The Swiss Medical Technology Industry 2012
“In The Wake Of The Storm”

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SMTI 2012 – In The Wake Of The Storm

This year's Swiss Medtech Industry (SMTI) survey is based on the biggest industry participation to date – over 320 firms and multiple experts contributed to the findings of the 2012 survey.

Since publishing the SMTI 2010 survey, the economic climate has become even tougher. So far, the **SMTI is still stable since managers have countered problems by establishing higher efficiency in their business conduct** to overcome price and cost pressures, and the permanent exposure to the strong Swiss Franc in the prolonged course of the international economic down-turn. However, current strategies may loose growth potential in the long run.

The SMTI is now faced with **a multitude of external** factors. These center around new technologies from adjacent sectors, constantly **rising competition both in domestic and international markets**, ever **tightening regulations** and trade restrictions in addition to more **stringent health care budgets** and an increasing **professionalization of provider procurement**. On top of this, **an unnoticeable consolidation** is already happening on a global scale. While big players take advantage of **market access lock-out strategies**, smaller firms can only stay remote in procurement decisions of healthcare providers. Lastly, **diminishing loyalty in traditional relationships** between manufacturers and suppliers may **endanger the highly aligned Swiss medtech value chain**.

Successful SMTI firms must be able to cope with these challenges in the immediate future. A growing challenge is a persistent **unmet need for experts** especially in regulatory affairs, compliance and quality management and a **high demand for managerial skills** across the industry. Yet, they only invest in short-term sales growth activities. Today's **traditional engineering expertise as such is insufficient to sustain tomorrow's growth and to survive competition**.

The virtues of cross-functional managerial strengths is that they open networked innovations, holistic and lean treatment solutions, and patient centric mobile/home care but will **require a new type of manager to ensure tomorrows leadership position** in the vast diversity of SMTI competencies.

In this respect, the **SMTI surveys have become an essential instrument in a well-equipped managerial toolkit** even reaching beyond the sector itself. Today, we are pleased to provide the stakeholder community with micro- and macro economical insights and strategic options for setting an appropriate course of action in **shaping the tomorrow of this dynamic, multifaceted growth industry**.

We wish to sincerely thank the participating SMTI firms and managers, sponsors, industry experts and the advisory board members for investing their time in constructive discussions and for sharing the in-depth industry insights reflected in this report.

Peter Biedermann, Dr. Patrick Dümmler, Beatus Hofrichter
Publisher and authors of the SMTI 2012, September 2012

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Management summary

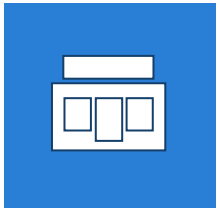
Management summary (1/2)

Foundation of the Swiss medtech ecosystem	▪ Switzerland has a unique medtech ecosystem. Every step in the value chain can be fully achieved within a small geographical proximity, making Switzerland a top global medtech industry hotspot ▪ The roots of the Swiss Medical Technology Industry (SMTI) are found in the mechanical engineering and watch making industry ▪ Factors which have contributed towards the success of the medtech ecosystem are collaboration, quality dedication, business consistency, and many family owned SMEs with a long-term perspective
State of the SMTI	▪ More than 50% of the ten biggest SMTI companies are foreign owned which makes Switzerland dependent on decisions made in the U.S. and other international global headquarters ▪ Continued price pressure based on tighter healthcare budgets and the increasing power of purchasers ▪ SMTI companies shift towards more goods being sourced from abroad; suppliers increasingly absorb the price pressure from manufacturers. Diminishing loyalty in traditional relations between medtech value chain participants ▪ As a consequence, turnover growth is minimal, margins erode and consolidation in the industry between SMEs is expected to increase ▪ R&D expenditures continue to be high, leading to a young product portfolio. Micro companies in particular carry the weight of innovation ▪ Despite the current environment, growth expectations are around +6% for 2012/2013 though compared to earlier studies growth has almost halved ▪ Employment figures continued to rise (+3%) but growth slowed down compared to earlier years
Challenges	▪ The healthcare environment puts international medtech firms under pressure globally; around 90% of firms face critical issueses in resource management, competition and regulatory affairs ▪ For 84% of SMTI companies price pressure is the dominating challenge, followed by the strong Swiss Franc ▪ 98% of suppliers are exposed to the strong Swiss Franc, overall 80% of SMTI companies are affected by the current exchange rates ▪ Consolidation is not yet perceived as a challenge by companies

Management summary (2/2)

Management actions	▪ Focus areas are compliance, innovation, short-term growth, and operational excellence ▪ Top priorities are optimization of marketing, extending market insights, improvement of operational processes and profitability, expansion to new markets, improving regulatory knowledge and new business models ▪ Companies that expect above average growth rates for 2012 are focused on improving operational processes and profitability with less priority given to expansion to new markets
International perspective	▪ Top export destinations for the SMTI are the U.S., Germany, and France. Due to major distribution centers, the Netherlands and Belgium are also among the 5 top export destinations ▪ A vast majority of companies expect a positive growth potential in Germany, Switzerland, and North America ▪ Among emerging markets large potential is seen in China and Brazil, with India and Russia falling second ▪ For the vast majority of SMTI companies the highest market entry barriers are still perceived in Russia, followed by China, Brazil, India and Japan ▪ 50% of all companies plan to invest abroad until 2015 mainly in marketing & sales to be closer to customers
Outlook and conclusion	▪ Market access is the dominant factor for long-term success; the building of non-traditional business models defines the future growth path ▪ Poor emphasis has been placed on human resource development and recruiting/educational efforts, resulting in a shortage of expert knowledge (e.g. compliance, quality management, HEOR and regulatory affairs, and cross-functional management talent) which impedes international competitiveness for export-dependent SMTI firms ▪ Larger manufacturers proactively seek “Own the Disease” model, i.e. operate as partial/full healthcare providers through forward integration to circumvent competition and achieve tighter market access ▪ Basic operational efficiencies and commercial excellence programs currently divert management attentions from establishing a long-term competitive edge through innovative business models and advancements in world class operations ▪ The size of many SMTI companies is inadequate to meet current challenges, but consolidation within and amongst assortments and/or channels is of limited attention to companies ▪ The danger exists that under current pressures the SMTI ecosystem could dissolve, resulting in a loss of local know how

Key facts about the Swiss Medical Technology Industry (SMTI)[1)]

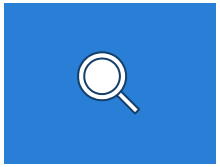


- In total the core of the SMTI consists of roughly 1,600 companies that can be split into four categories:
  - 386 manufacturers and 477 suppliers to the medtech industry[2)]
  - 415 service providers and 340 traders & distributors[2)]
- Medical technology includes non-metabolic products, instruments and equipment that serve diagnostic purposes or improve general well-being, life expectancy or the quality of life of patients

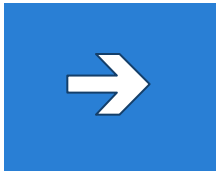
CHF

- Total turnover is estimated to be CHF 12.5bn (2011), this is 2.1% of the Swiss GDP and the highest share amongst all leading medtech regions
- Companies still expect a significant positive growth of +5.9% (2012) and +6.6% (2013), despite the many challenges ahead
- 62% of manufacturers and 73% of suppliers achieve a turnover of CHF10m p.a. or less

- The number of employees has grown from 49,000 (2009) to more than 51,000 (2011). Compared with 2007 (45,000) however, growth has slowed down
- The SMTI is dominated by SMEs, roughly half of all Swiss medtech companies have less than 10 employees, only 4% of all companies have 250 or more employees
- 1.1% of Swiss workforce work in the SMTI – this is the highest share among major medtech regions



- Manufacturers spend 13% of their turnover on R&D while suppliers spend 8%. In total the SMTI spends about CHF 1.4bn on R&D
- Due to high R&D investments the product portfolio is very young. On average half of the product portfolio is less than 5 years old



- Total exports of medtech manufacturers is estimated to be CHF 8.8bn, accounting for 5.5% of total Swiss exports
- Exports of suppliers is estimated at CHF 2.1bn, equaling a total of all Swiss medtech exports of CHF 10.9bn
- The SMTI contributes a significant share of more than 20% to the total of the Swiss trade surplus

1) Estimations of the authors based on SMTI survey data
2) Based on Medical Cluster database

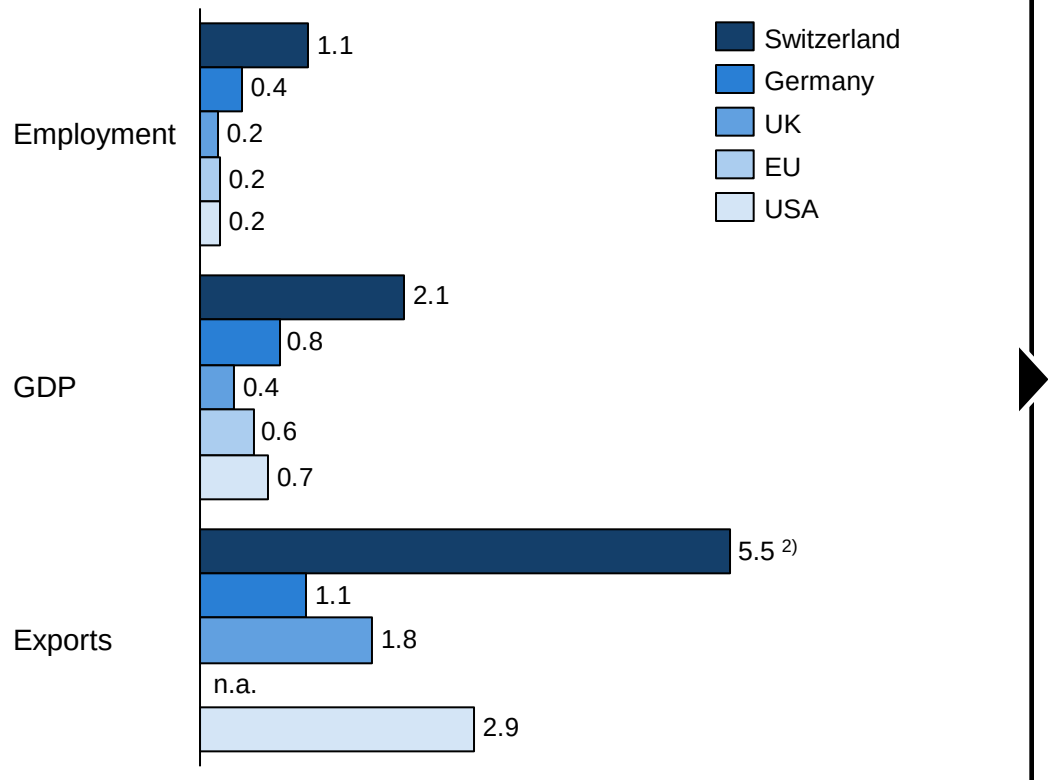
A. Profile of the SMTI

Key points

Strong medtech position	▪ Switzerland is among the global hotspots for medtech, showing higher relative medtech shares of employment, GDP and exports than Germany, the UK, the EU, and the U.S. ▪ 5.5% of all export goods from Switzerland are medical devices (+ 0.5% compared with 2010) ▪ Most of Swiss medtech exports go to the U.S. which is still the biggest medtech market worldwide followed by Germany. Japan, the second biggest medtech market ranks only sixth for Swiss imports, reflecting high entry barriers for most non-Japanese medtech companies ▪ Switzerland shows a strong medtech trade surplus with most countries including the U.S. and Germany
A unique Swiss medtech ecosystem	▪ Switzerland has a strong home market with the second highest healthcare expenditures per capita ▪ Success factors of the unique Swiss medtech ecosystem are collaboration, quality dedication, consistency in doing business, and the dominating family owned SMEs with a long-term perspective ▪ Today every step of the medtech value chain can be mapped in Switzerland – there is a broad variety of medtech skills and know-how at the highest level
Profile of the SMTI	▪ Roughly half of all Swiss medtech companies have less than 10 employees, only 4% of all companies have 250 or more employees. This typical SME structure is also reflected by the average turnover: The majority of medtech companies have a turnover of CHF 5m or less ▪ In spite of current challenges the SMTI is expected to grow by about 6% in 2012 and 2013. This is still above overall economic growth but less than in previous years ▪ Manufacturers spend 13% of their turnover on R&D, the respective number for suppliers is 8%. The bigger the company the lower the average relative share of medtech R&D expenditures ▪ Manufacturers often collaborate with universities, and suppliers show a high degree of collaboration with their clients. Dominating is the collaboration in the field of applied research ▪ The lion's share of production is based in Switzerland: 63% of manufacturers and 77% of suppliers possess production capacities only in Switzerland, 32% of manufacturers and 19% of suppliers additionally have manufacturing facilities abroad

