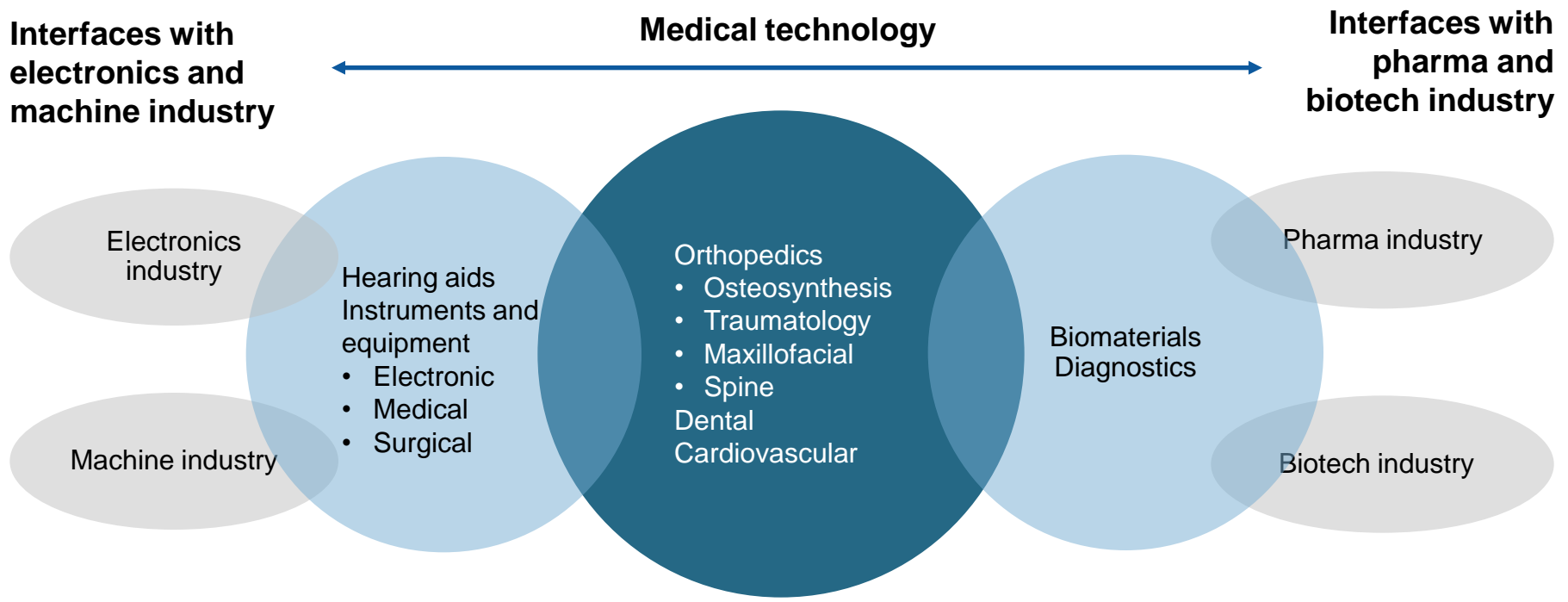
- What are the interfaces between the medical technology industry and other industries?
- What are the steps in the value chain and who are the relevant actors?

**Industry
framework**

2 GROWTH FACTORS

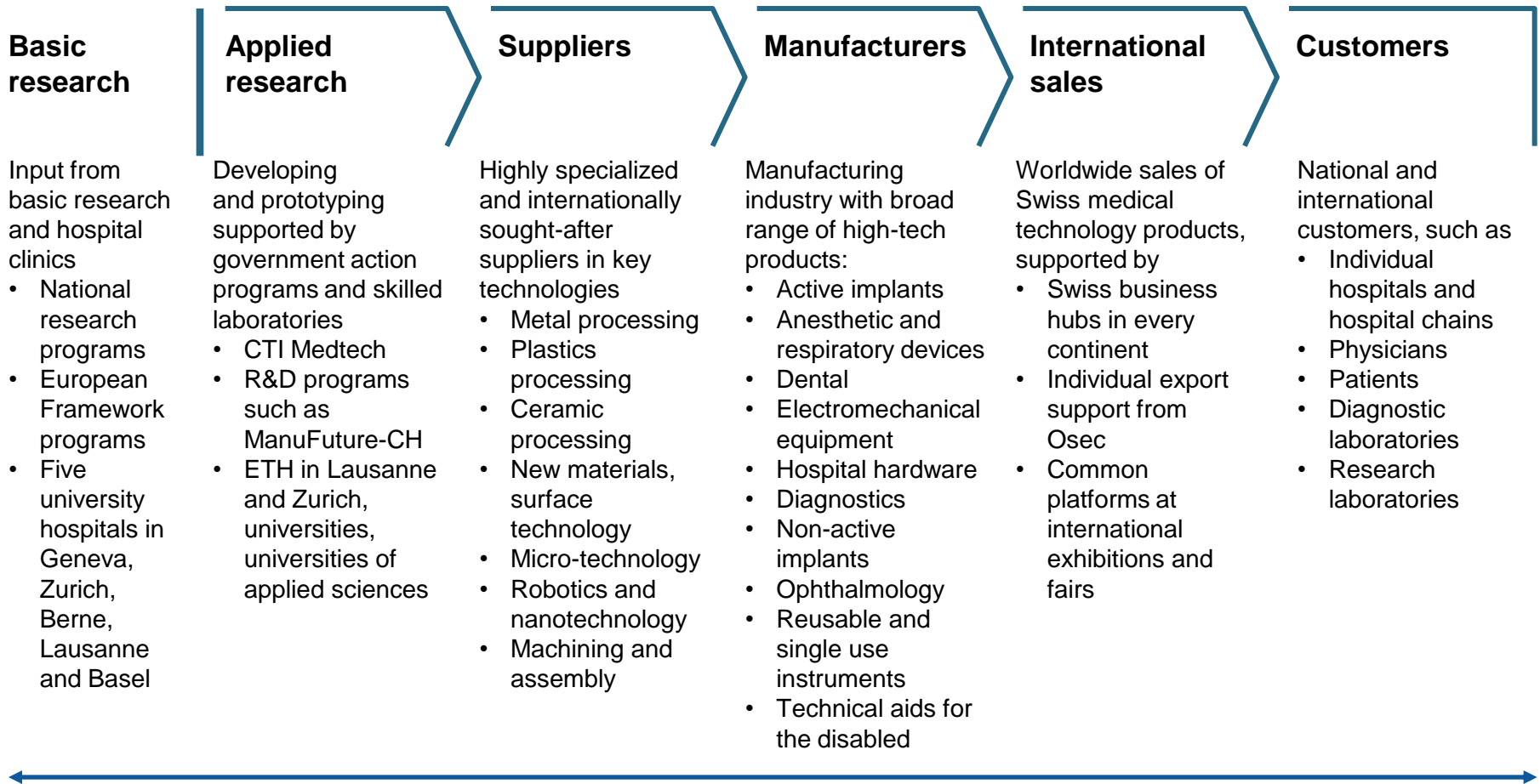
- What is influencing the growth of the medical technology industry?
- What is the market expectation compared to other industries?

The medical technology industry has interfaces with many traditional industries and is truly interdisciplinary



What is medical technology?
Medical technology includes non-metabolic products, instruments and equipment that serve diagnostic purposes or improve general well-being, life expectancy or the quality of life

The SMTI value chain is well developed and highly cross-institutional



Processes supported by the Medical Cluster, university transfer offices, Osec and Swiss Medtech

The growth of the SMTI depends on socio-economic factors and technological development

Technology and local issues/trends

- Increasing combination of products, e.g. medical device plus bio/pharma product
- Miniaturization of products, e.g. through nanotechnology
- Shift of technology to patients
- Establishing/securing collaborations and/or partnerships for funding
- Maintaining the economic attractiveness of Switzerland and the high level of expertise (e.g. in research, education)

Market issues/trends

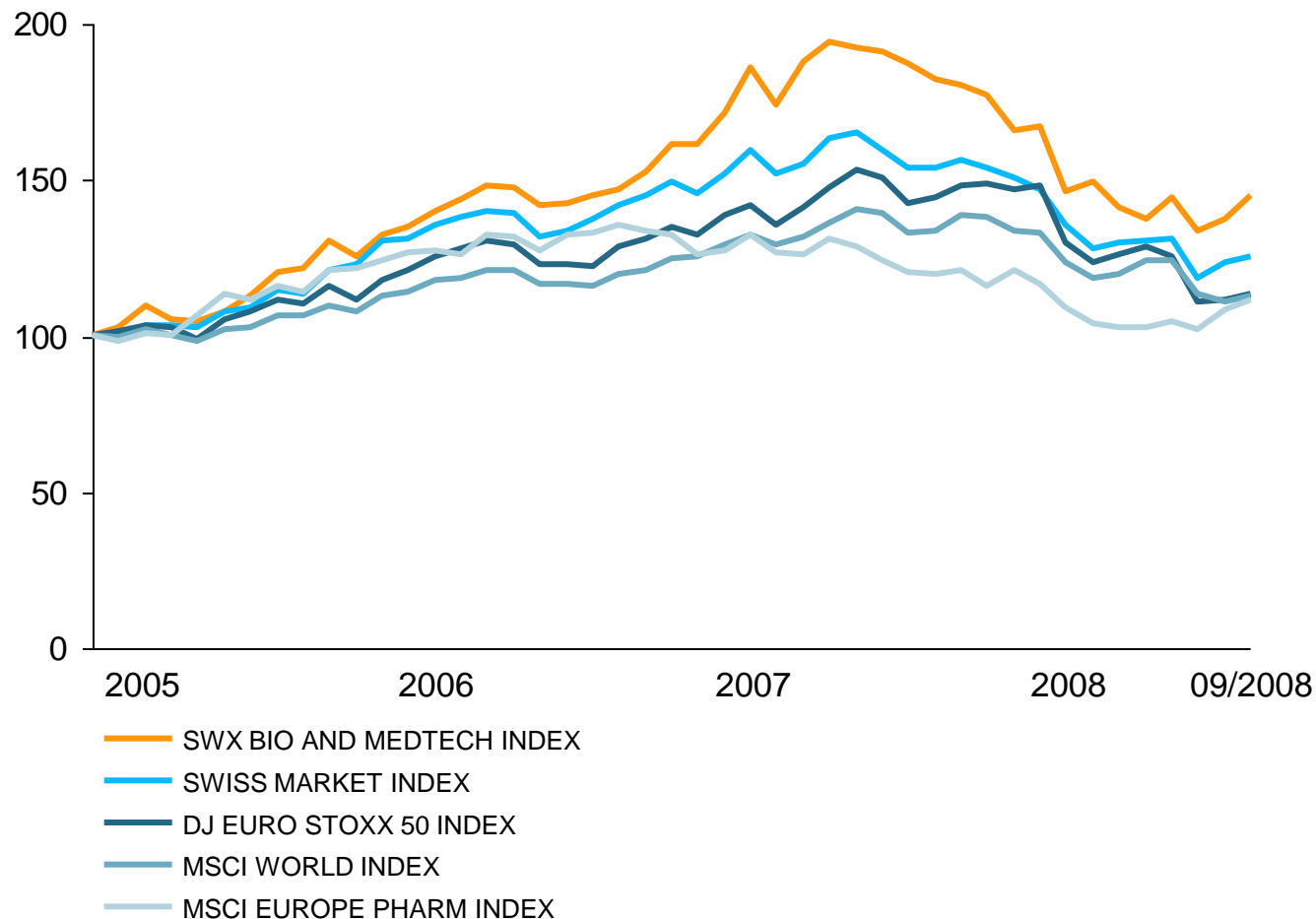
- Socio-economic factors
 - Increasing numbers of people aged 64+
 - Unhealthy lifestyles
 - Greater spending on health/wellness, e.g. patients' needs
- Growing focus on patient value, i.e. personalized medicine
- Greater economic importance of developing countries and their increasing demand

Growth of the SMTI

External forces

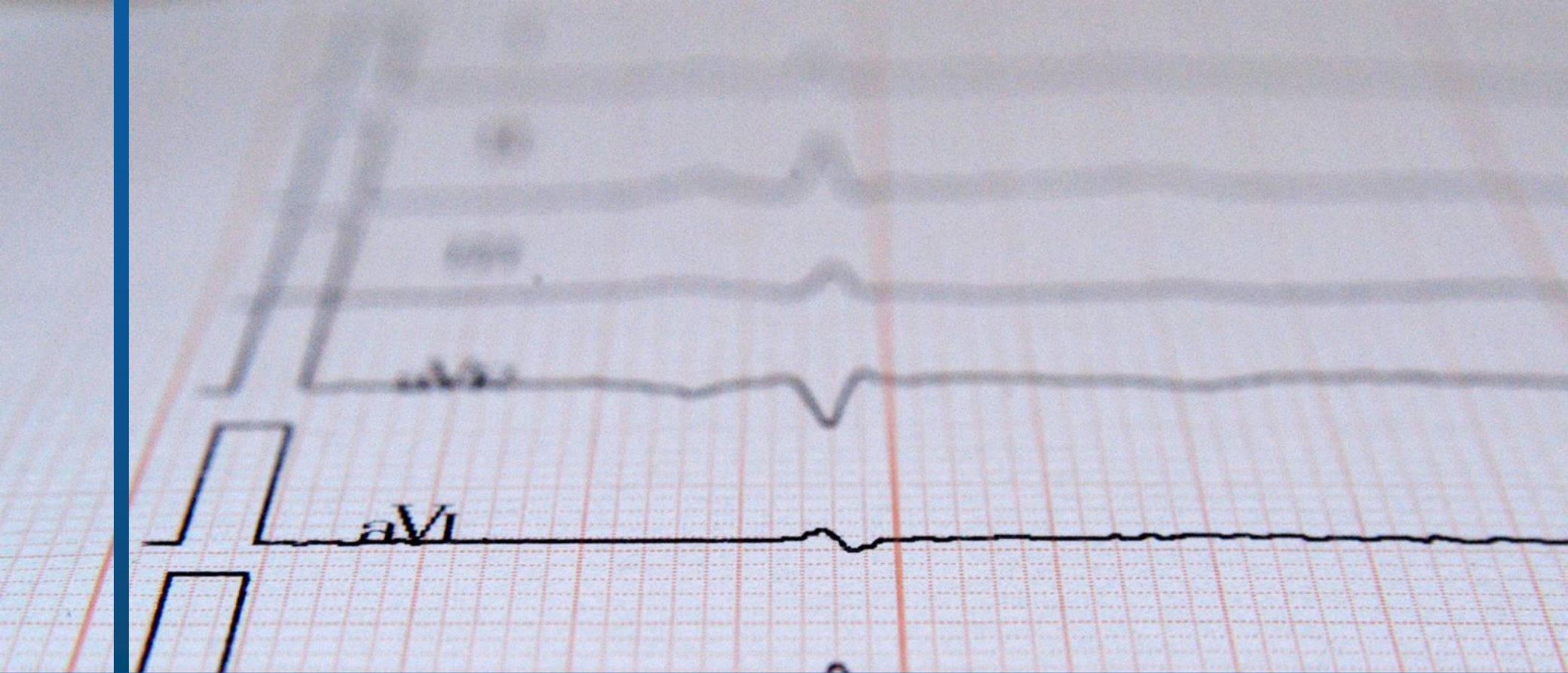
- Increasing regulatory requirements and harmonization, documentation of product quality and safety; ensuring seamless data traceability, i.e. patient/treatment records
- Pressure to decrease costs, changes in reimbursement rules
- Growing international competition and substitute products from Russia, India and China

However, positive growth factors dominate overall – stock-market expectations are higher than for other industries



- Overall, the bio- and medical technology index performed better than many benchmark indexes¹⁾
- This reflects high expectations regarding future earnings in these two industries
- Even during the recent downturn, the bio- and medical technology index stayed above its benchmarks

1) Rebased, January 1, 2005 = 100



B. SMTI key indicators



SMTI key indicators focus on cluster, actors, industry size and employment data

1 CLUSTER AND ACTORS

- What is the economic significance of the medical technology industry for Switzerland compared to other countries?
- Where are SMTI companies located?
- Who are the relevant actors (organizations and companies)?