Switzerland is a global hotspot for medtech

INTERNATIONAL MEDTECH FOCUS [% of respective total][1)]



COMMENTS

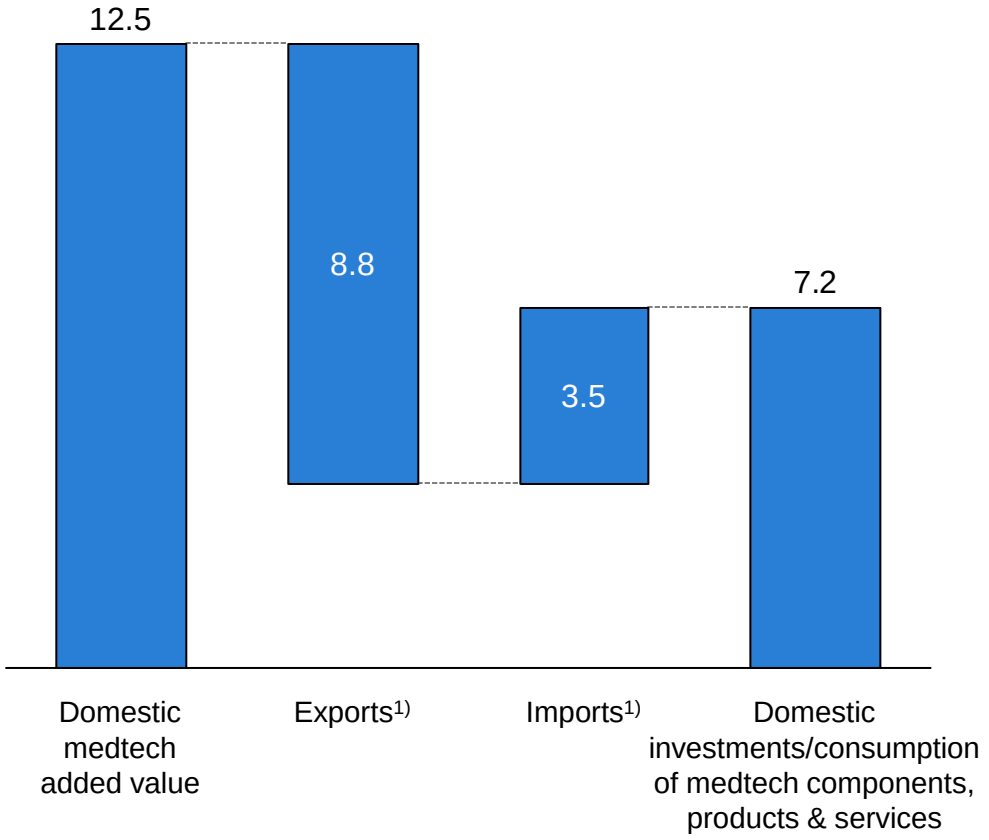
- Switzerland possesses an active medical technology industry that can rely on a strong network of related companies and institutions that create an ideal breeding ground for the industry (cluster)
- Compared to other major medtech countries the relative share of the SMTI is significantly higher in many important economic figures
- Today 1.1% of all employment and 4.8% of all industrial employment in Switzerland is in the medtech industry
- Remarkable – and in line with several other Swiss industries – is the high relative share of exports reflecting the international strength of Swiss medtech products
- Compared to total Swiss exports the share of medtech exports increased from 5% to 5.5% from 2010 to 2011

1) Data from 2011 whenever possible, elsewhere Data from 2010
2) Only finished products, figure does not include medtech components and specialized machines used for medtech production. Including all products related to the medtech industry it can be assumed that the relative share of Swiss medtech exports is roughly 8%

Source: Destatis, Eucomed, Eurostat, UK National Statistics, Spectaris, IMF, Bundesamt für Statistik, US Bureau of statistics

The SMTI significantly contributes to the Swiss trade surplus

KEY TRADE FIGURES OF THE SMTI 2011 [CHF bn]



COMMENTS

- It is estimated that the SMTI contributed CHF 5.3bn to the Swiss trade surplus of CHF 23.5bn in 2011
- According to our definition of medtech, the domestic market is worth around CHF 7.2bn. which is approximately 11% of Swiss healthcare expenditures

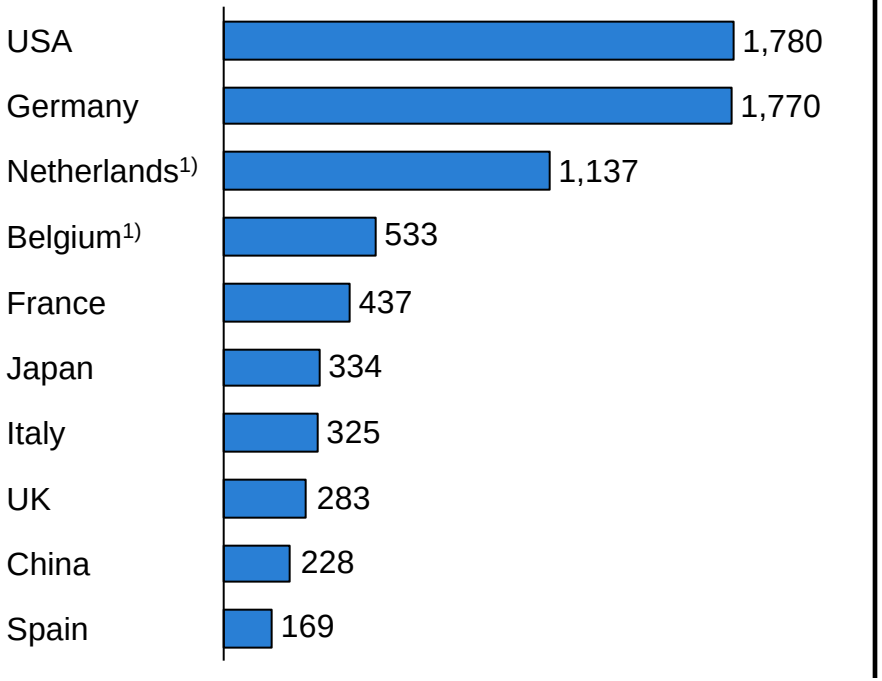
FURTHER OBSERVATIONS

- Only finished medtech products are captured by the trade statistics
- It is estimated that components from medtech suppliers amount for another CHF 2.1bn, totaling Swiss medtech exports to be worth CHF 10.9bn

1) Reflect finished goods only
Source: Export and import data Swiss Federal Customs Administration; total healthcare costs data Federal Statistical Office

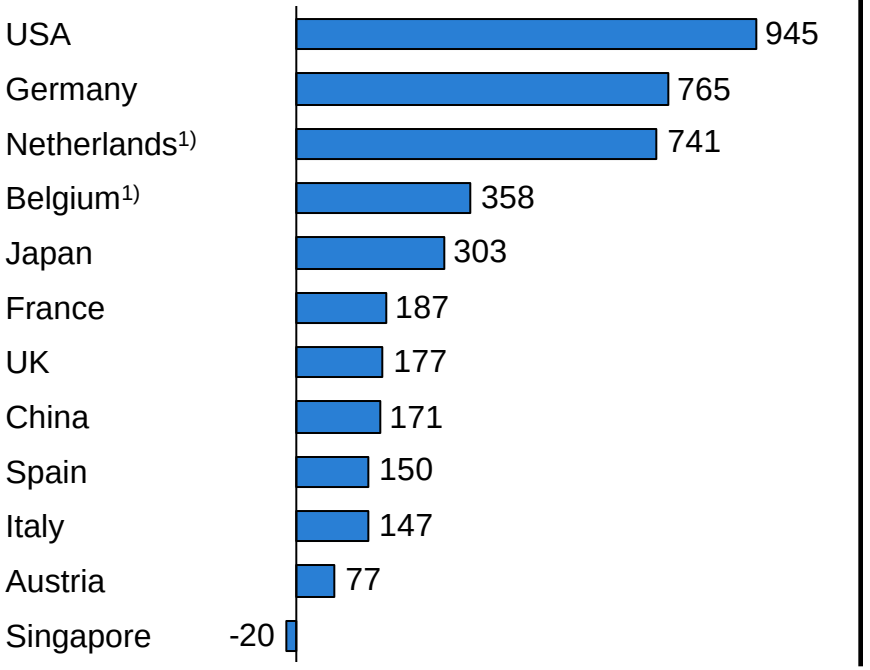
Switzerland shows a high trade balance surplus for finished medtech products

COUNTRY RANKING OF TOP EXPORT DESTINATIONS [CHF m]



- Among the top 12 trading partners for the Swiss medtech industry, only Singapore shows a negative trading balance, (i.e. Switzerland imports more than it exports to Singapore)

COUNTRY RANKING OF TOP TRADING SURPLUS [CHF m]

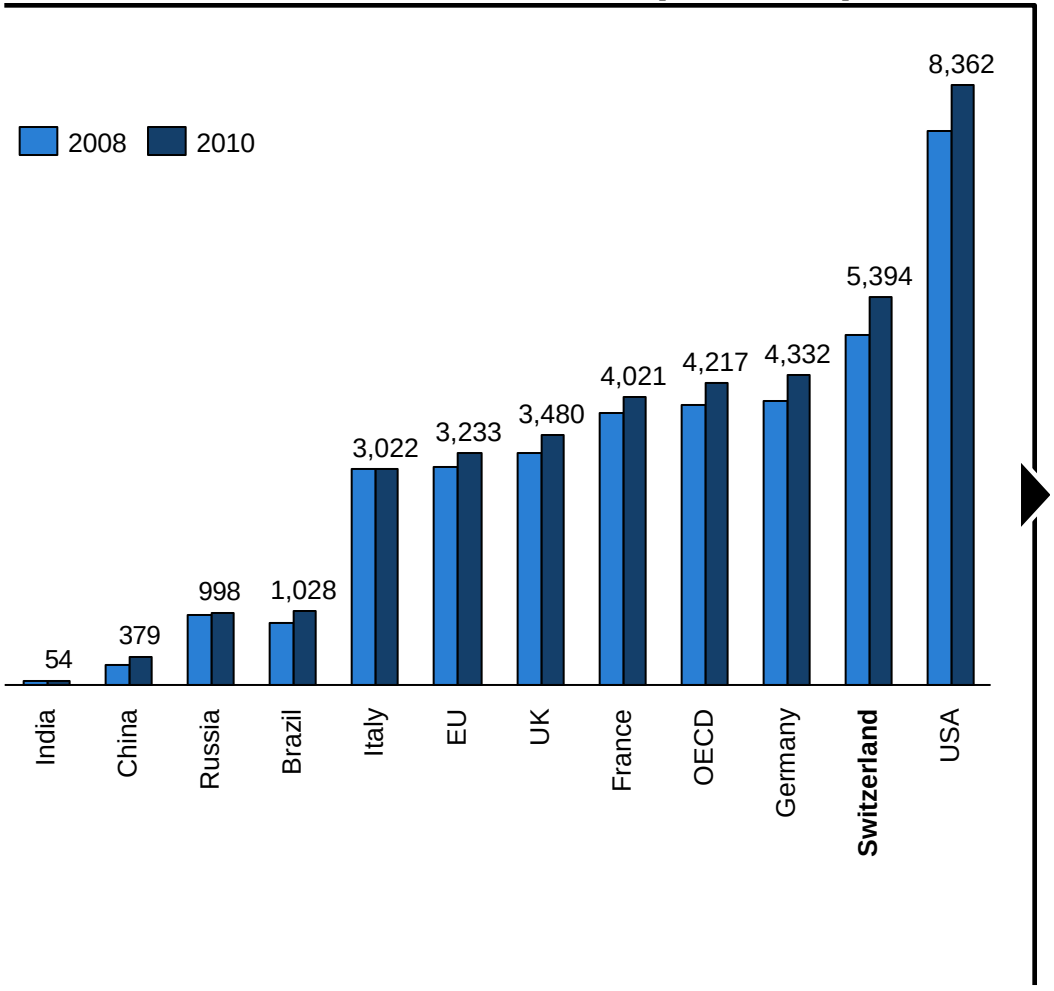


- One reason might be that Singapore, like the Netherlands and Belgium are known for their distribution centers
- The overall balance for the SMTI however is highly positive, accounting to 5.5% of total Swiss exports

1) Netherlands and Belgium serve as distribution centers for several medtech companies; the statistics are collected with the “country of shipment”-principle
Source: Swiss Federal Customs Administration

The SMTI has a strong home market

HEALTHCARE EXPENDITURE PER CAPITA [current USD]



COMMENTS

- The Swiss per capita healthcare expenditures are among the highest in the world, making Switzerland an attractive market for medical devices
- Between 2000 and 2010 the CAGR of worldwide healthcare expenditures per capita in current USD was 7.0%, with 8.3% the respective for Switzerland
- 2000-2010 healthcare expenditures per capita grew at a higher rate than the GDP per capita (CAGR, in current USD): world (5.7%), Switzerland (6.9%)

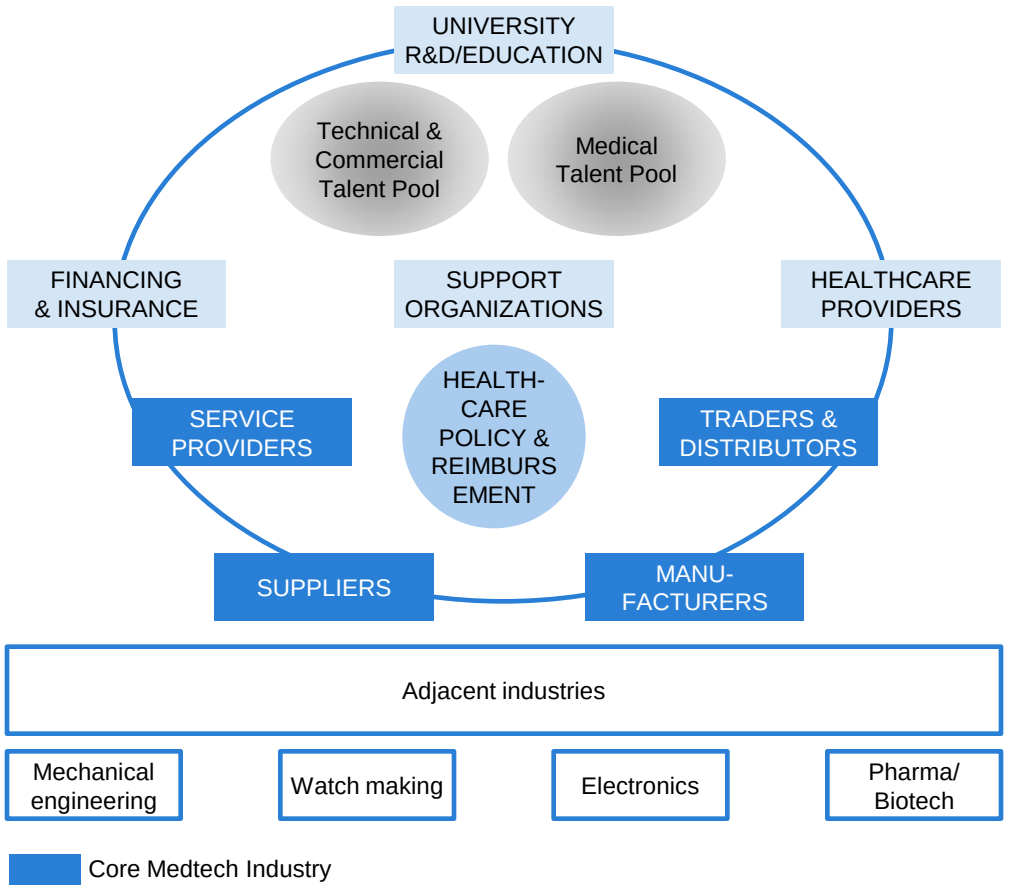
FURTHER OBSERVATIONS

- Even in relation to the GDP Swiss healthcare expenditures are high: After the USA (18%) the group of Switzerland, France, and Germany follows (12%). The OECD and EU average is 10%
- The emerging BRIC countries all have healthcare expenditures of less than 10%: Brazil (9%), Russia and China (5%) and India (4%)

Source: Worldbank

The Swiss medtech industry is embedded in a unique ecosystem

SWISS MEDTECH ECOSYSTEM [illustrative]



COMMENTS

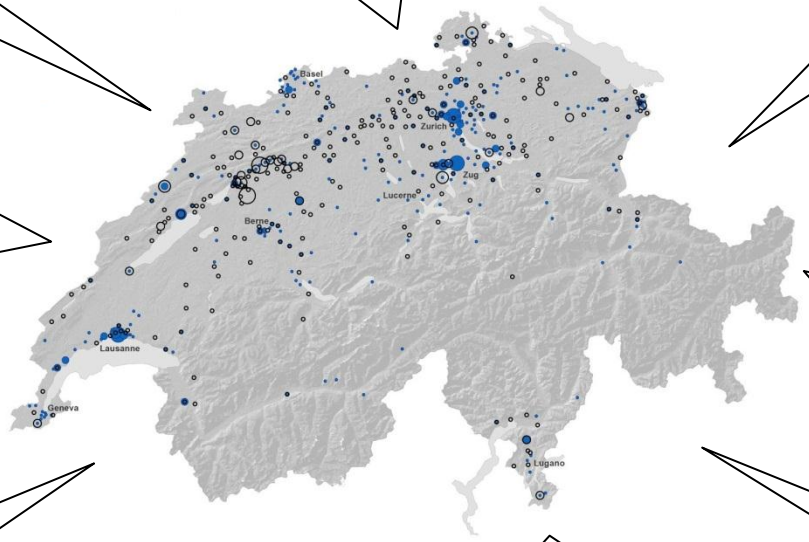
- The Swiss medtech industry is embedded in a unique ecosystem. Its main success factors are:
  - Collaboration, long-term relationships and quality dedication
  - Sharing the same culture, mindset and approach of doing business domestically and across borders
  - High number of family owned SMEs with a long-term perspective
  - Travelling times are short, high degree of spatial proximity
- This model is increasingly under pressure from:
  - Increasing regulatory requirements that put an administrative burden on medtech SMEs
  - Cost pressure of healthcare policy and thus healthcare providers
  - Current strength of the CHF making production and sourcing of components abroad more attractive

Eight clear assets unique to Switzerland attract international medtech players

Cutting-edge research[1)] at hospitals and universities

"Swiss made" quality

Highly capable suppliers in close proximity



Highly qualified personnel

Free and open job market especially for talent and management skills

Stable political environment

Favorable tax system

Attractive living conditions and infrastructure

1) Highest density of patent applications in the medtech sector within Europe (European Patent Office 2011)

Source: SMTI 2011, 35 C-level interviews with leading medtech firms

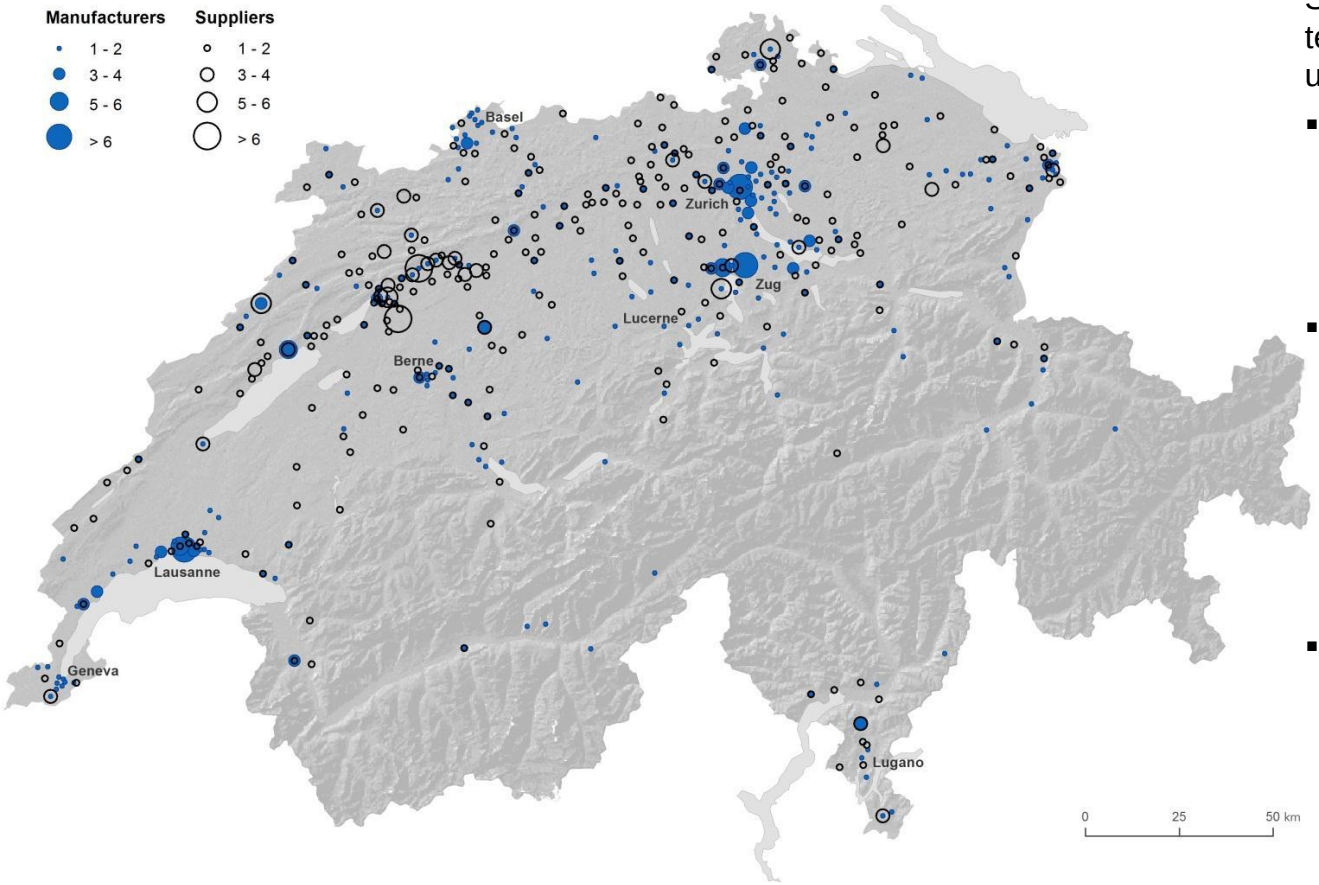
Switzerland is an attractive manufacturing site for large foreign firms[1)]

No.	Company[2)]	Sub-section of market	Head-quarters	Employees in Switzerland	Global sales [CHF m]	1 year global sales growth [%]	R&D expenses [CHF m]	R&D/sales [%]
1	J&J Medical	Orthopedics, neurosurgery, cardiology, surgery	USA	4,500	25,570	2	1,751	6.8
2	Roche Diagnostics	In-vitro diagnostics	CH	2,110	9,700	6	900	9.2
3	Medtronic	Implants to treat cardiac rhythm, cardiovascular and neurological diseases; treatments for spinal disorder[3)]	USA	1,200	15,787	4	1,400	9
4	Sonova	Hearing systems	CH	1,200	1,620	0.2	116	7.2
5	Zimmer	Orthopedics	USA	950	4,370	5	218	5
6	B. Braun	Orthopedics, hospital aids and medical devices	DE	940	5,530	4	216	4
7	Ypsomed	Injection systems	CH	800	249	-5	25	10
8	Straumann	Dental implants	CH	830	694	6	39	6
9	Stryker	Orthopedics	USA	650	7,200	0	385	6
				∑ 13,180		Ø 2.5		Ø 7

1) Approximately, manufacturers only, figures for reporting year 2011/12, exchange rates used: 0.9693 USD/CHF
2) The authors believe that among the 10 biggest medtech employers Hamilton Medical should also be listed. However, Hamilton Medical is not willing to communicate any company data
3) Swiss made devices only