2 INDUSTRY SIZE

- How is the industry structured in terms of turnover?
- What is the total estimated turnover of the SMTI?
- What share of companies' total turnover is actually earned in the medical technology industry?
- What share of turnover is generated by exports?
- What is the average turnover of medical technology companies?

SMTI key indicators

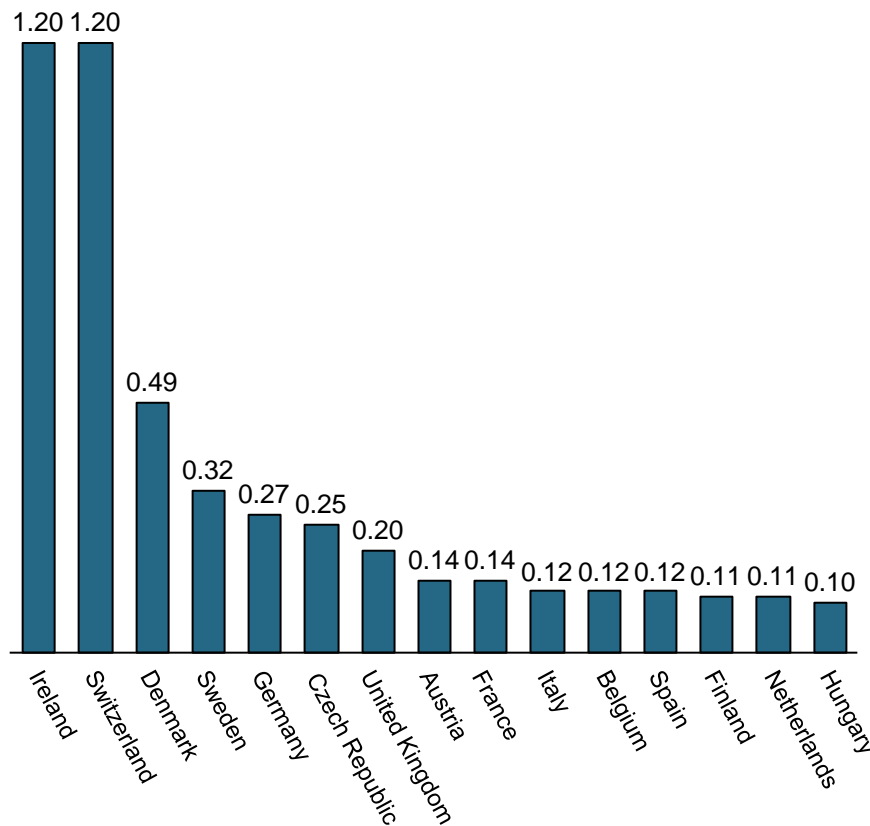
3 EMPLOYMENT

- In which sections of the industry do most people work?
- What is the average turnover per employee?
- What was the growth in employees over the last two years?

The medical technology industry continues to play a significant role in Switzerland compared to other European countries

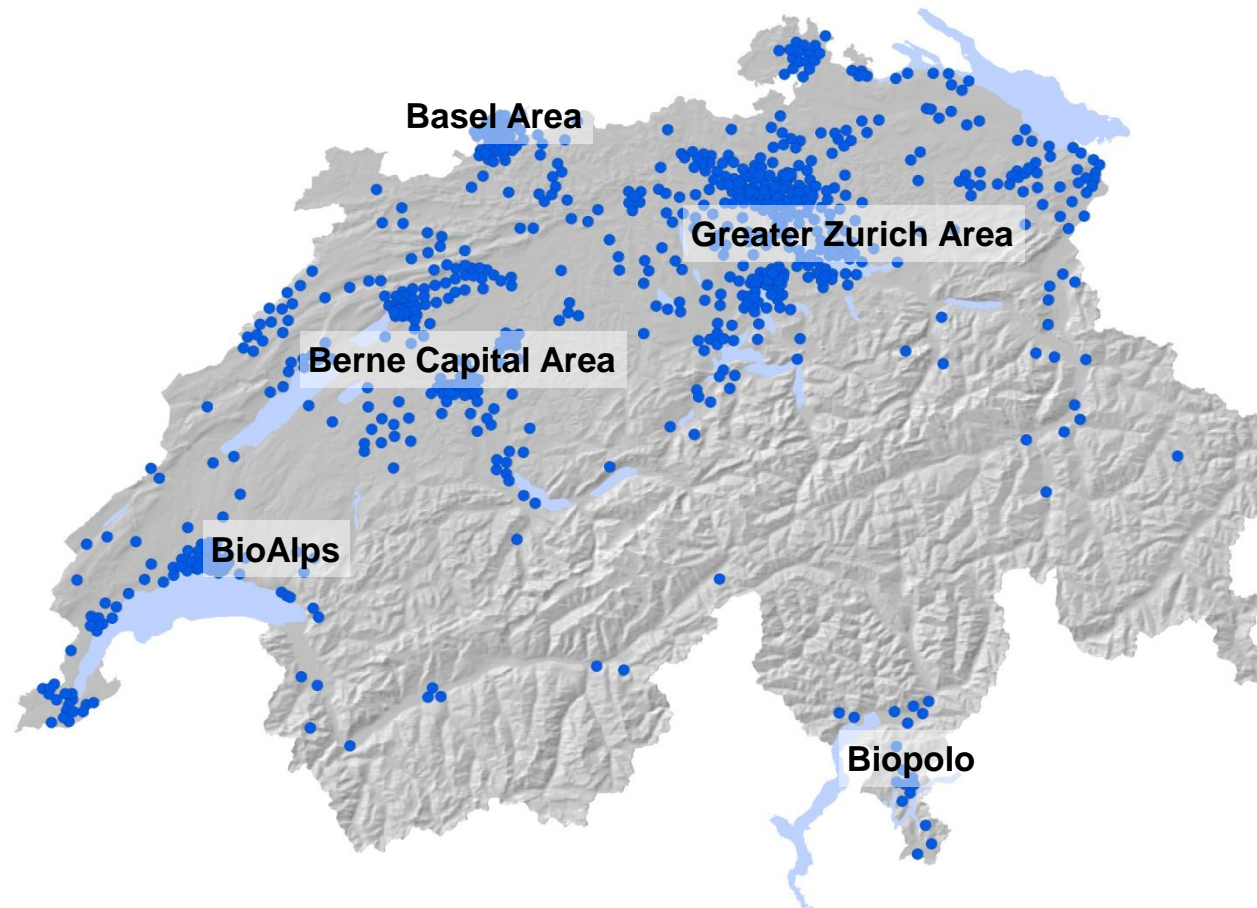
Share of workforce employed in medical technology [% , 2007]

Comments



- Ireland and Switzerland rank equal first in Europe for the share of the workforce employed in the medical technology industry, at approx. 1.2%
- For Switzerland, this means approx. 45,000 people working in the industry
- The figures for other key EU countries, such as Germany and the UK, are 0.2 to 0.3%. However, the numbers are bigger than for Ireland or Switzerland in absolute terms (Germany – 110,000, UK – 60,000)

The whole of Switzerland is one big medical technology cluster – 700 manufacturing companies supported by several organizations



The SMTI is strongly supported by the Swiss Life Science Marketing Alliance SLSMA and its members

- Bio Alps, representing seven cantons in the west
- Berne Capital Area, on the Berne-Solothurn axis
- Basel Area in the north
- Greater Zurich Area, covering the center and east
- Biopolo in the south
- Medical Cluster, the industry platform
- SWX Swiss Exchange, the preferred European medical investor platform

The SLSMA markets the brand "Swiss Medtech"

● Location of medical technology manufacturers and suppliers; n = approx. 700

Switzerland is highly attractive – five of the top ten medical technology manufacturers in Switzerland come from the US

No.	Company ¹⁾	Sub-section of market	Head-quarters	Employees in CH 2007	Worldwide turnover 2007 in CHF m ²⁾
1	Synthes	Orthopedics	USA	2,800	3,036
2	DePuy, J&J	Orthopedics	USA	2,000	4,950
3	Roche Diagnostics	In-vitro diagnostics	Switzerland	1,750	9,350
4	Ypsomed	Injection systems	Switzerland	1,210	287 ³⁾
5	Zimmer	Orthopedics	USA	1,000	4,290
6	Sonova/Phonak	Hearing systems	Switzerland	920	1,205
7	Medtronic	Active and passive implants, vascular diseases and diabetes	USA	800	13,529
8	B. Braun	Orthopedics, hospital aids	Germany	750	5,716
9	Straumann	Dental implants	Switzerland	700	714
10	Stryker	Orthopedics	USA	600	5,662

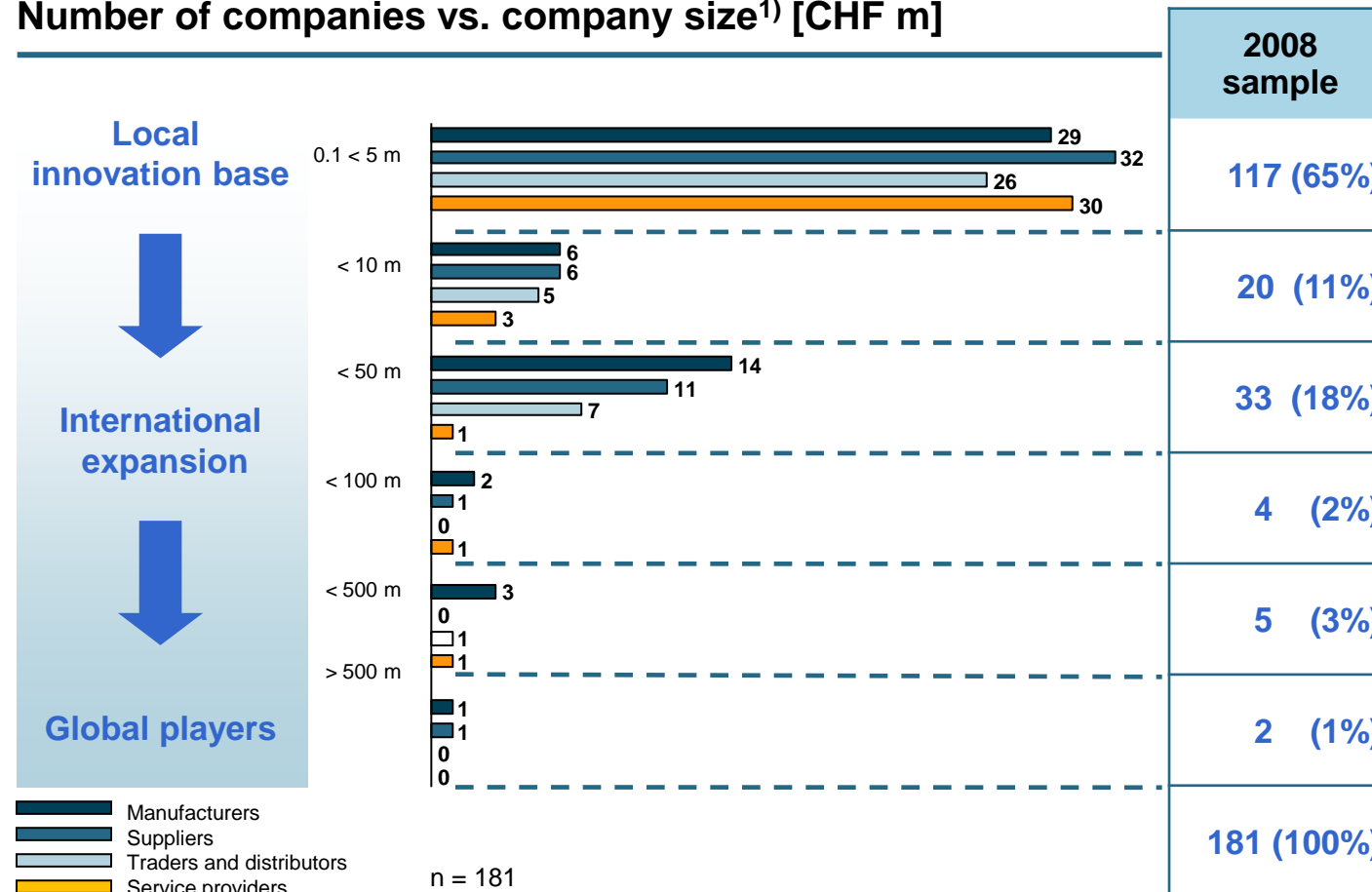
1) Manufacturers only

2) Exchange rate used: CHF/USD: 1.10; CHF/EUR: 1.60

3) 2007/2008

A strong local innovation base lies behind the success of the SMTI

Number of companies vs. company size¹⁾ [CHF m]