Source: Annual company reports and press offices

Switzerland has one of the highest densities of medtech companies



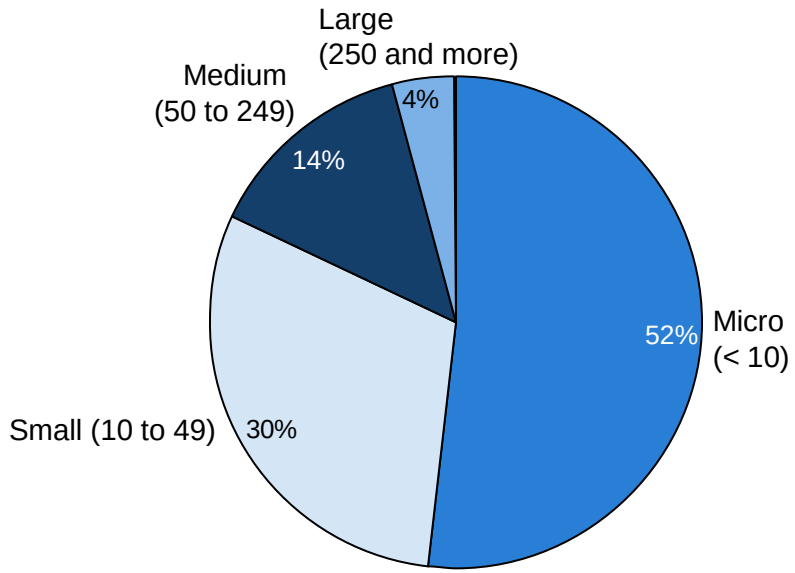
COMMENTS

Switzerland has a strong medical technology network which creates a unique ecosystem for the industry

- Several leading universities like the ETH Zurich and the EPF Lausanne, Universities of Berne, Basel, and Geneva generate medtech spin-offs
- The Geneva-Lausanne-Berne region reflects the industrial heritage of the watch making industry. Many suppliers to the medtech industry are located in this region and have specialized know-how such as micro technology and automation
- The Zurich-Basel-Lucerne region is based on the heritage of the machine engineering and manufacturing industry as well as the pharmaceutical industry which has created many medtech manufacturers

SMEs form the backbone of the Swiss medtech industry

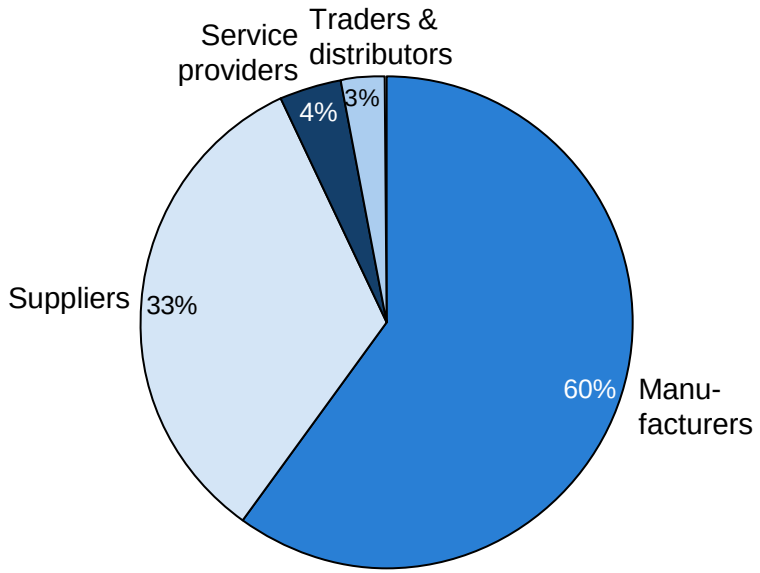
DISTRIBUTION OF COMPANIES BY NO. OF EMPLOYEES



n = 265

- The SMTI is largely composed of SMEs (<250 employees)
- Compared with the whole industrial sector in Switzerland the SMTI has significantly fewer micro-companies: 52% versus 79%

DISTRIBUTION OF EMPLOYEES BY CATEGORY

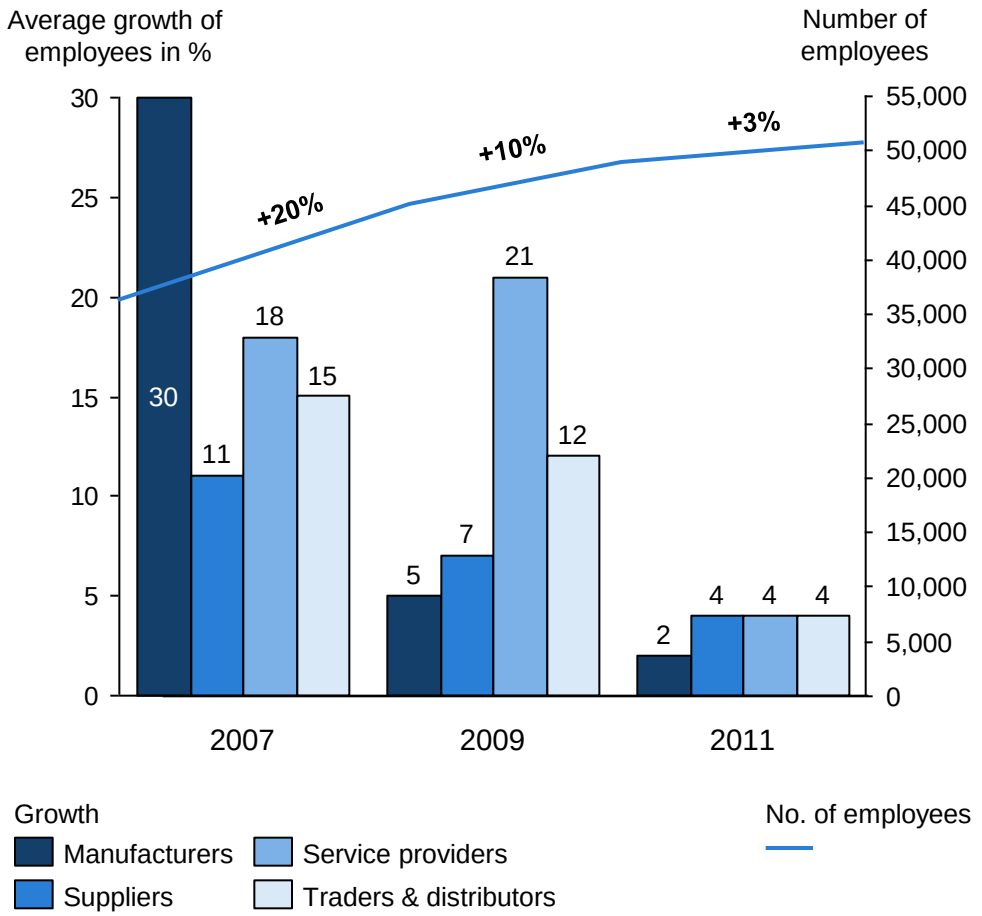


n = 265

- Most medtech employees are working for manufacturing companies
- Service providers and suppliers are mainly small and micro companies

SMTI employment growth rates constantly outperform industrial average

GROWTH IN NO. OF EMPLOYEES [% change vs. previous two years]



COMMENTS

- Average growth in the number of employees slowed down from recent years but still yields a growth rate of 3% (2010/11)
- 92% of SMTI firms did not decrease their number of employees over the last two years despite the economic difficulties in exporting goods to major European markets

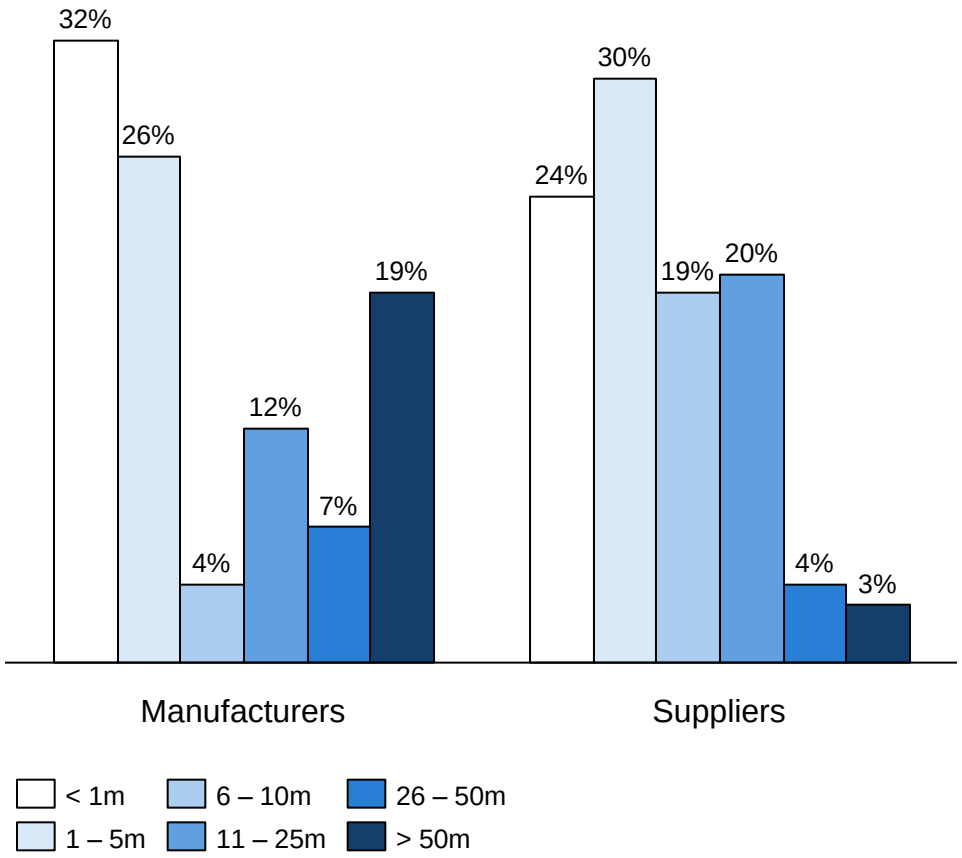
FURTHER OBSERVATIONS

- Compared with other industries in Switzerland the medtech industry is still one of the fastest growing[1)]:
  - Watch making + 3%
  - Overall industry sector + 2%
  - Machine engineering - 1%
- Today it is estimated, that the medtech industry in Switzerland employees around 51,000 people
- Despite the economic down-turn SMTI firms experienced only a modest rise in temporary employment and lay-offs
- Investments in recruiting have diminished

1) Source: Bundesamt für Statistik

The majority of companies have a turnover of CHF 5m or less

COMPANY DISTRIBUTION BY TURNOVER [CHF m, 2011]



COMMENTS

- 62% of medtech manufacturers in Switzerland have a turnover of CHF 10m or less. For suppliers the number is even greater at 73%
- Manufacturers often face the difficulty of growing from a company with a turnover of CHF 5m or less to a company with more than CHF 50m in turnover