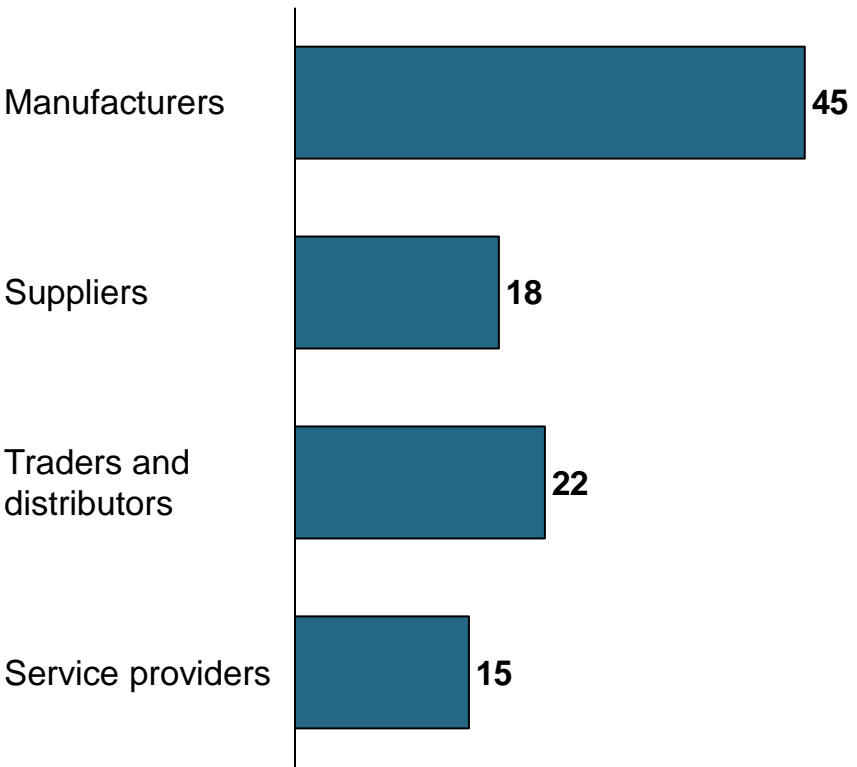
Comments

- 65% of companies had less than CHF 5 million turnover in 2007 – about the same level as in 2005
- The vast majority (about 94%) have a turnover of less than CHF 50 million
- These smaller companies form the backbone of the SMTI, being rooted in the local innovation base

1) Turnover 2007

The total SMTI generated an estimated CHF 20.3 billion of gross revenue in 2007

Proportion of total gross revenue [% , 2007]



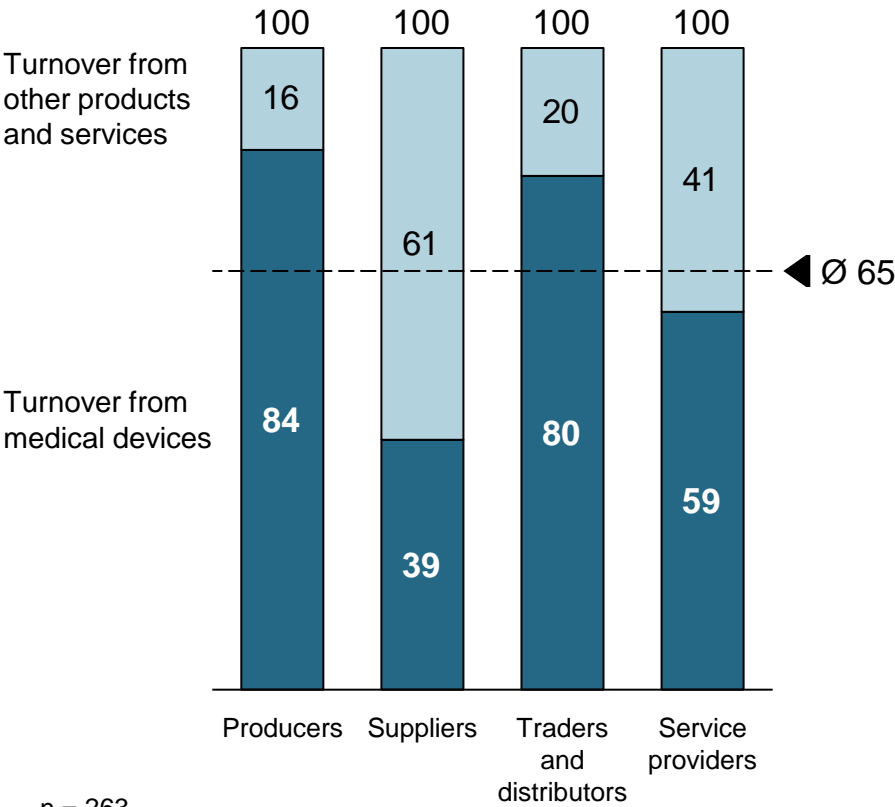
n = 195

Comments

- Gross revenue (turnover) of the SMTI is an estimated CHF 20.3 billion. Net revenue (value added) is an estimated CHF 11.6 billion, or 57% of gross revenue
- The net revenue of the SMTI corresponds to 2.3% of Swiss GDP. However, the industry employs only 1.2% of the total workforce in Switzerland. The industry therefore has a very high level of value creation
- Manufacturers account for the lion's share (45%) of national gross revenue and highlight the importance of Switzerland as a production site for medical devices. The same can be said for suppliers (18%)
- Traders and distributors account for roughly 22% of turnover. Many of them are national distributors of foreign companies. This indicates the importance of Switzerland as a country with a high expenditure per capita on medical products
- Specialized service providers supporting the other three branches of the industry account for 15% of gross revenue

Many medical technology companies are also significant suppliers to other industries

Average turnover [%, 2007]

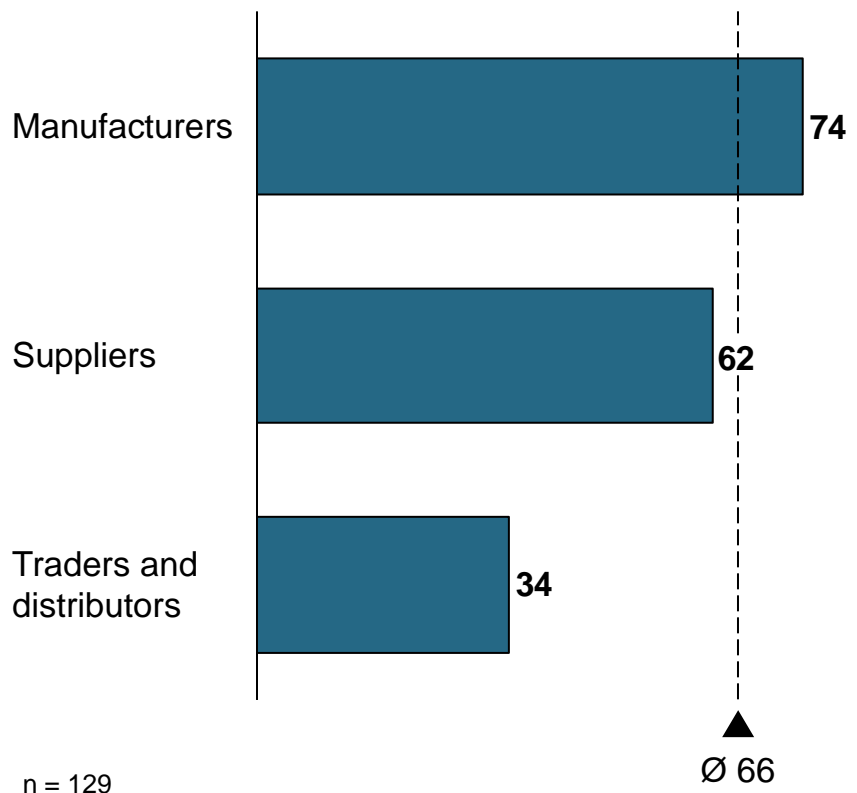


Comments

- In general, most of companies' turnover is generated from medical devices, on average of the sample 65%
- Suppliers are an exception, making only 39% of their total turnover from medical devices. The reason is their greater diversity: they often focus on one material or technological application and provide their expertise in this area to both the medical technology industry and other industries
- Companies generate revenue in other industry sectors apart from medical technology, including
 - Watches and optical instruments
 - Machine construction
 - Pharmaceuticals
 - Electronics
 - Automotive and airline
 - Food

Export plays an important role – on average accounting for 66% of turnover

Average share of export [% of turnover, 2007]

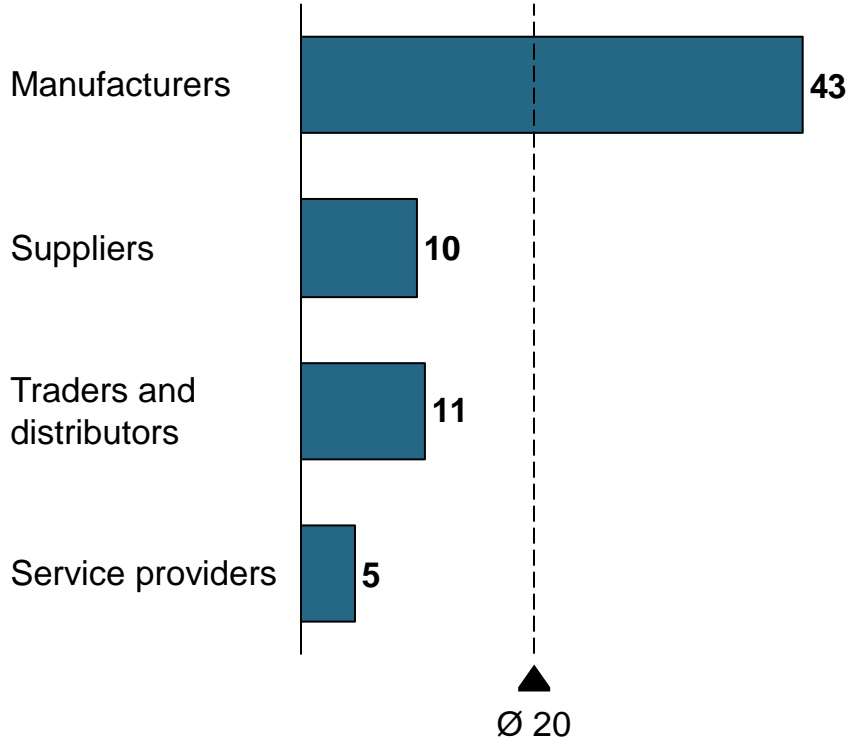


Comments

- Across all SMTI sectors, the industry exports about 66% of its products. This indicates the strong international market positioning and solid business relationships of Swiss companies, both with their own affiliates and third parties abroad
- Exports ratios have been more or less stable over the last few years (2005: 64%)
- Manufacturers export a significant proportion (74%) of their products
- Suppliers export 62% – a large part of their products are used by Swiss manufacturers of medical devices
- As expected, the export share of traders and distributors is relatively small – most of these distributors focus on Switzerland

Manufacturers form the backbone of the industry – average company turnover is CHF 43 million

Average company turnover [CHF m, 2007]¹⁾



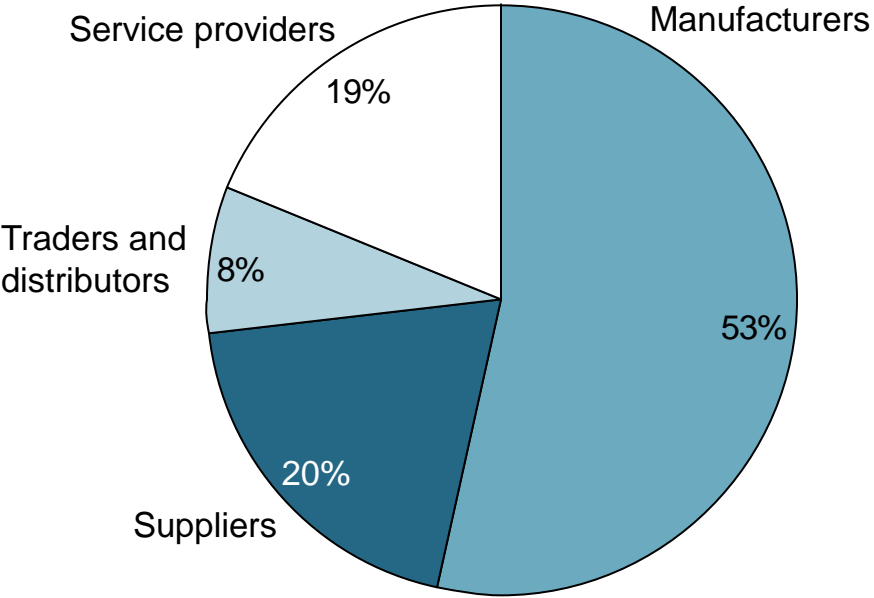
Comments

- Manufacturers form the backbone of the industry with an average turnover of CHF 43 million
- Traders and distributors come second, with an average turnover of CHF 11 million. Like for manufacturers, their medical technology business accounts for a much higher share of their overall business compared to suppliers and service providers
- Suppliers have an average turnover of CHF 10 million in components for medical devices. In addition, they are active in many other related industries, such as components for watches or electronic equipment and engineered products. Taking these other business activities into account, their average total turnover is estimated to be around CHF 25 million
- Service providers have the lowest average turnover. The reason is that investments and capital costs in the service business are lower: these companies do not have to reach a certain level of turnover before they can operate profitably
- The average turnover for all sub branches in the sample is CHF 20 million

n = 185
1) Only with medical devices or components for medical devices

Manufacturers and suppliers also dominate employment, accounting for over 70% of the total SMTI workforce

Distribution of employees [2007]



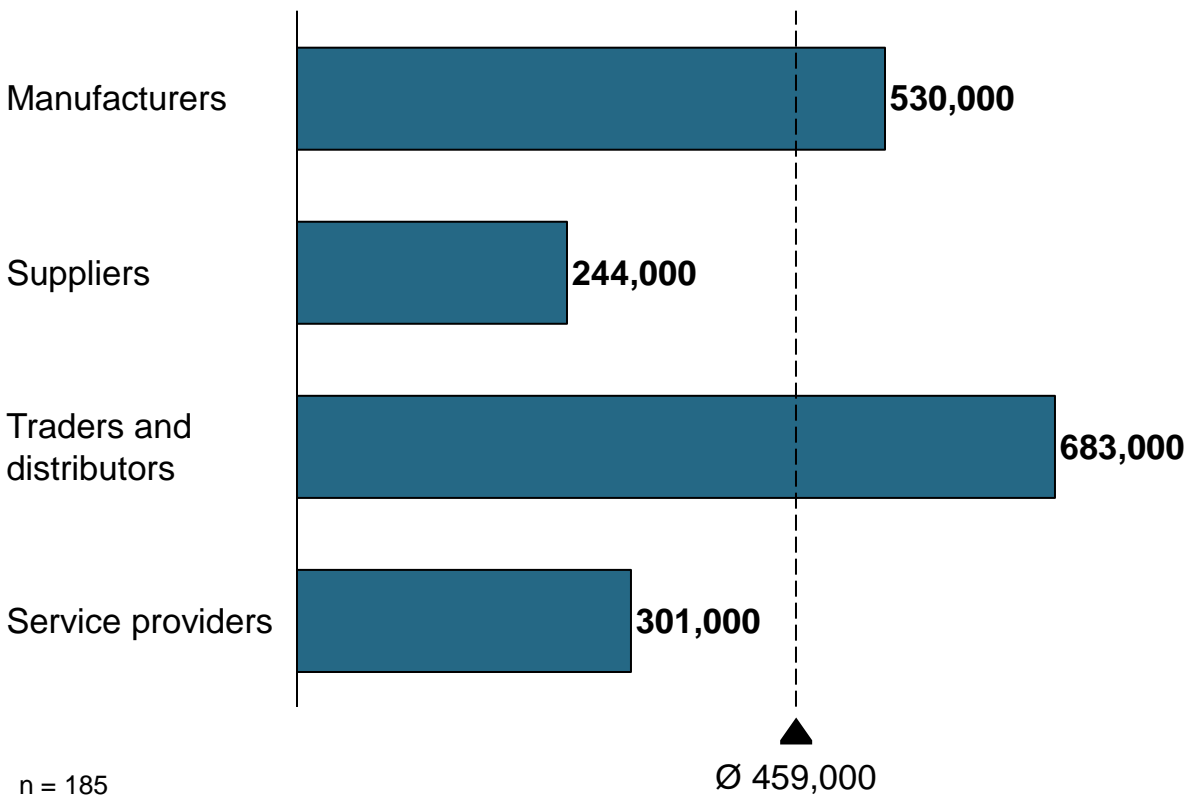
n = 296

Comments

- The survey indicates that manufacturers are by far the biggest employers (53%). Their average workforce is 82 FTEs
- Suppliers and service providers each employ about 20% of the total workforce (suppliers: 35 FTEs; service providers: 56 FTEs on average)
- The entire sector employs currently approx. 45,000 people (equivalent to 1.2% of the Swiss workforce). The survey covered more than 34% of employees (15,333 FTEs)
- This represents a net increase of approx. 13% p.a. since 2005 (35,000 FTEs) according to a top-down industry estimate
- The SMTI continues to grow, especially in the area of micro and small companies
- Of all companies
 - 95% employ fewer than 250 FTEs
 - 81% employ fewer than 50 FTEs
 - 51% employ fewer than 10 FTEs

Traders and distributors lead the industry with the highest average turnover per employee

Average turnover per employee [CHF, 2007]

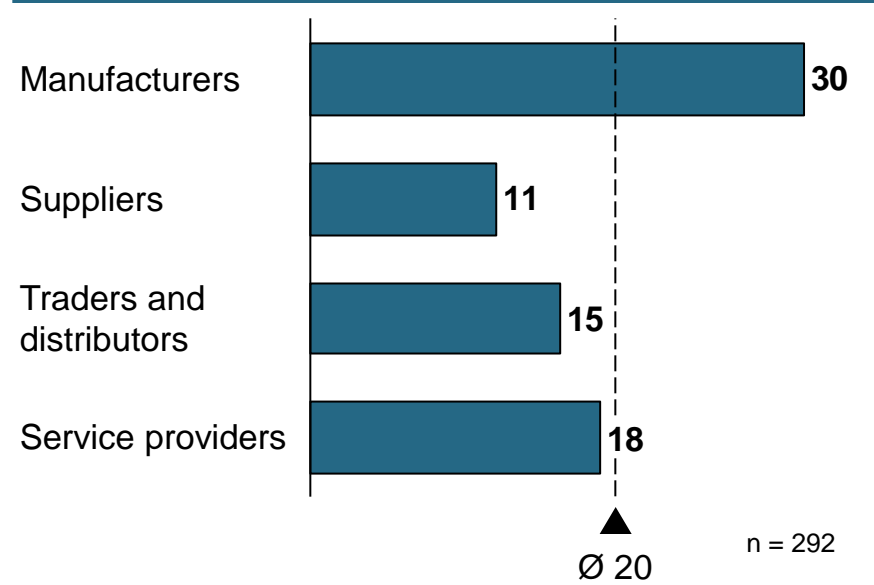


Comments

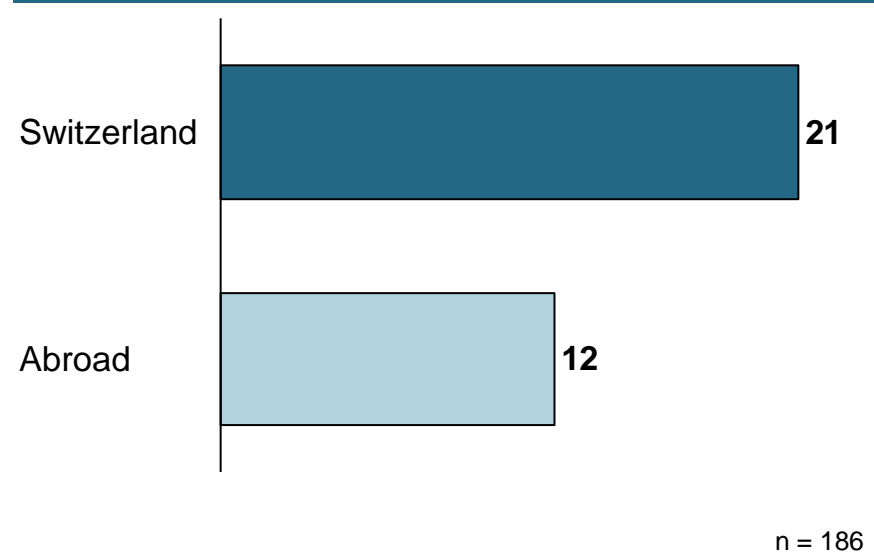
- Manufacturers have an average turnover per employee of CHF 530,000. This level is higher than for suppliers, who achieve CHF 244,000
- Traders and distributors achieve the highest turnover per employee by far, at more than CHF 683,000
- Service providers have a turnover per employee of CHF 301,000
- The estimated average turnover per employee for the whole SMTI is estimated at CHF 459,000
- For comparison: The average turnover per employee in the machine industry was CHF 408'000 (2005)

The SMTI grows faster than the Swiss industry average – the workforce of the manufacturers grew by 30% over the last two years

Average growth in staff in Switzerland [%, end 2005-2007]



Growth in local vs. foreign employment [%, end 2005-2007]¹⁾



- The SMTI has grown by 20% on average since the end of 2005 – well above the average growth level for the Swiss industry (6%)
- Manufacturers in particular experienced strong growth in employee numbers in 2005-2007, at 30%. Suppliers grew more slowly, but still almost twice as fast as the Swiss average

- The survey reveals that the employment growth is focused mainly in Switzerland and not outside the country
- This ties in with the survey finding that off-shoring production is not one of the major strategies followed by companies

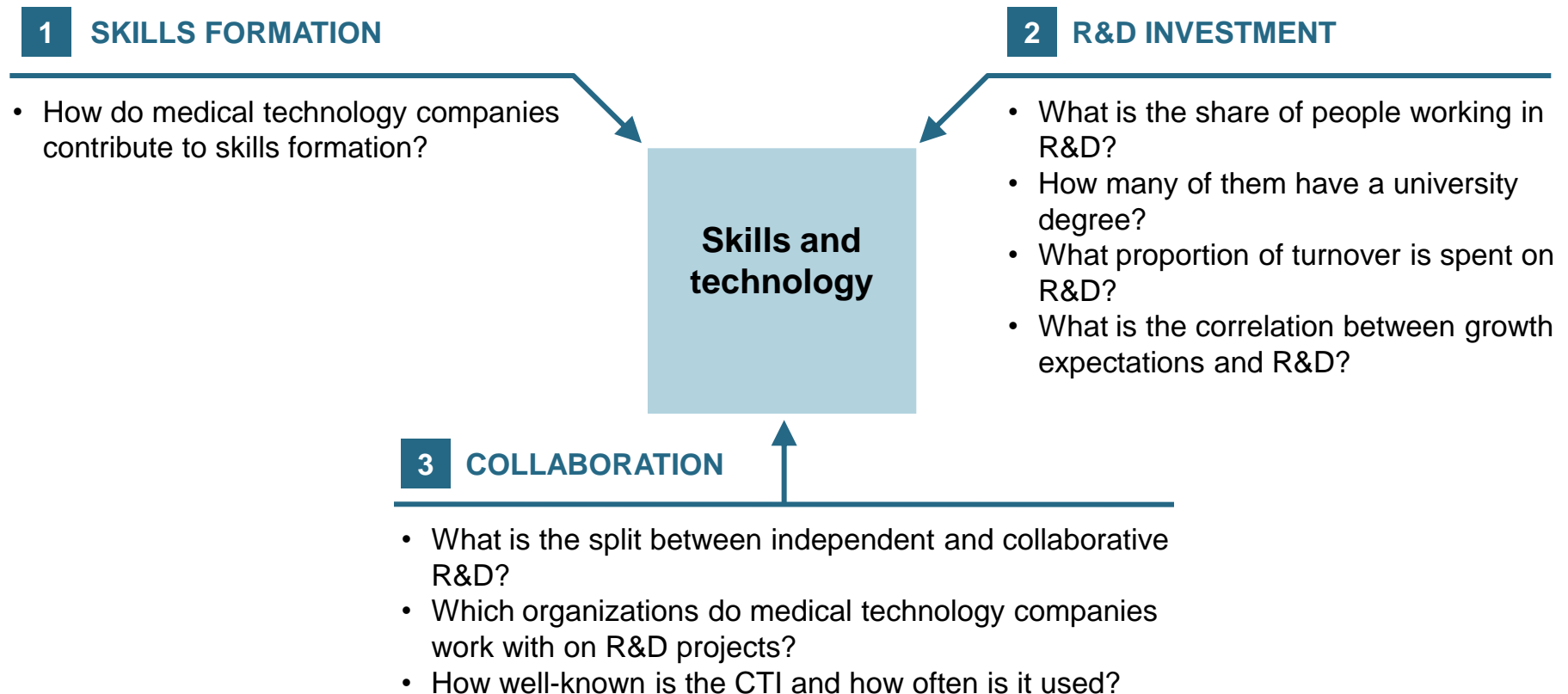
1) Only manufacturers and suppliers



C. Skills and technology

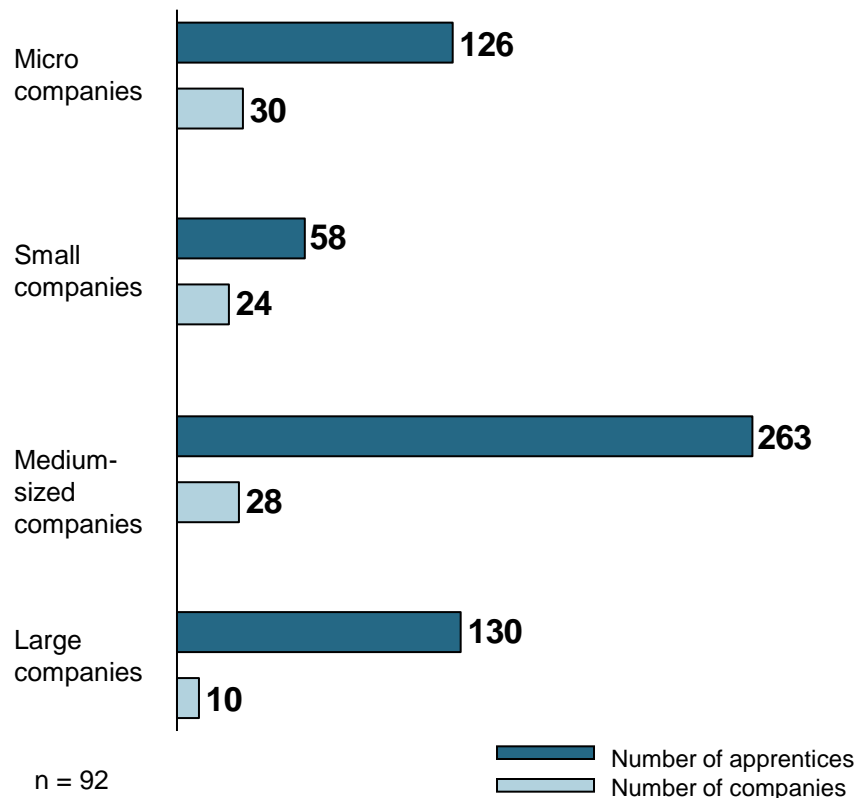


Growth and leadership are ensured by the continuous promotion of collaboration and intensive R&D



Only 40% of companies have a license to train apprentices – medium-sized companies invest most in vocational training

Number of apprentices by company size

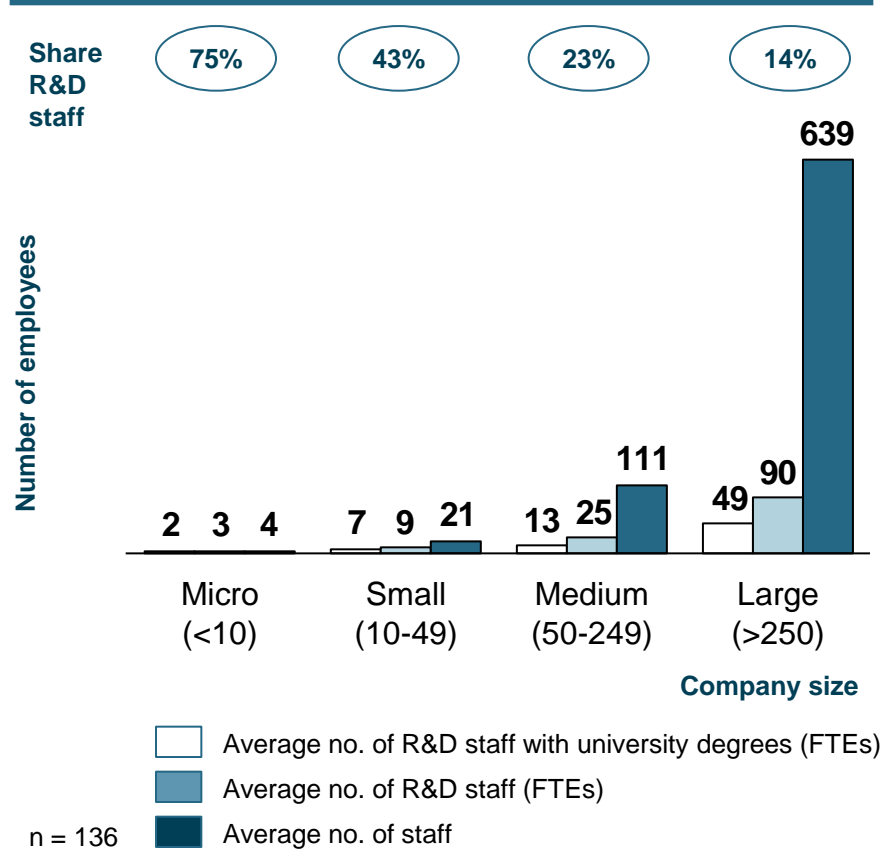


Comments

- 119 companies (40% of the sample) hold a license to train apprentices. Some 92 companies (31%) provide vocational training to 577 apprentices. On average, companies employ 6.3 apprentices. This forms a strong basis for creating the specialists required by the industry
- The SMTI employs 4% trainees on average, below the national level of 5.8%
- Medium-sized companies carry out the largest share of vocational training (45%), followed by large companies (23%) and micro companies (22%). Small companies train only 10% of apprentices