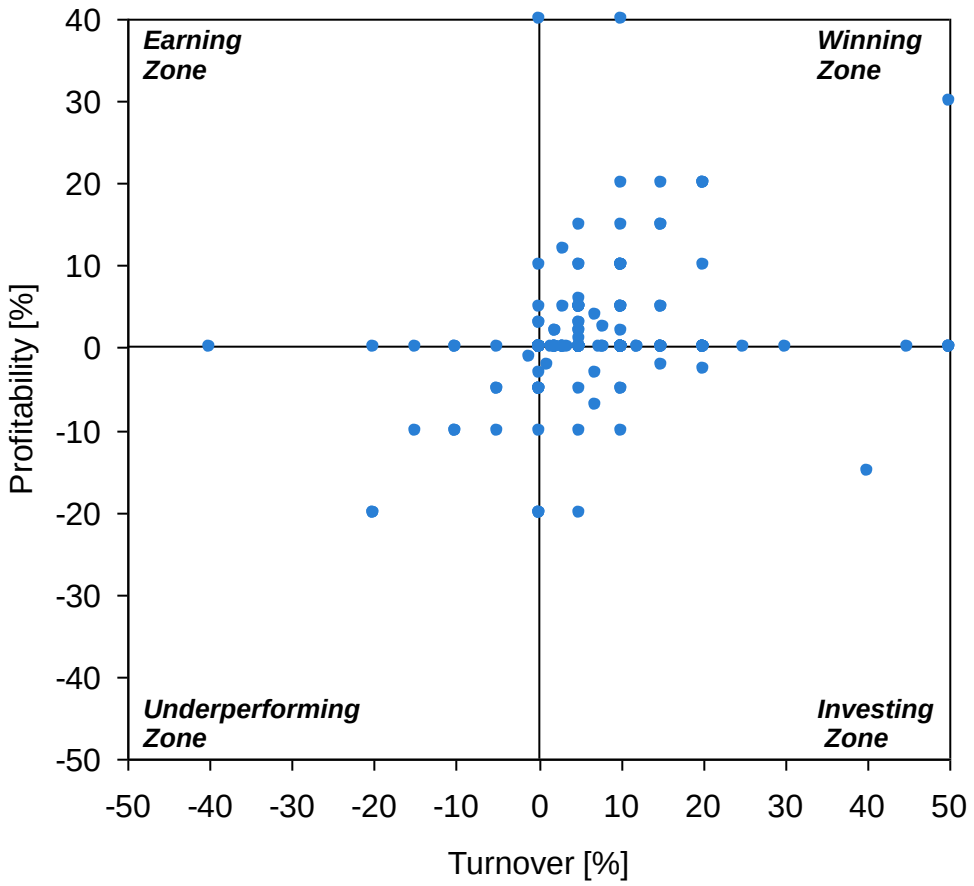
FURTHER OBSERVATIONS

- It can be argued that the critical size for a medtech company, especially manufacturers, has increased in the last years
- Given challenges like market access and regulatory issues, non-technical know-how requirements have risen and require an adaptation of internal company qualifications

Manufacturers n = 57, suppliers n = 97

The 2012 outlook of most SMTI companies is positive

GROWTH EXPECTATIONS FOR 2012



n = 217

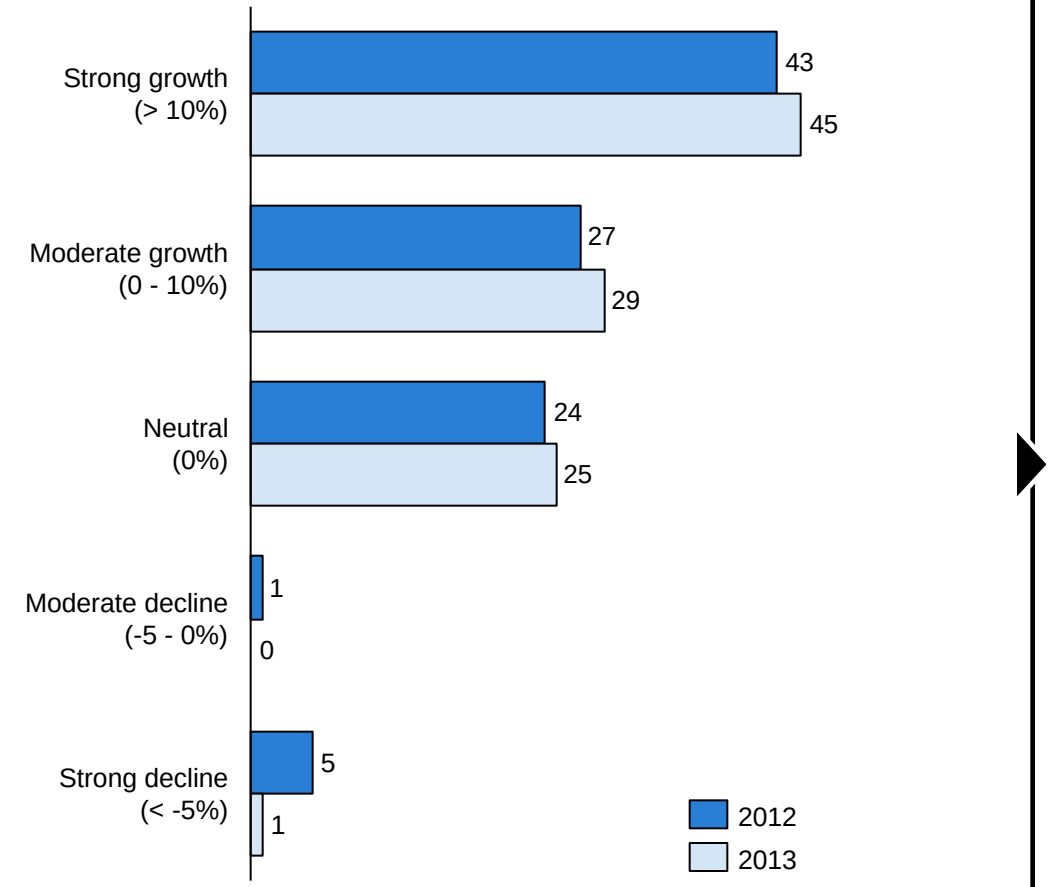
Note: six outliers have been omitted for clarity

COMMENTS

- Average growth expectations for 2012 is 5.9% and is even higher for 2013 with 6.6%
- Given their low starting point start-up companies expect the highest growth rates in profitability and turnover, placing most of them in the “winning zone”
- Most manufacturers expect a growing turnover in conjunction with increased profitability. A small percentage of manufacturers however will experience shrinking turnover and profitability
- The picture for suppliers is diverse. While a small percentage will experience extremes in either direction, the majority of companies can expect a stable development of turnover and profitability
- Service providers expect growth in either turnover *or* profitability, reflecting two business patterns, (i.e. investment/expansion mode or consolidation of services and catalyzing existing portfolio to improve profitability, manifesting market positions)
- Traders & distributors gather around the “zero growth” region, expecting to maintain current profitability and turnover

SMTI firms expect a solid growth of 6% in global sales over the next two years

EXPECTED GROWTH OF TURNOVER [% of answers]



n = 274 (2012)
n = 246 (2013)

COMMENTS

High and moderate growth is expected by most companies surveyed

Average growth expectations
- 2012: 5.9%
- 2013: 6.6%

Service providers expect the biggest growth
- 2012: 11.9%
- 2013: 10.3%

Suppliers' expectations center around the industry average
- 2012: 6.3%
- 2013: 6.3%

Manufacturers are less optimistic, but still above Swiss GDP growth
- 2012: 5.2%
- 2013: 6.6%

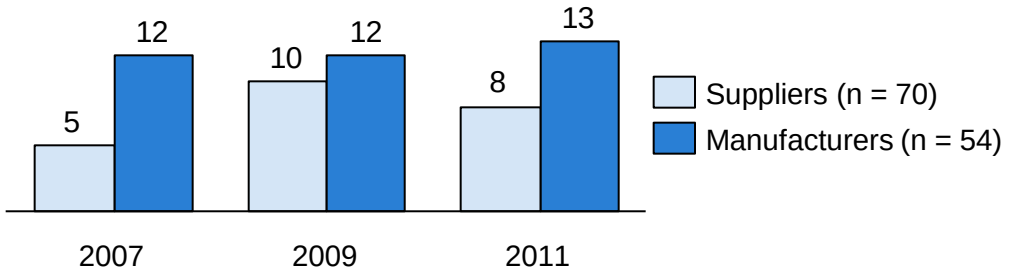
FURTHER OBSERVATIONS

- The SMTI is slightly outperforming European medtech industry average growth rate of 5%[1)]
- Overall Swiss GDP growth is 1.4%[2)] in 2012

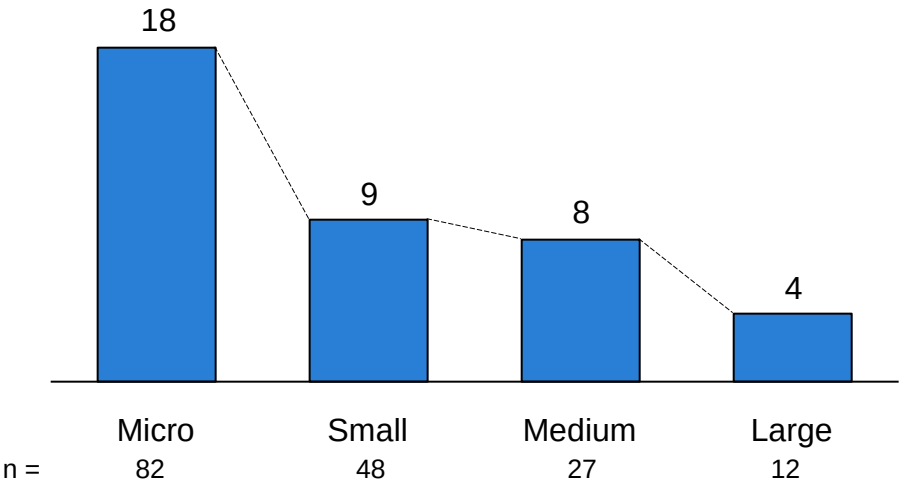
1) Eucomed
2) Federal Ministry of Economy (SECO)

The bigger the company the lower its relative R&D expenditures

R&D EXPENDITURES [% of turnover]



R&D EXPENDITURES BY COMPANY SIZE[1] [% of turnover, 2011]



1) Only manufacturers and suppliers

Source: European Patent Office, Interpharma, Eucomed

COMMENTS

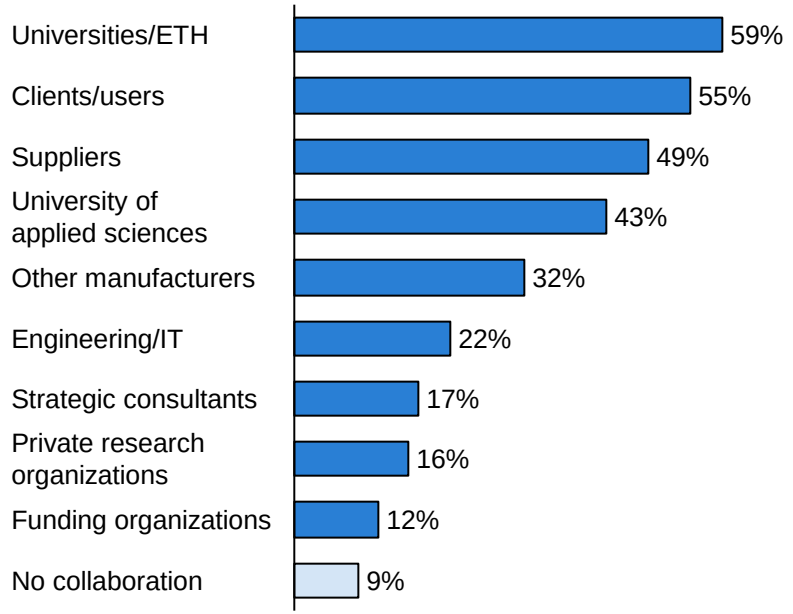
- R&D expenditures of manufacturers are constantly high reaching an average of 13% of turnover in 2011. Companies must constantly invest into R&D to stay competitive with novel or improved products
- Suppliers spend less of their turnover on R&D mostly due to their tailor made solutions according to the needs of their customers

FURTHER OBSERVATIONS

- Medtech suppliers and manufacturers on average spend 10% of their turnover on R&D - this is less than the pharma industry (15%) but more than the machine industry (3%)
- Medtech start-ups have a significantly higher share of R&D expenditures (22%) than older companies (> 5 years old; 8%)
- There is no significant difference of R&D expenditures between companies expecting a growing or declining turnover or profitability
- The European medtech industry has the highest share of patent applications of all industries. Half of the top 50 applicants at the European patent office do business in medtech

SMTI manufacturers heavily collaborate with multiple stakeholders

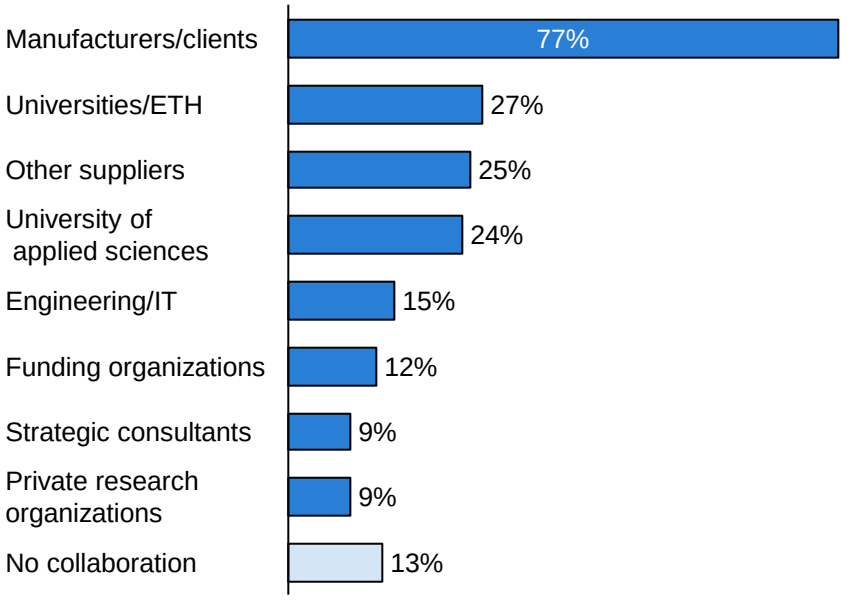
COLLABORATION PARTNER OF MANUFACTURERS



n = 69, multiple answers possible

- Collaboration with universities/ETH is most common
- Together with the collaboration from universities of applied sciences, public research and education organizations are the chosen collaboration partners for the manufacturers

COLLABORATION PARTNER OF SUPPLIERS

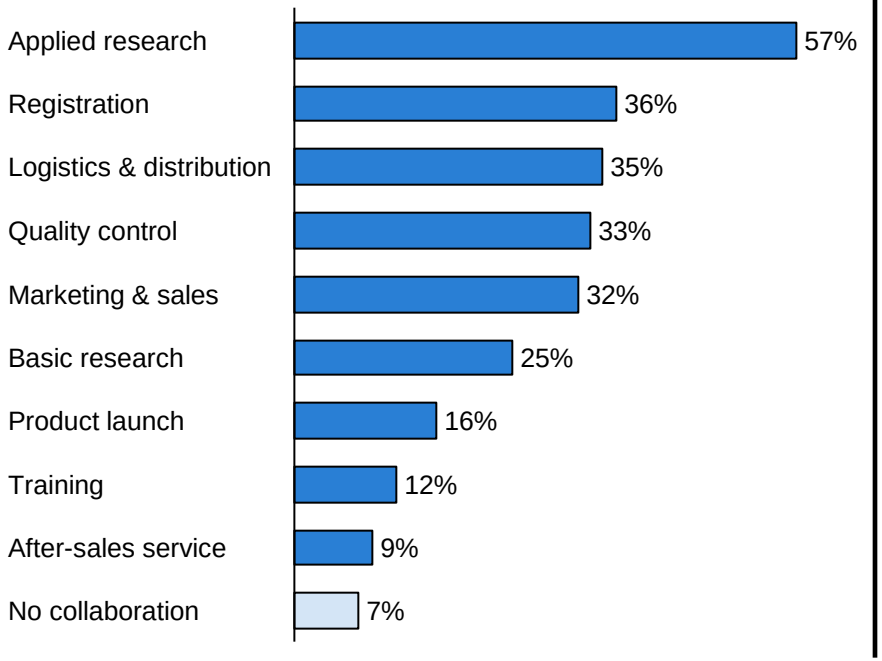


n = 115, multiple answers possible

- Most suppliers collaborate with their customers (medtech manufacturers) to innovate, improve or adapt current products
- Only a minor fraction collaborate with other stakeholders such as universities/ETH to work on new solutions for the medtech industry

Both manufacturers and suppliers primarily collaborate in applied research

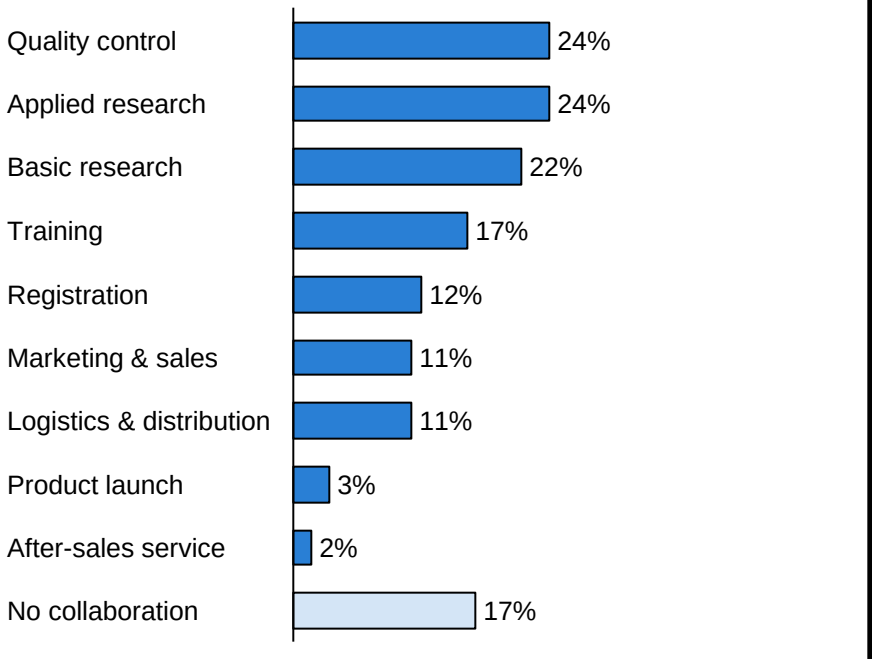
FUNCTIONAL COLLABORATION OF MANUFACTURERS



n = 69, multiple answers possible

- Collaboration in the field of applied research is highest which reflects the trend that universities are the preferred collaboration partners of manufacturers
- Since regulatory requirements are increasing and market access is becoming more difficult, strong support in registration and distribution know-how is essential

FUNCTIONAL COLLABORATION OF SUPPLIERS

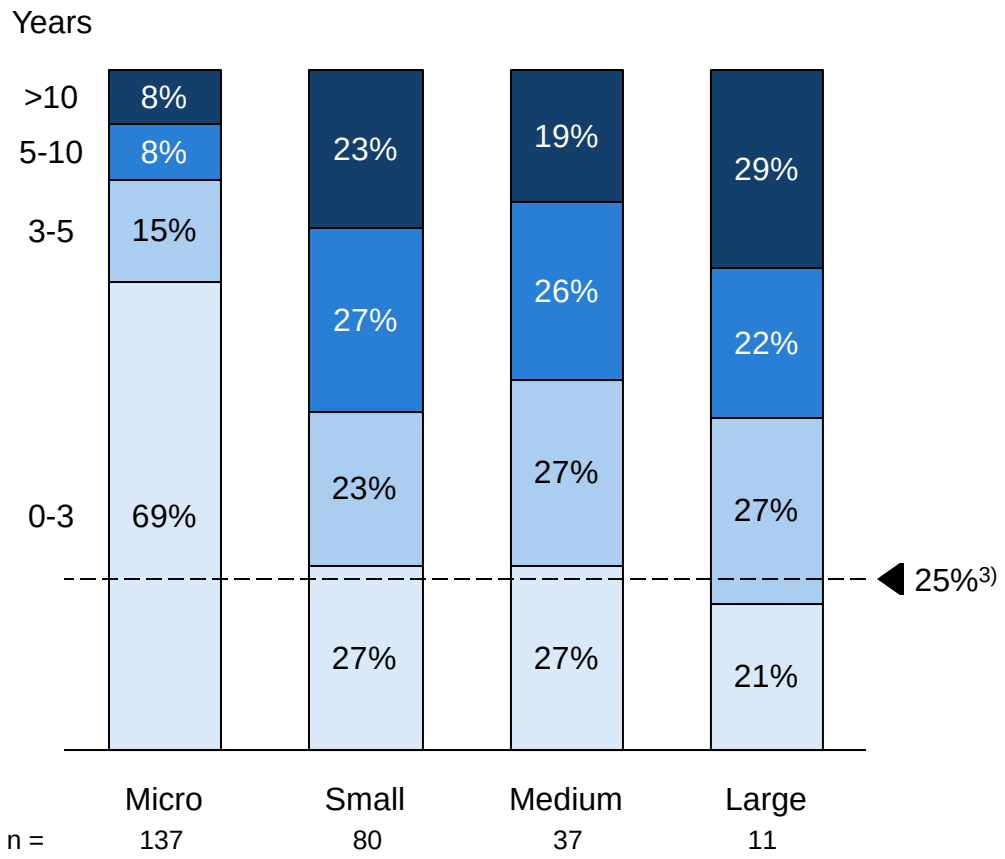


n = 115, multiple answers possible

- Collaborations for quality control issues reflects the collaboration with manufacturers where quality control and training are the dominating focus
- Applied research reflects the collaboration with universities/ETH

SMTI firms have a robust young product portfolio

AGE OF PRODUCT PORTFOLIO BY COMPANY SIZE[1)2)]



COMMENTS

- Micro and small companies carry the weight of innovation
- Micro manufacturers hold a very young product portfolio largely due to the high share of start-up companies in this class: 88% of all start-up companies belong to this class
- Bigger manufacturers show a more balanced product portfolio, roughly a quarter of the product portfolio is less than three years old
- Large manufacturers seem to have an older product portfolio though given their lower R&D expenses in relation to their turnover their product portfolio is still competitive

FURTHER OBSERVATIONS

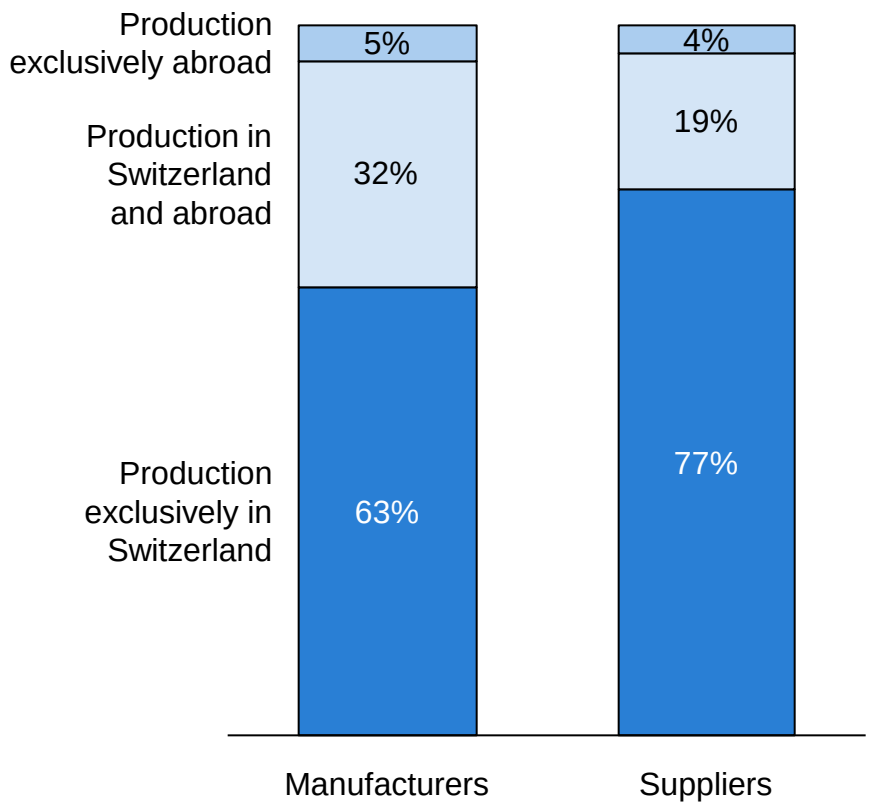
- 39% of manufacturers hold a major share of turnover made with products launched during the last three years

Company size: micro companies = 0-10 employees, small = 11-50, medium = 51-250, large = >250

1) Only manufacturers
2) In proportion of their product portfolio
3) Necessary treshold for juveniling portfolio with true innovation (see SMTI 2010)

The majority of SMTI firms produce in Switzerland…

PRODUCTION LOCATION [2011]



COMMENTS

- Manufacturers are more international in production than suppliers who mainly focus on Switzerland where the majority of their customers are located
- Only a small margin of manufacturers and suppliers produce solely abroad. These companies use Switzerland as their headquarter (HQ) with no associated production facilities