Some 16% of employees in the SMTI work in R&D – the bigger the company, the lower the share

Number of R&D staff by company size

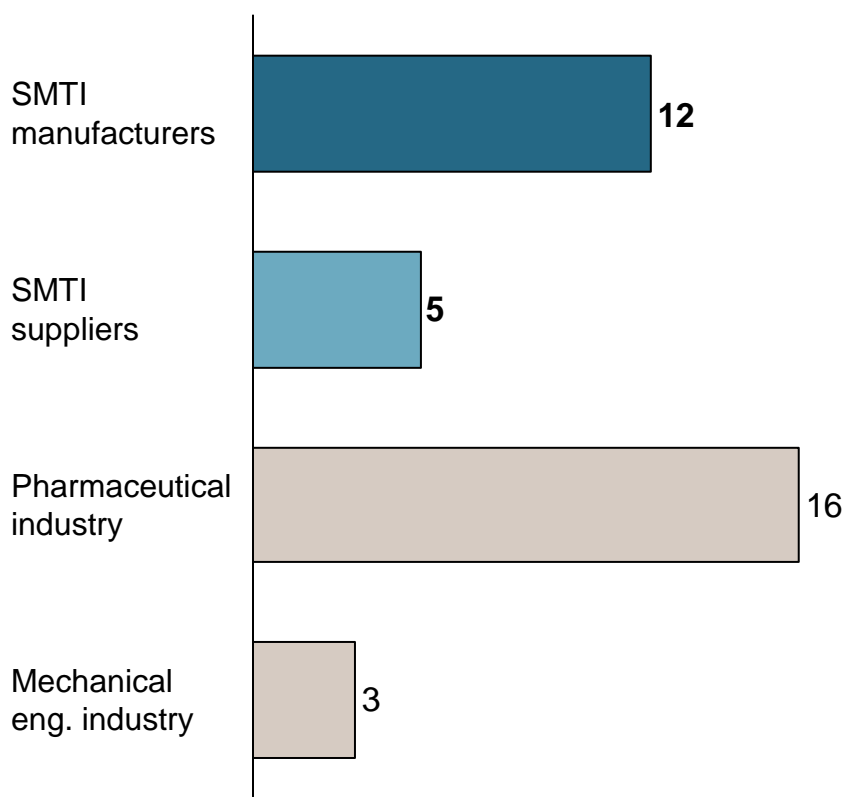


Comments

- In the sample, 16% (2,468 FTEs) worked in R&D. This represents a sharp increase over the 2005 level of 11%. The main reason for this increase is the requirement for innovative products. Manufacturers alone employ 1,121 R&D people in 62 companies
- Large companies employ the highest absolute number of R&D staff, followed by medium-sized companies. However, medium-sized companies have the lowest share of employees with a university degree working in R&D
- The bigger the company, the lower the share of staff in R&D (75% for micro companies vs. 14% for large companies). Micro companies are usually technology-based spin-offs of universities or other research intensive companies and therefore have a high share of R&D employees
- On average, 18.5 FTEs work in R&D; 56% of employees in R&D hold an university degree

Average spending on R&D in the medical technology industry is high – manufacturers spend around 12% on R&D

R&D spending as share of turnover [%]



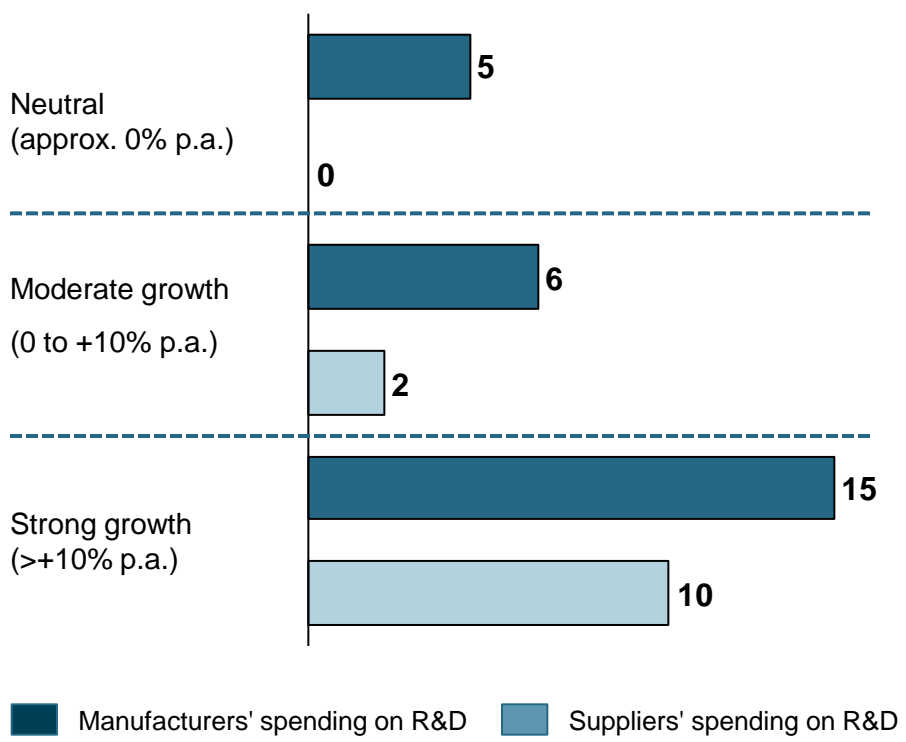
n = 176

Comments

- On average, manufacturers spend about 12% of their turnover on R&D. This shows that medical technology is a high-tech industry and is to a large extent driven by technology
- Suppliers spend substantially less on R&D. The survey reveals a weighted spending of less than 5%. Within the group of the suppliers several companies invest far more into R&D than the average 5%. These are suppliers that evolved from a components manufacturer to a supplier that sells whole systems due to its technological competence
- R&D spending in the SMTI is higher than in mechanical engineering but lower than in the pharmaceutical industry

Manufacturers expecting strong growth also spend the most on R&D

Expected growth and R&D spending [%]



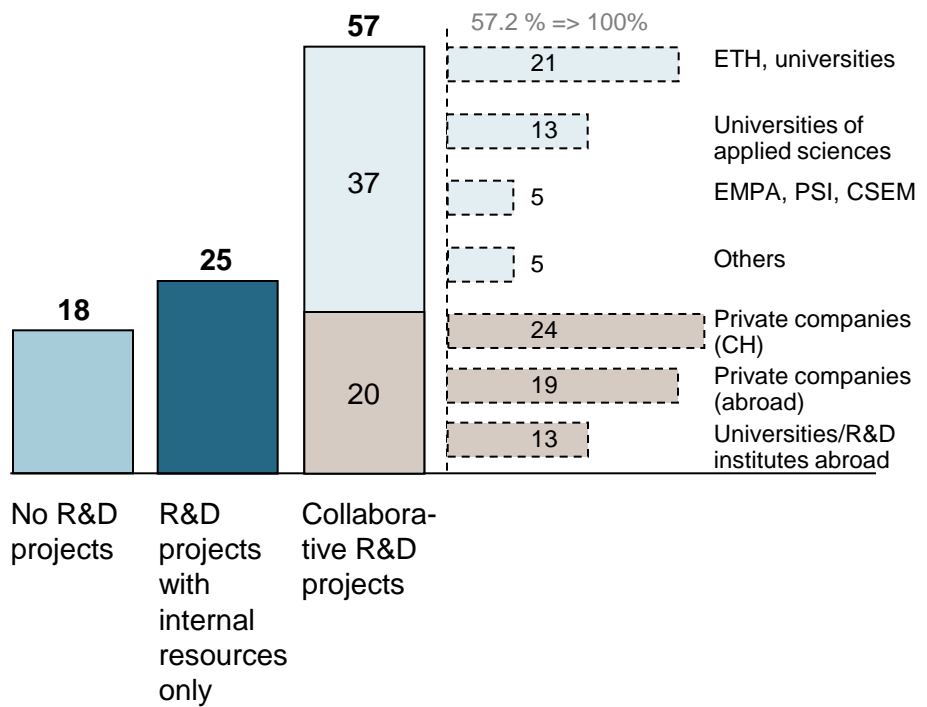
n = 154

Comments

- The survey reveals that the more growth companies expect, the more they invest in R&D
- Equally, companies expecting neutral to moderate growth spend much less on R&D
- Manufacturers expecting the strongest growth rates in 2009 are investing heavily in R&D. Their average R&D spending is approx. 15% of turnover – among the highest spending rates on R&D in the industry
- A similar pattern can be observed for suppliers, albeit starting from a lower level

82% of all companies conduct R&D projects – most of them in collaboration with private companies and universities

Companies engaged in collaborative R&D projects [%]



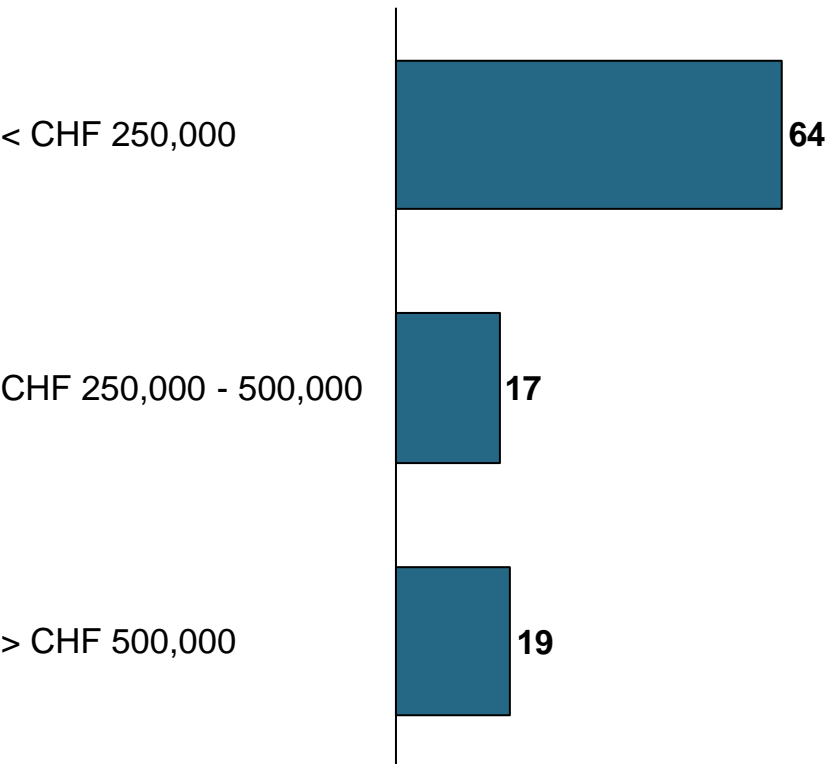
n = 247, multiple answers possible (508 entries)

Comments

- 43% of companies have no collaborative R&D projects (some conduct independent R&D, some do no R&D at all). The other 57% engage in collaborative R&D with partners from industry or academia
 - "Collaboration with other private companies in Switzerland" and "collaboration with other private companies abroad" are the preferred patterns
 - "Collaboration with ETH and universities" is significant for most companies
 - "Collaboration with EMPA, PSI, CSEM" is of minor importance in terms of R&D collaboration
- Of all collaborative R&D projects with national institutes, 64% are of strategic importance. Of the companies engaged in such projects, 24 participated in EU-subsidized R&D programs; they were mainly micro companies
- The bigger the company, the less it participates in EU-subsidized R&D programs

Companies carry out quite a large number of small R&D projects with national institutes

R&D projects segmented by budget size [%]



n = 116

Comments

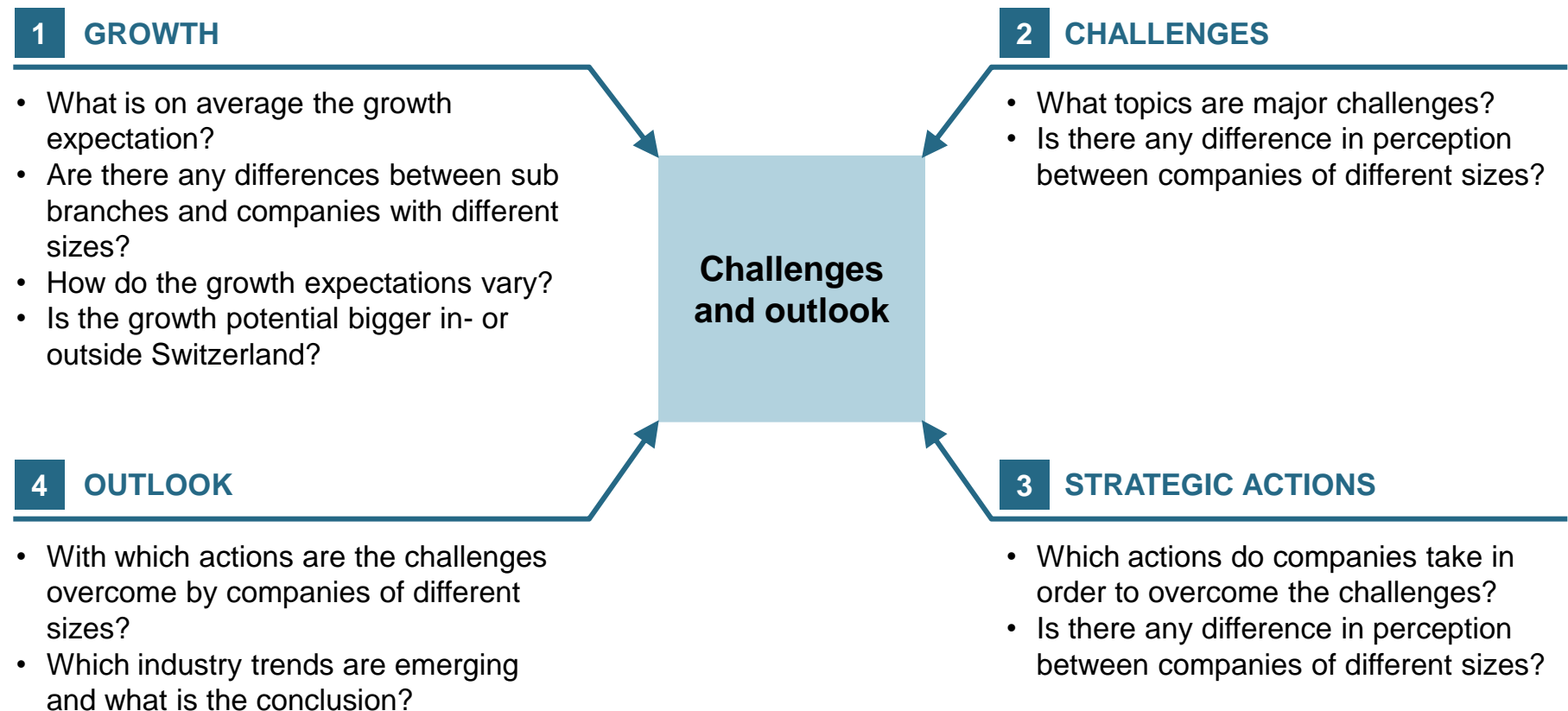
- The estimated total collaborative R&D budget for companies in the survey is CHF 30.5 million; the estimated average R&D budget is CHF 0.26 million
- Small companies are most successful in securing collaborative funded projects
 - 22 large projects costing CHF 13.75 million in total
 - 97 small projects costing CHF 9.75 million in total
- 132 companies (45% of those responding) know the initiative MedTech of the Innovation Promotion Agency CTI. Some 49 companies (17%) have previously participated in CTI Medtech-sponsored projects. CTI is thus an important source of financing for projects
- Since 1997 CTI has supported 230 projects with federal contribution of 90 million, which corresponds to an R&D investment of about 225 million