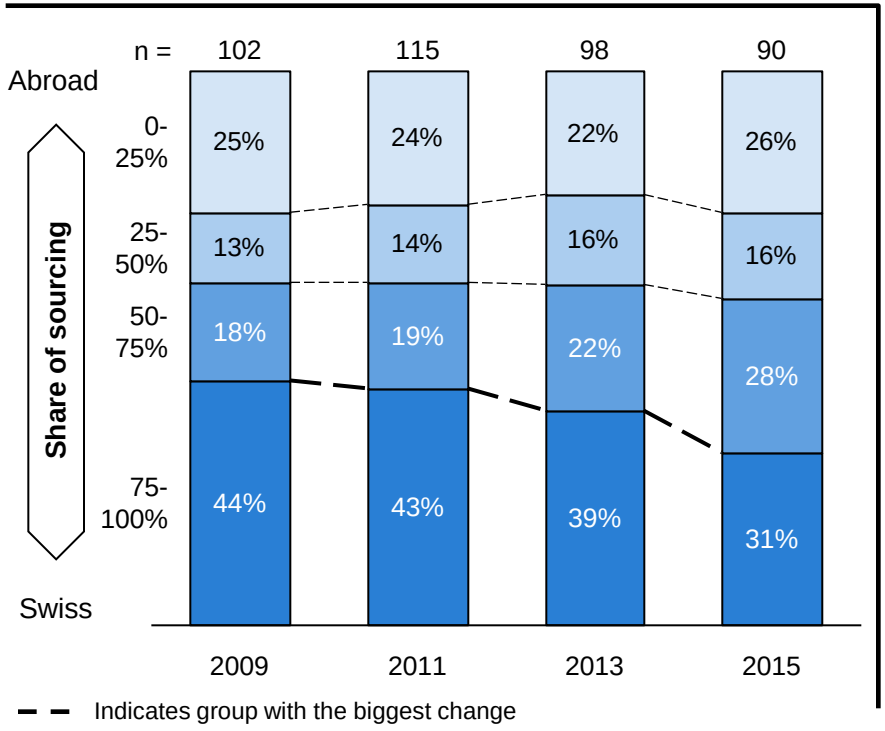
FURTHER OBSERVATIONS

- Many foreign medtech companies relocate only part of their production to Switzerland while others bring their EMEA HQ
- In the next three years 15% of Swiss medtech companies plan to invest in manufacturing sites abroad, mainly to gain flexibility in the event of sudden FOREX changes (natural hedging)
- Suppliers follow manufacturers in site decisions for closeness of production abroad

Manufacturers n = 56, suppliers n = 105

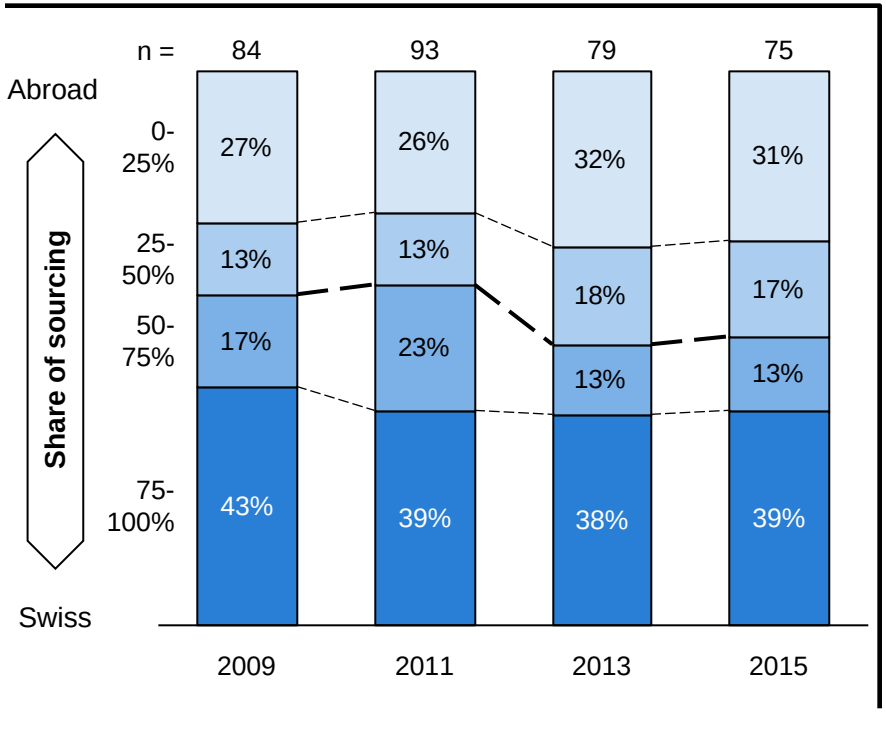
…but many companies shift towards more goods being sourced from abroad

SHARE OF **INTERMEDIATE GOODS** FROM CH [%]



- Suppliers and manufacturers plan to lower the share of intermediate goods and services (e.g. components, consulting) sourced from Switzerland
- Compared with 2011, companies with the highest share of Swiss sourcing intend to decrease its share by 28% until 2015

SHARE OF CAPITAL **INVESTMENT GOODS** FROM CH [%]



- Suppliers and manufacturers also plan to lower the share of investments goods (e.g. machines, equipment) sourced from Switzerland
- Compared with 2011, the shift from domestic to foreign sourcing will be highest in companies currently sourcing 50% or more from Switzerland

B. Results of the survey

Key points

Top Challenges

- The market environment for SMTI firms is getting tougher and the core SMTI challenges[1)] have intensified
- Resource management, regulatory affairs, and competition are the dominant challenge areas affecting more than 89% of SMTI firms
- Price pressure, the strong Swiss Franc and international competition are the specific challenges facing individual firms

Observations

- 93 - 98% of SMTI firms (particularly manufacturers, suppliers and traders & distributors) are affected by the current FOREX problem
- Suppliers are increasingly forced to absorb the price pressure from manufacturers
- More than 80% of companies producing goods are experiencing increasing pressure from customers and regulatory bodies
- 91% of manufacturers feel intense challenges through tighter product approval schemes
- Insufficient access to experienced and skilled employees and key opinion leaders remains a problem, particularly with firms in the lower turnover bracket (CHF<10m p.a.)

Neutral changes

- Issues of consolidation (amongst or within assortments), decreasing reimbursement, and suppression by one-stop-providers affect manufacturers the least
- For 45% of suppliers infringement of own patents by third parties represent no challenge
- More than 20% traders & distributors are not concerned by increasing hurdles for product approval, packaging tender and increasing competition through direct sales of manufacturers
- Deteriorating payment moral and shortage of employees are not threatening to service providers

1) Core SMTI challenges relate to a subset of questions answerable by all participants irrespectively their industry category/value chain position

Taking the pulse of the industry – Top buzzwords in the international media

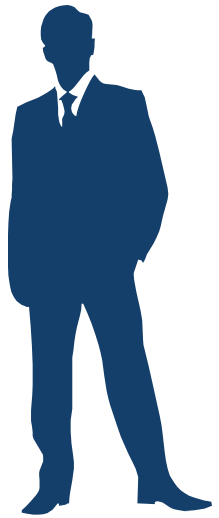
Source: Desk research of international media using Factiva and Wordle.net

On the mind of the SMTI executive community

"This industry will have to overcome true challenges across all corporate dimensions – innovation, service and solutions are a key to survive in today's world."

"Cost pressure and regulation are threatening the innovation process in the medtech industry."

"Our medtech eco-system is a paradise which is falling under enormous pressure"



"The medtech industry is navigating in new regulatory environments with emerging challenges in respect to thorough health economic data and clinical outcome measurements."

"The industry is facing increasing consolidation among manufacturers (mergers and acquisitions of companies and business units)."

"Since 1999, global medtech has massively outperformed pharma on the financial markets".

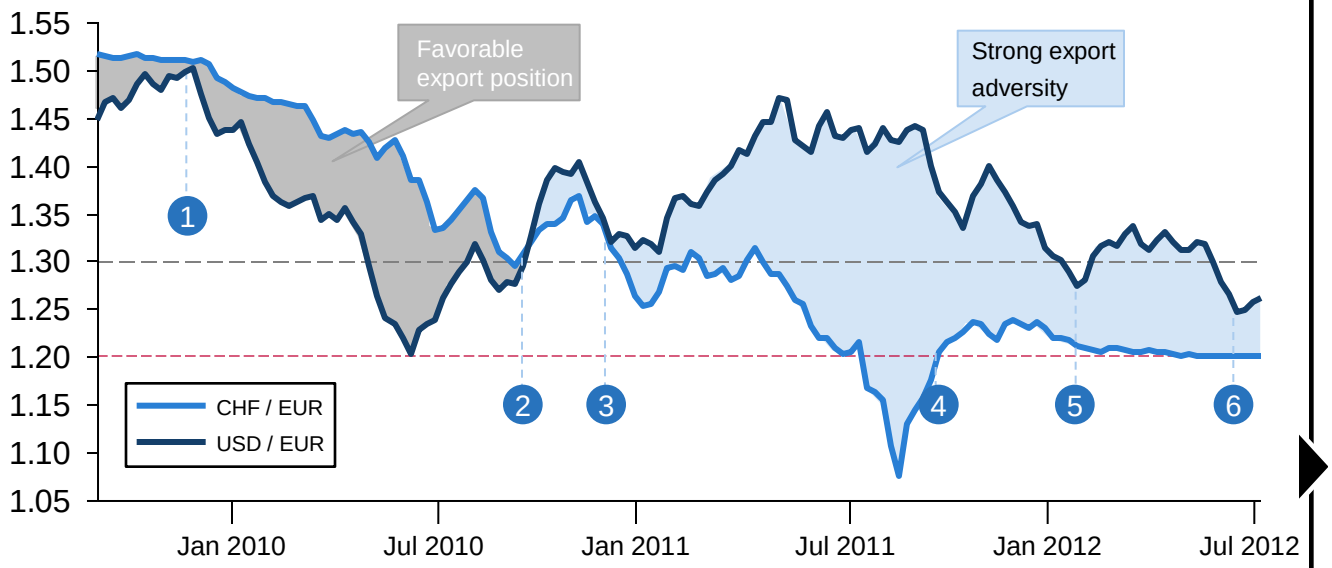
"Structural and economic headwinds require transformational strategies"

"The erosion of price and margins caused through competition, DRG and politics are devastating and are coupled with the additional demand of higher quality products from patients."

"Manufacturers are increasingly focusing on other units to report profits: consulting, lean management, programs to increase patient's satisfaction and to reduce the time spent in hospitals."