D. Challenges and outlook

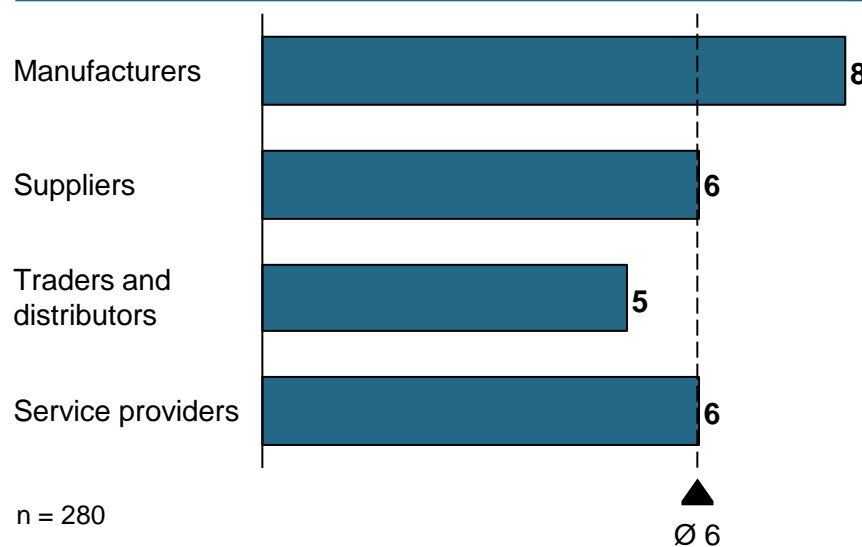


Although good growth expectations challenges can be identified – strategic actions help to further improve the outlook



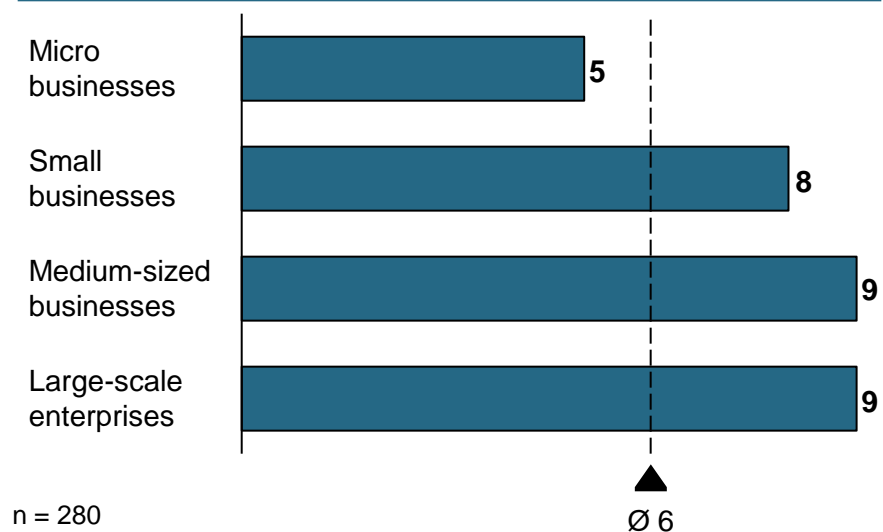
Industry growth of 5 to 9% is expected in 2009

Growth expectations by segment [%]



- Overall, respondents expect average growth of 6% in 2009
- Manufacturers expect above-average growth in 2009, while traders and distributors expect just 5% growth
- On average, traders and distributors expect a lower growth rate due to eroding margins as the market becomes more competitive

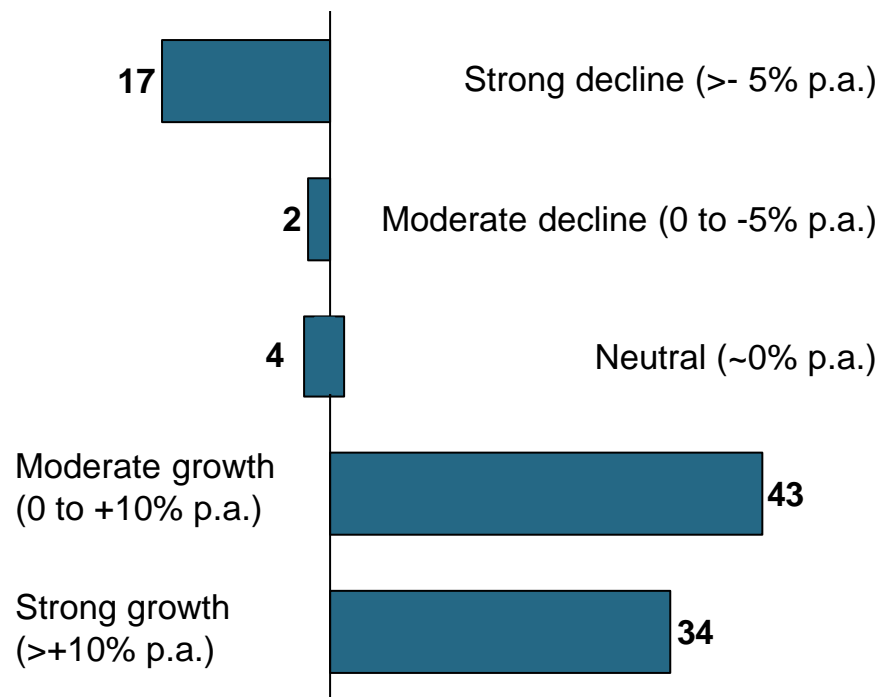
Growth expectations by company size [%]



- All types of companies (except for micro businesses) expect growth of 8 to 9% in 2009
- Estimated industry growth in the next two years will be 5 to 9%
- Note: The survey was carried out prior to the accelerating financial crisis of October 2008, so companies' growth expectations should be treated with caution

One-third of respondents expect revenue growth of over 10% for 2009

Expected growth 2009 [% of answers]



n = 280

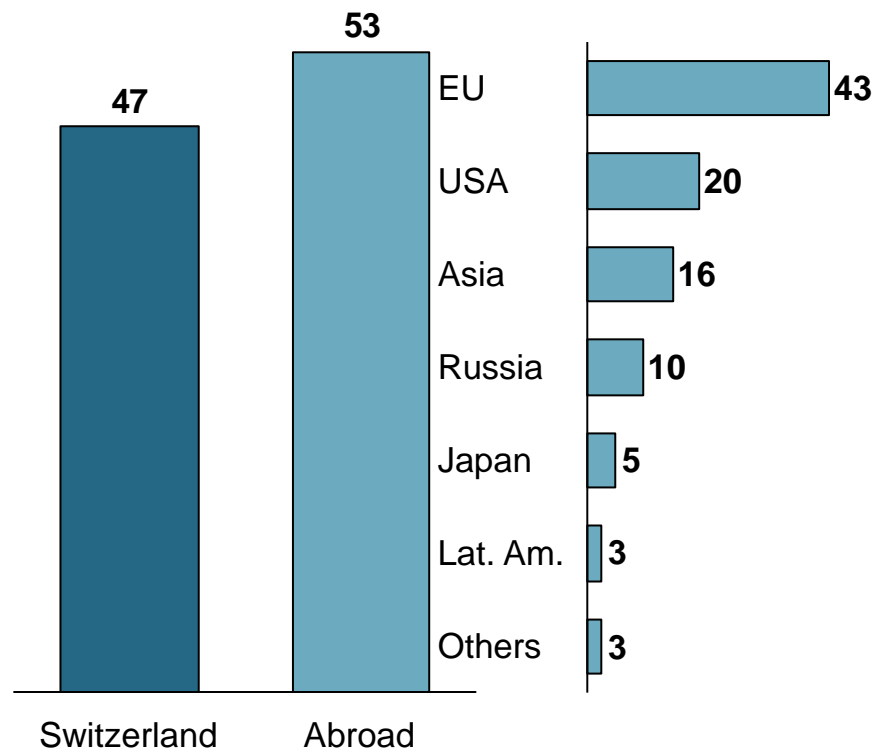
Comments

- 77% of respondents expect moderate to strong growth; 34% of respondents expect strong growth (over 10% p.a.)
- In June – the time the SMTI questionnaires were sent out – the OECD forecasted a Swiss GDP growth rate of 2% for 2008 and of 1.4% for 2009
- With 6% for 2009 the expected growth rate of the SMTI is clearly above. Average growth rates were 6 to 8% in the past 15 years¹⁾
- The vast majority of the SMTI expects a growing SMTI in 2009. However a minority of 19% of all companies expect a decline, most of them even a strong decline of -5% or more

1) Helbling MedTech Report 2006

Companies see stronger growth potential outside Switzerland – especially in the EU, US, Asia and Russia

Expected growth potential [%]



n = 280, multiple answers possible

Comments

- Growth potential is seen by participants in the study as follows
 - In Switzerland: 47%
 - Outside Switzerland: 53%
- Strongest growth potential is seen outside Switzerland, in the EU, US, Asia and Russia
- Weakest growth potential is seen in Japan, Latin America and the "rest of the world"
- These expectations support the ongoing globalization/internationalization of the industry
- Furthermore, if international sales expansion is successful, the future export levels are expected to rise

The availability of skilled employees and the access to know-how are the major challenges facing the SMTI

Ranking of challenges [% of answers]¹⁾



Comments

- The survey indicates that for over 80% of companies, a lack of skilled employees (82%) and access to specialized know-how (81%) are the major challenges
- More than 60% of companies said they face
 - price pressure (67%). The increased pressure on price is due to an intensified international competition (62%)
 - cost pressure (64%). Pressure arising especially from purchasers and healthcare institutions
 - regulatory pressure (64%): The growing demand for safety data and information for product registration will result in higher costs
- Both, rising pressure on prices and higher costs for product registration will decrease expected margins
- Interestingly, the cost pressure due to high production costs in Switzerland is only perceived by 41% as a challenge, therefore relocation does not seem to be a major topic (not depicted here)
- Mergers and acquisitions are perceived to be the weakest challenge (not depicted here)

n = 296; multiple answers possible

1) Companies describing the challenge as "highly relevant" or "extremely relevant"; only answers >49%

Ranking of challenges by company size – access to know-how is almost equally important for all companies

Challenges ¹⁾	Company Size			
	Micro	Small	Medium	Large
Access to know-how	1	2	1	1
Availability of skilled employees	2	1	2	3
Increasing pricing pressure	3	3		
Regulations, listing requirements				1
Cost pressure from purchasers and health care institutions		3		3
Intensified international competition			3	

Comments

- Looking more specific at different company sizes of this industry, the picture of challenges is still quite homogeneous: most of the companies see the
 - access to know-how and the
 - availability of skilled employees as the main issues
- Surprisingly, the challenge of skilled employees is also an issues with large companies, although they can recruit their employees in international markets
- The top three challenges of micro and small companies are almost similar
- Contrary to this, large companies are relatively more exposed to regulatory and health care industry issues

n = 296

1 Primary importance

2 Secondary importance

3 Third highest importance

1) Only these challenges are listed that are at least among the top three priorities

Ranking of challenges by category of companies – availability of skilled employees is about equally important

Challenges	Company Category			
	Manuf.	Suppliers	Traders	Service prov.
Access to know-how	2	2	1	1
Availability of skilled employees	1	1	2	1
Increasing pricing pressure		3	2	
Regulations, listing requirements	3			3
Cost pressure from purchasers and health care institutions		3		
Intensified international competition				

Comments

- In all company categories, the availability of skilled employees and access to know-how are of primary or secondary importance
- Especially for the interdisciplinary medical technology industry the access to newest know-how is essential
- Whereas manufacturers and service providers care about regulatory issues, suppliers (of e.g. sub-systems) and traders are facing price pressure

n = 296

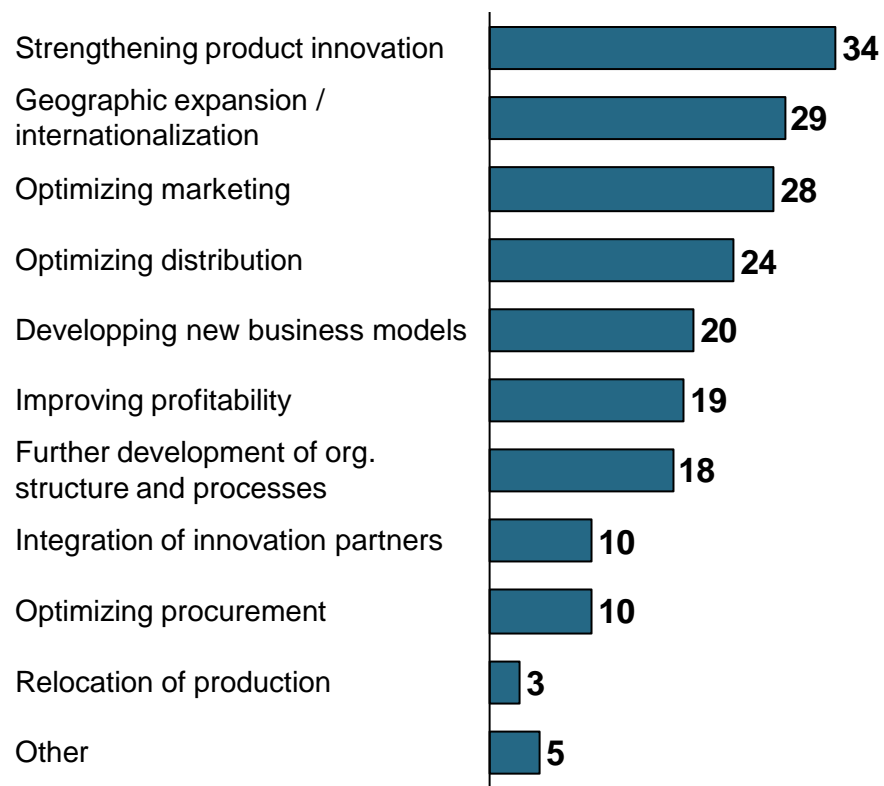
1 Primary importance

2 Secondary importance

3 Third highest importance

Looking at the top priorities of strategic actions the companies require more product and marketing innovation

Ranking of strategic actions [% of answers]



n = 273; multiple answers possible

Comments

- Examining the top priorities of strategic actions the survey reveals that "strengthening product innovation" is critical for maintaining a competitive edge in a fiercer marketplace. But driving the innovation process will not necessarily be done with other partners
- Optimizing the marketing activities with internationalization and product branding is of secondary importance in order to manage growth and drive further expansion
- With 20% and less responses developing new business models and improving profitability are almost equally important
- Improving international sourcing is still not considered to be particularly important. This may be the topic of the next product generation
- Shifting production abroad does not appear to be a major action, this is in line with the challenges

Ranking of strategic actions by company size – strengthening product innovation is for most companies important

Strategic actions	Company Size			
	Micro	Small	Medium	Large
Strengthening product innovation	2	1		1
Optimizing marketing	1		1	
Geographic expansion / internationalization	3	2	2	2
Further development of org. structure and processes		3		2
Optimizing distribution			2	
Developing new business models				

Comments

- Examining the top priorities for companies in relation to their size shows that strengthening product innovation is critical for virtually all companies with the only exception of medium size companies
- Micro and medium-sized companies focus on optimizing their marketing in order to manage growth and drive further expansion (micro companies want to make their first money; medium-sized companies want to sell more of the same)
- International expansion – together with organizational development – are further strong priorities for small and large companies

n = 296

1 Primary importance

2 Secondary importance

3 Third highest importance

Ranking of strategic actions by category of companies – strengthening product innovation is for all companies important

Strategic actions	Company Category			
	Manuf.	Suppliers	Traders	Service prov.
Strengthening product innovation	3	1	1	1
Optimizing marketing	2		2	3
Geographic expansion / internationalization	1	3		
Further development of org. structure and processes		3		
Optimizing distribution	2	2		
Developing new business models		3	3	2

Comments

- Company segmentation according to category gives the most scattered picture
- Strengthening product innovation is top for virtually all companies – with the exception of the manufacturers
- Optimizing marketing is on average second priority for manufacturers, traders and service providers
- Third priority have the three strategic actions: geographic expansion / internationalization, optimizing distribution and developing new business models

n = 296

1 Primary importance

2 Secondary importance

3 Third highest importance

Outlook for the SMTI (I/II)

Industry trends

It is fair to assume that the medical device industry is **less subject to global economic trends** than the other production industries. Sustained above-average growth therefore remains realistic – compared both to other industries in Switzerland and to key medical technology centers abroad.

However, **pressure on margins** will start to become more important in this industry than in the past. This development will increasingly force Swiss manufacturers to cut (mainly production and logistics) costs – which in turn will hit suppliers. Therefore, **cost reduction projects** are becoming more and more popular in the medical technology industry.

In addition, the **global regulatory authorities** are placing increasing demands on companies. This trend affects not only the manufacturers and distributors of medical products but also suppliers, who also have to adjust their processes to meet the increasingly strict regulations.

Technology trends

Swiss medical technology companies will strengthen their position as technology leaders in their own particular niches. **Integrating key technologies** in the area of micro and nano systems, materials and surface technology, IT, electronics and robotics into product development – i.e. a process of **cross-industry innovation** – will be vital here. Accordingly, those companies that anticipate technology trends well in advance and have efficient **technology management processes** will be particularly successful.

Suppliers offering **unique technical features**, complex sub-systems or customer-specific solutions, coupled with a solid understanding of the medical technical market and trends, will also enjoy success.

Outlook for the SMTI (I/II)

Management trends

Companies that are growing particularly strongly invest **above-average amounts in R&D**. They also have well-developed processes and systems for managing the different aspects of innovation. These systems identify relevant trends in the industry and help the companies implement them consistently in their strategies. Successful companies make good use of external competence centers by forming **strategic partnerships**. In addition, comprehensive **staff training and education programs** remain the key to long-term success.

Conclusion

Thanks to the industry's current strength and a continuing favorable business environment in Switzerland, it is believed that more non-Swiss companies with global operations will discover for themselves the advantages offered by **Switzerland as a location for medical technology**, following in the footsteps of B. Braun, Medtronic, Smith&Nephew, Stryker, Zimmer and many others.

The collaboration between businesses, public authorities and institutes should be optimized to ensure that Switzerland becomes the world's best place to produce medical devices.

Switzerland – a leading country for medical technology



The SMTI consists of around

- 600 - 700 Manufacturers and suppliers
- 500 - 600 Traders and distributors and service providers



- The gross revenue is around CHF 20.3 billions, own value added is around CHF 11.6 billions, representing 2.3% of the Swiss GDP



- Today around 45,000 employees work for the SMTI, this equals 1.2% of the Swiss workforce
- The total number of employees during the last two years increased by 20%
- The average turnover per employee is around CHF 460'000



- The average rate of exports is 66%



- 12% of the turnover is invested into research and development
- R&D is often done in collaboration with external partners



- In terms of absolute numbers of employees in the medical technology industry Switzerland ranks third in Europe, after Germany and the UK. In relative numbers Switzerland leads together with Ireland
- The perspectives for the SMTI are still very good, although challenges like the access to know-how and the availability of skilled employees exist



Appendix 1: SMTI survey overview



An in-depth survey and expert research form the basis of this unique report

Objective

The Swiss Medical Technology Industry 2008 Survey

- Aims to embrace the widest industry sample possible
- Provides a contemporary macro- and micro-economic overview of this important sector
- Reflects on the trends, challenges and priorities along the SMTI value chain
- Indicates changes in the industry compared to the situation reported in the Helbling Swiss Medtech Report 2006

Methodology

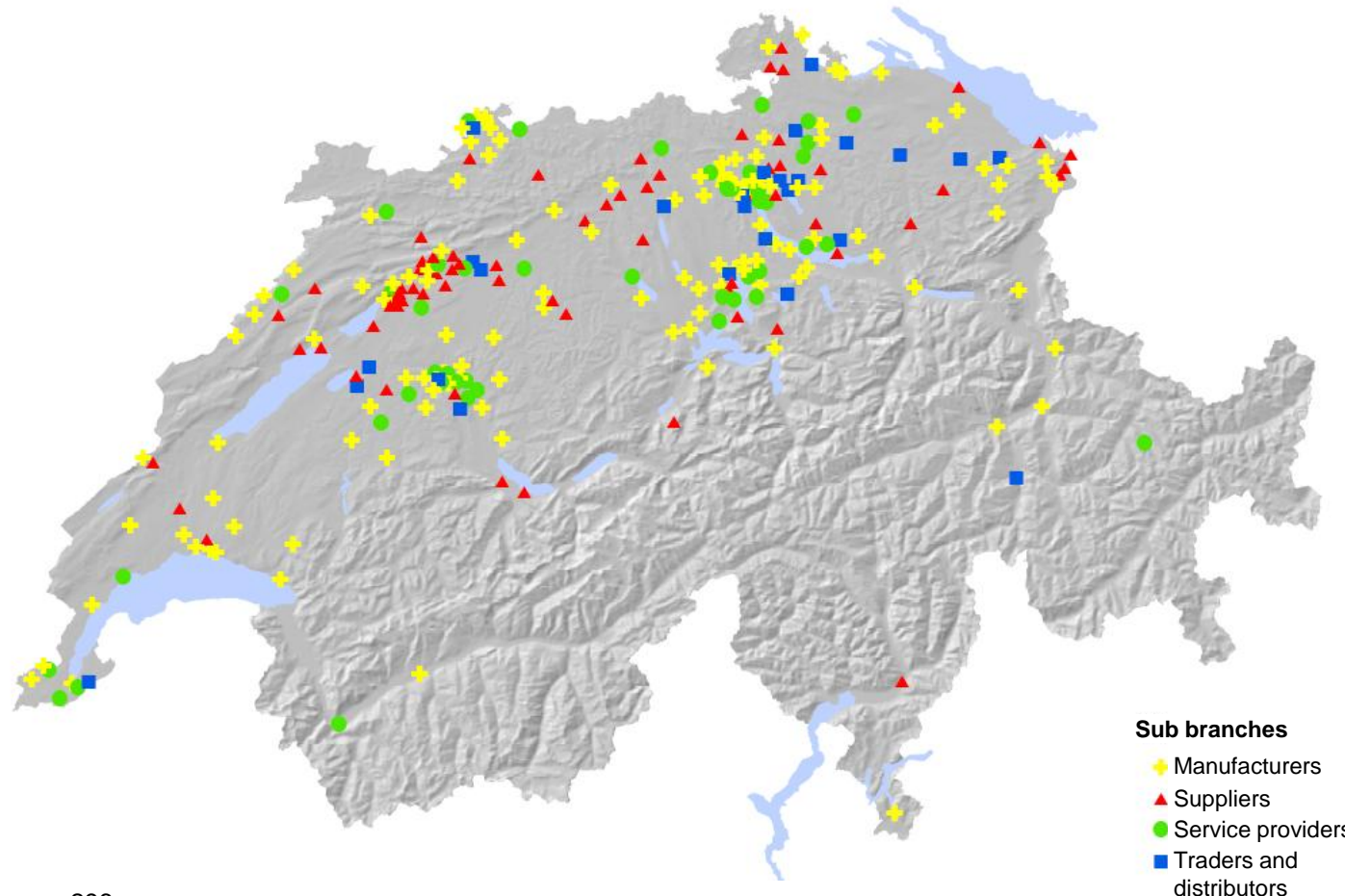
- A questionnaire-based approach with three focal points
 - General company data and profiles
 - Industry information and survey
 - Personal training, skills and R&D
- The detailed questionnaire was supported by desk research and data from industry-specific organizations such as EUCOMED

Approach

- Under the umbrella of Medical Cluster, three strong partners joined forces to carry out a sound industry analysis
- The results will be comparable with other studies on an international level, as internationally recognized definitions are used¹⁾
- The intention is to update the survey every two years, allowing the development of the SMTI, its trends and issues to be tracked

1) Currently no official statistical data is available on this sector for Switzerland; industry structure is not reflected in the NOGA codes

Responses were received from all over Switzerland

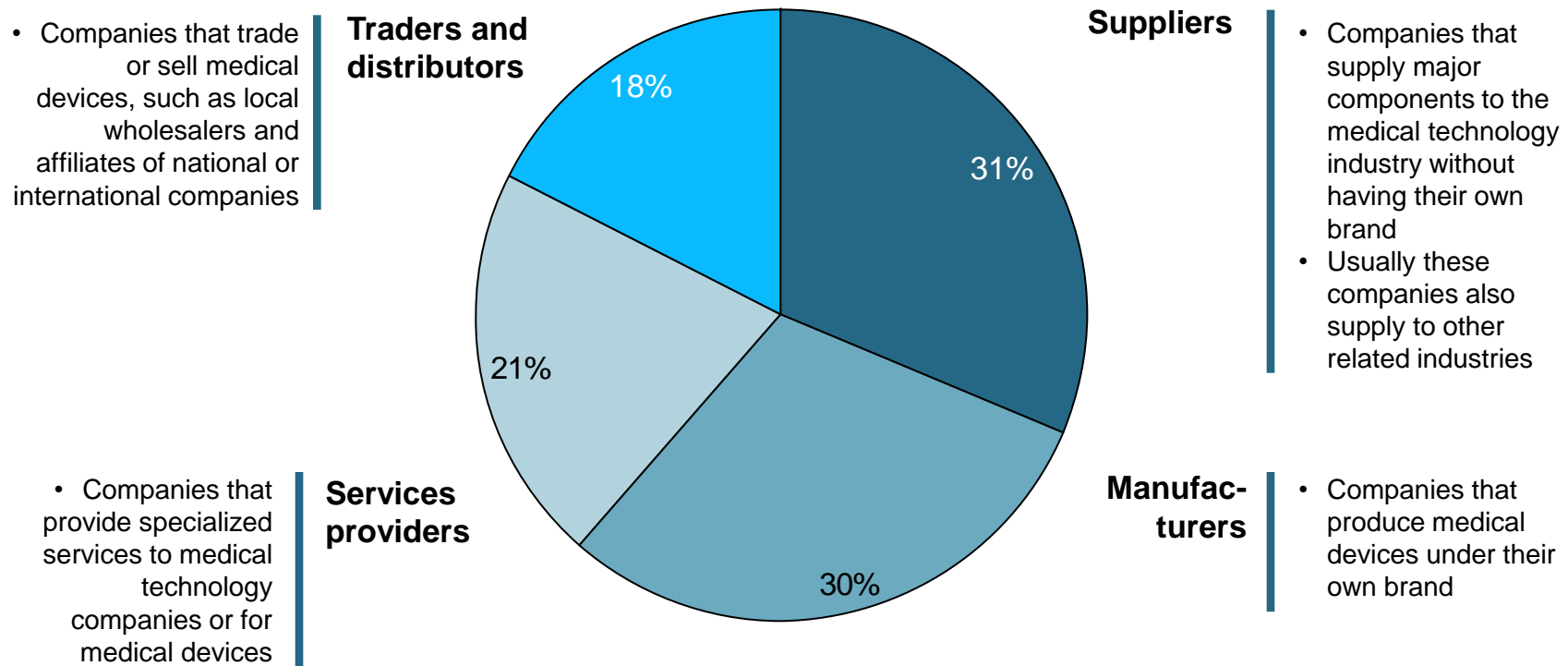


- The survey sample reflects the distribution of the SMTI quite well
- 296 completed questionnaires were received, from all over Switzerland
- Hot spots were the areas around Zurich, Zug, Basel, Berne, Biel and Lake Geneva
- The best response was from suppliers, closely followed by manufacturers

n = 296

Results are based on the 296 participating companies – a solid database

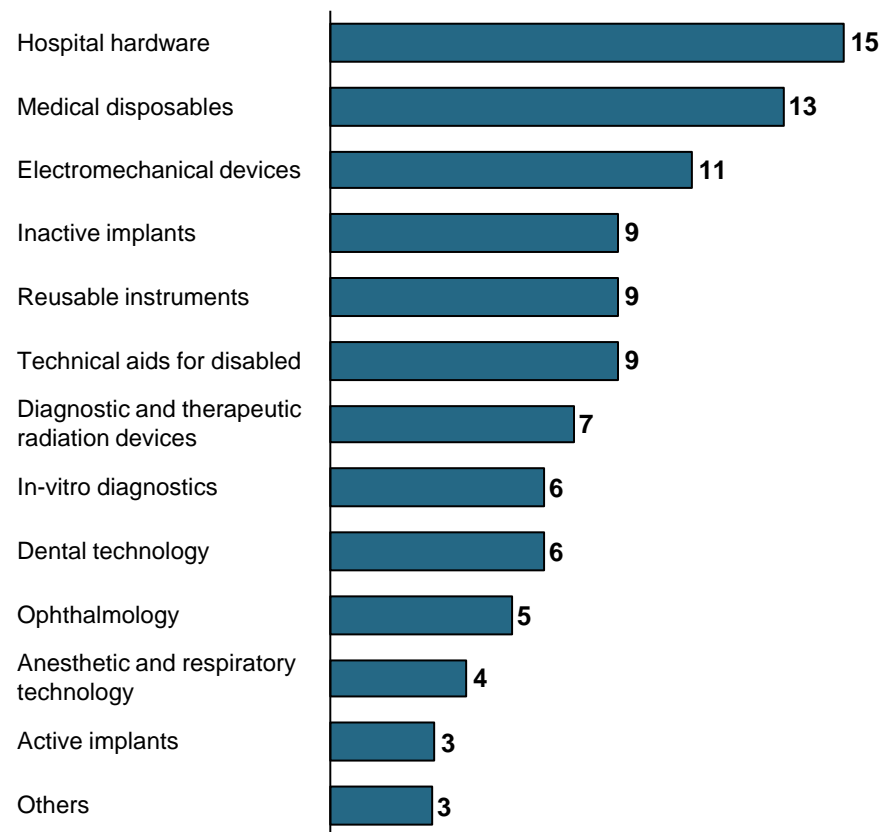
Distribution of participating companies



n = 296

The segmentation of manufacturers shows that the SMTI has activities in many different categories

Manufacturers by categories [%]



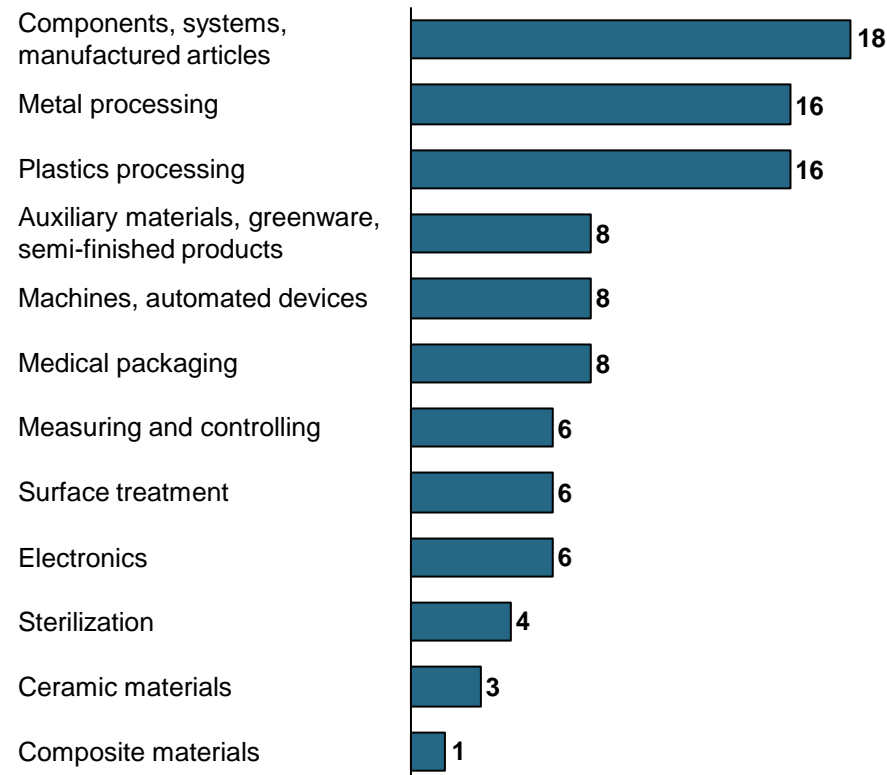
n = 224; multiple answers possible

Comments

- Some 30% of the companies in the sample are manufacturers. The biggest segment are manufacturers of hospital hardware, single use technology and electromechanical devices
- The proportion of manufacturers of inactive implants (e.g. for orthopedic surgery) is remarkably high. This is a legacy of the long tradition of research into surgical technology in hospital clinics in Switzerland
- The share of dental technology is most likely higher than 6% in Switzerland. Participation in the survey was probably therefore not representative

Also the suppliers show many different categories of activities with no clear leading SMTI specialization

Suppliers by categories [%]



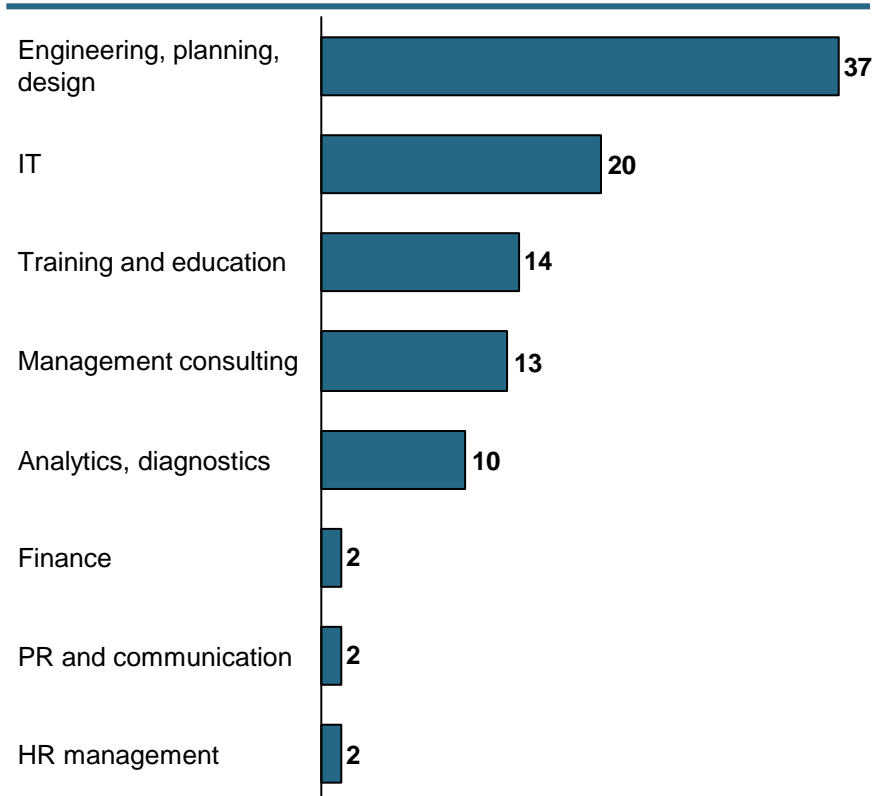
n = 239; multiple answers possible

Comments

- Some 31% of the companies in the sample are suppliers
- The fields of activities within the SMTI are very diverse, ranging from the manufacturing of components of all kind to the composing of ceramic and composite materials
- On average 62% of all products from suppliers are exported for use as components by foreign medical technology companies

Parts of the value chain are outsourced to specialized service companies, to take advantage of their broader expertise

Service providers by categories [%]



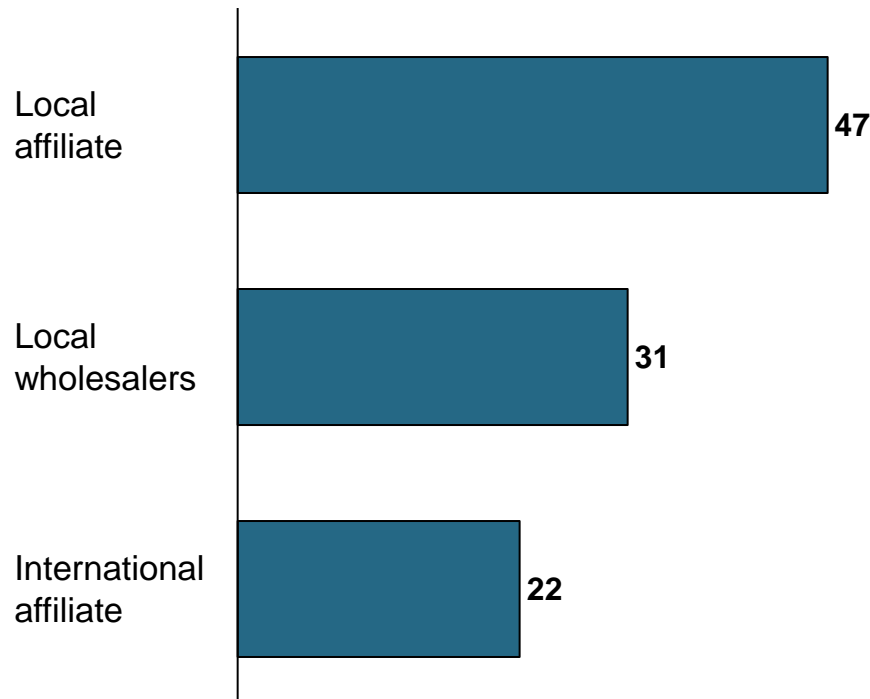
n = 134; multiple answers possible

Comments

- Some 21% of companies in the sample provide special services to the medical technology industry
- This area is dominated by engineering and product design companies, followed by information technology (IT) companies
- The outsourcing of complex parts of the value chain to specialized companies helps the medical devices industry to
 - Control development and production costs
 - Gain experience in specific technical fields
 - Balance capacity peaks in development resources
- Equally important are services in the field of management consulting and advanced professional training. External management know-how and the continuous improvement of the knowledge base help the companies remain competitive

Traders and distributors can be distinguished by country of origin and sales

Traders and distributors by categories [%]



n = 134

Comments

- Traders and distributors can be defined as companies that trade or sell medical devices
- Roughly three groups can be identified
 - Local affiliates of Swiss medical technology companies
 - Local wholesalers that usually offer a wide range of products and sometimes even export these especially to neighboring countries
 - International affiliates, meaning affiliates of foreign medical technology companies

Glossary

CTI/KTI	Innovation Promotion Agency CTI
CSEM	Swiss Center for Electronics and Microtechnology, Inc./Suisse d'Electronique et de Microtechnique SA
EMPA	Eidgenössische Materialprüfungs- und Forschungsanstalt (Swiss Federal Laboratories for Materials Testing and Research)
ETH/EPF	Eidgenössische Technische Hochschule/ Ecole Polytechnique Federale
EUCOMED	European Medical Technology Industry Association
FTE	Full-time equivalent
IT	Information technology
Large company	250 or more employees
m	Million
Medium-sized company	Between 50 and 249 employees
Micro-sized company	Less than 10 employees
NOGA	Nomenclature Générale des Activités Économiques
OPET	Federal Office for Professional Education and Technology
Osec	Osec Business Network Switzerland; an association under private law supporting Swiss foreign trade
Manufacturers	Companies producing medical devices under their own brand
PSI	Paul Scherrer Institut
Service providers	Companies providing specialized services to medical device companies or for medical devices
Small company	Between 10 and 49 employees
SMTI	Swiss medical technology industry
Suppliers	Companies supplying major components to the medical technology industry without having their own brand. Often these companies also supply to other related industries
Traders and distributors	Companies trading in or selling medical devices, such as local wholesalers and affiliates of national or international companies



Appendix 2: SMTI knowledge base



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- Mr. Biedermann is involved in various innovation programs in Switzerland, such as ManuFuture-CH
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- Peter Biedermann studied Chemistry and Environmental Sciences at the universities of applied sciences in Berne and Basel

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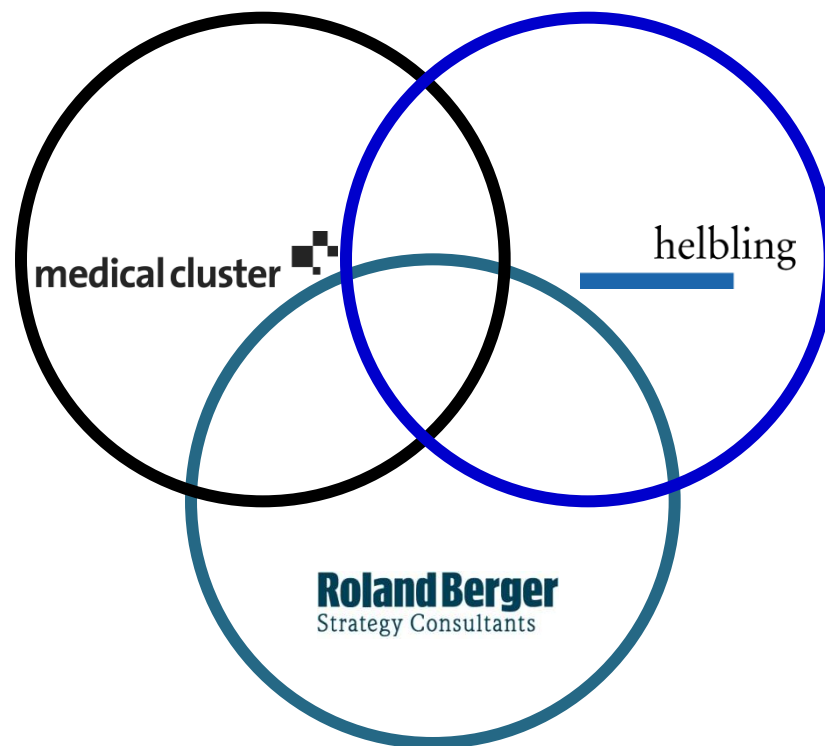
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Three strong partners join forces to examine the Swiss medical technology industry (SMTI)



Sharing expertise

- **Medical Cluster**

Medical Cluster brings together manufacturers, suppliers, service providers and research and development firms from all over Switzerland. We offer platforms and assistance to ensure that medical technology in Switzerland continues to enjoy the optimum conditions for growth. The main accents are on supporting innovation and optimizing knowledge and technology transfer

- **Helbling Management Consulting**

Helbling supports organizations in the development and implementation of innovative entrepreneurial strategies that lead to accelerated growth, increased financial performance and solid corporate values. Helbling is unique through the ability to integrate a spectrum of professional know-how, skills and experience. Our mission: Valuable through Innovation

- **Roland Berger Strategy Consultants**

The Roland Berger Pharma & Healthcare Competence Center supports life-science players in seizing opportunities and mastering challenges. Besides traditional consulting areas such as marketing, organization, cost-cutting and M&A, we also provide input from our intensive analysis of current market trends and developments

Disclaimer

- The authors of this survey are aware of the scale of the Swiss medical technology industry. Official sources do not exist but it can be estimated that around 1,100 – 1,300 companies are fully or partially involved in the industry
- This document is based on a survey carried out in the summer of 2008, involving 296 companies in the field of medical devices in Switzerland. It makes use of the database of Medical Cluster and additional desk research. The statistical data presented reflects the opinions of the participating companies at the time of the survey and may therefore not be a true reflection of some aspects of the overall industry
- The partners involved in the study confirm that the collection, analysis and interpretation of data was carried out carefully and anonymously. However, they do not guarantee the accuracy of the data. Use of information in this document remains solely the responsibility of the reader
- All rights relating to this document remain with the three cooperating partners: Medical Cluster, Helbling Management Consulting AG and Roland Berger AG Strategy Consultants