The competitiveness of the SMTI is weakened by current exchange rates

COMPARISON EUR vs. CHF AND USD (08/2009 – 07/2012)



Source: www.oanda.com; June 29th, 2012; rates are shown as weekly average rate; based on SMTI 2011

Historical development:

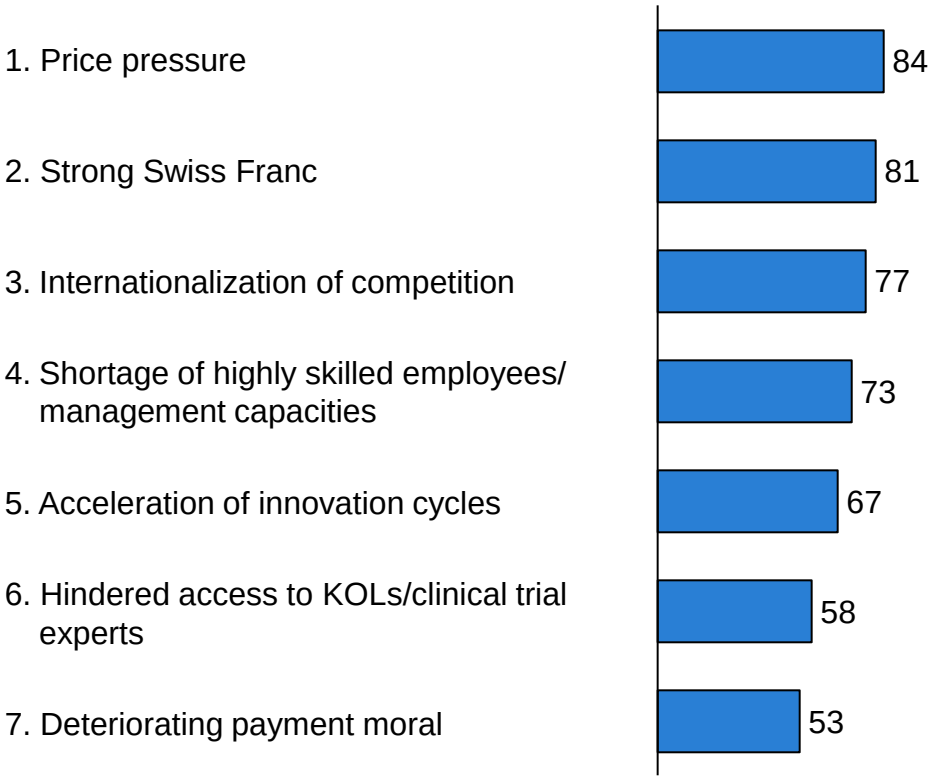
1. Q4/2009: Beginning of Euro crisis due to the debt crisis of Greece; Euro is weakening
2. 09/2010: Dollar is weakening because of slow economical recovery
3. Q4/2010: Euro is further weakened due to fears that Ireland & Portugal need financial support
4. 06.9.2011: SNB intervention, fixing at minimum rate of CHF/EUR 1.20
5. 09.1.2012: Euro weakens due to fears that Spain needs financial support from EU
6. 28.5.2012: French presidential election

COMMENTS

- The average rate of CHF/EUR has been CHF 1.31 since 09/2009
- The competitive position of SMTI firms vs. US and EU companies remains weak due to the stable FOREX trading of the USD and EUR
- If the SNB would increase the fixed rate vs. the EUR to approximately CHF1.30, FOREX disadvantage could vanish, and therefore reduced the current bottom line effect
- Budgeting is a highly inaccurate exercise for exporters due to uncertainties. However, SMTI firms have adjusted their budgets to the current CHF/EUR pegging; if this is revoked or stopped, many exporters face severe difficulties

All SMTI's firms suffer from a tougher market environment

RANKING OF CHALLENGES [in %][1)]



COMMENTS

- The SMTI has experienced more frequent and severe challenges since 2010
- The SMTI 2010 triple challenges[2)] rose to between +2% to +5%
- More than 80% of SMTIs firms are affected by the strong Swiss Franc
  - Large firms are 1.3 times more often affected than small firms
  - 98% of suppliers are exposed to this issue

FURTHER OBSERVATIONS

- Managing price and quality pressure are top priorities in determining long-term success
- Pressure from customers and regulatory bodies has risen in importance and is faced by more than 80% of firms
- The lack of experienced and skilled employees has not improved

n range = 202 - 309; multiple answers possible

1) Challenge is of "high relevance" or "average relevance" to SMTI companies
2) Price pressure, intensified competition, and lack of resources/management capacities

Firms in the lower turnover bracket lack the right capabilities

Global turnover [CHF m]	Challenge # 1	Challenge #2	Challenge #3	Challenge #4	Challenge #5
>25	Strong Swiss Franc	Acceleration of innovation cycles	International-ization of competition	Deteriorating payment moral	Price pressure
10-25	Strong Swiss Franc	Deteriorating payment moral	Acceleration of innovation cycles	International-ization of competition	Price pressure
<10	Hindered access to KOLs/clinical trial experts	Price pressure	Shortage of highly skilled employees/ management capacities	Internationa-lization of competition	Deteriorating payment moral

Range of n = 17 - 175

Different priority game of core SMTI challenges

COMMENTS

Firms with an annual turnover > CHF 10m face the same top five challenges[1)], but in a different order

- A strong Swiss Franc is the biggest challenge while price pressure plays a minor role
- Larger firms are more exposed to fiercer competition in innovation

Firms in the lower turnover bracket have different priorities, competing mainly for:

- External knowledge networks
- Internal knowledge networks
- Pricing
- Market access

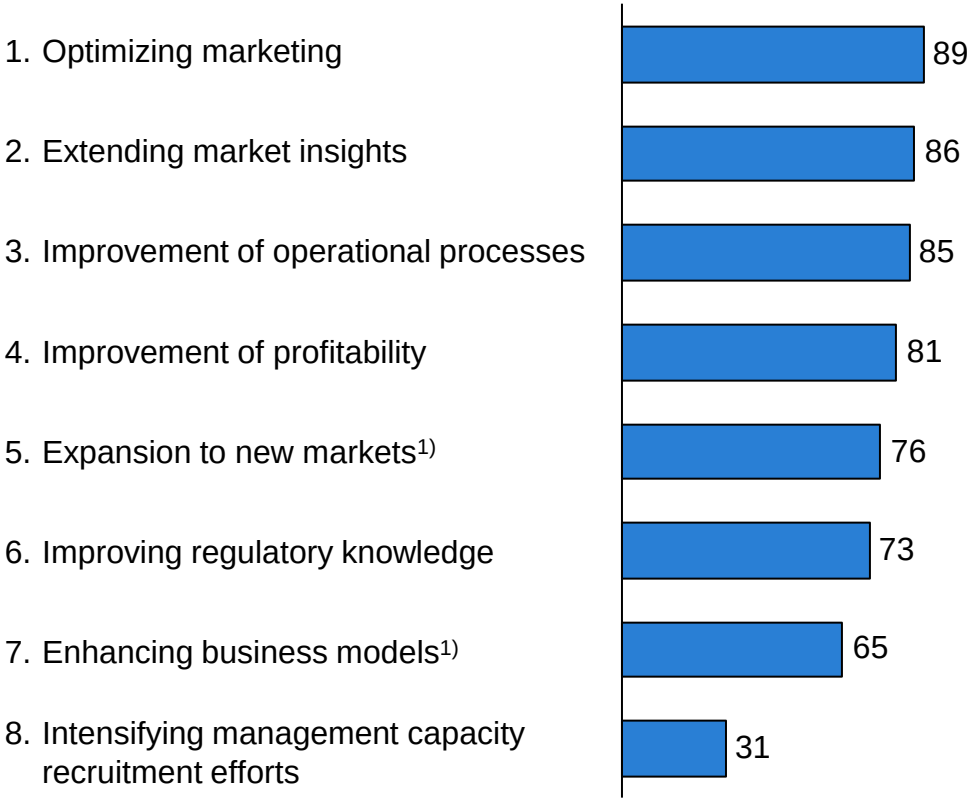
1) Subset of core SMTI challenge

Key points

Top Priorities	▪ More than 80% of SMTI firms focus on commercial and operational excellence ▪ Market insight is becoming an important discipline to enhance competitiveness of firms ▪ The SMTI has a high operational focus in order to support their competitive edge
Growth	▪ The top 10% of SMTI firms in terms of expected growth outperforming the market by up to 5.0% in 2012 and 3.4% in 2013 ▪ Mature SMTI firms maintain a strong focus on commercial and operational excellence ▪ Firms with a neutral or negative growth expectation strongly lack strategic edge for 2013 ▪ SMTI firms with a broadly diversified product portfolio face a different set of strategic activities in order to assure growth
Obser-vations	▪ Only 31% of SMTI firms focus on strengthening their management capacities despite the importance of this challenge. Suppliers give it less priority (24% or ranked 25th) and risk losing their competitive edge in the long run ▪ More than 90% of manufacturers focus on profitability, market access topics and innovation ▪ While more than 91% of SMTI firms face challenges in regulatory issues only 80% of them work towards improvements in this area ▪ Suppliers tend to first enhance their profitability and customer portfolio before engineering competencies and extended offerings ▪ Cost pressure burden is passed through to the suppliers – improving operational excellence has a 12% higher priority for suppliers than for manufacturers ▪ 80% of traders & distributors focus on overhauling their business models (regarding market access) while only 71% of manufacturers and 62% of suppliers do so

SMTI companies focus on commercial and profitability improvements

RANKING OF STRATEGIC ACTIONS [in %]



COMMENTS

- SMTI companies strongly focus on commercial and operational excellence
- Expansion into new markets and improving regulatory knowledge is of secondary priority
- Strengthening the management capacities is of lower strategic priority, despite 73% of SMTI firms seeing this as major challenge
- Priorities may lack appropriate attention from management and lead to insufficient strategic capabilities

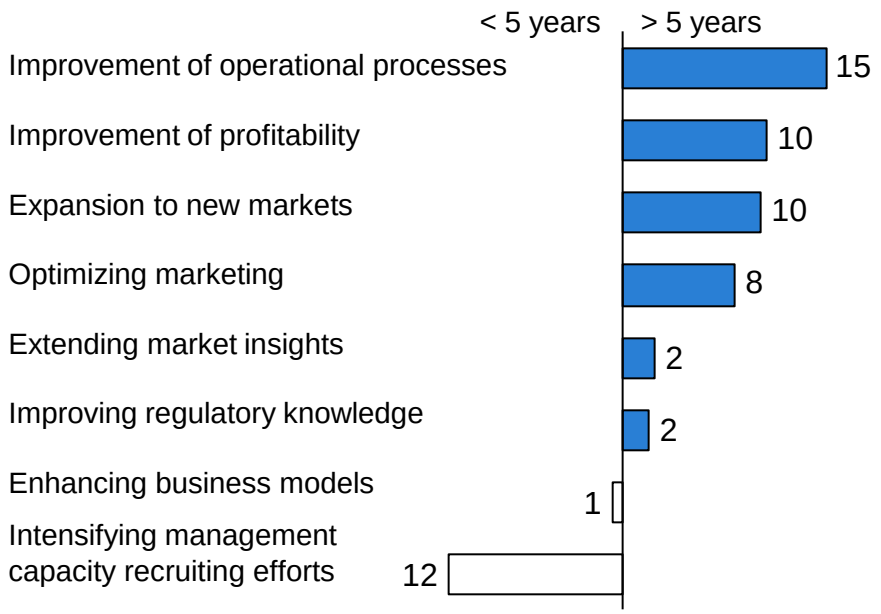
FURTHER OBSERVATIONS

- SMTI firms tend to prioritize operational issues by tackling intensified internationalized competition and price pressure
- Despite of high competition, companies do not focus on enhancing their business models with e.g. novel technologies and superior offerings
- Overcoming shortages in management and engineering talent requires SMTI firms to internationalize recruitment efforts

n range = 215 - 309; multiple answers possible
1) Considered to be a strategic impact action; others have a stronger operational focus

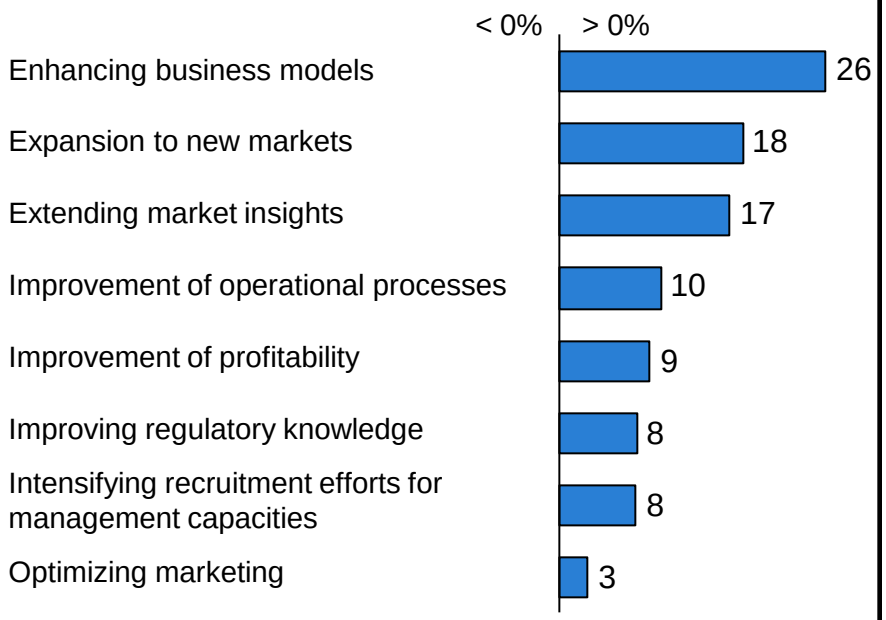
Focusing on new business models and markets provide the brightest outlook

DIFFERENCES IN PRIORITIZATION, IN RELATION TO AGE,



- Mature SMTI firms focus more on commercial and operational excellence
- SMTI start-up/young firms engage in business modeling and the building up of management capacities

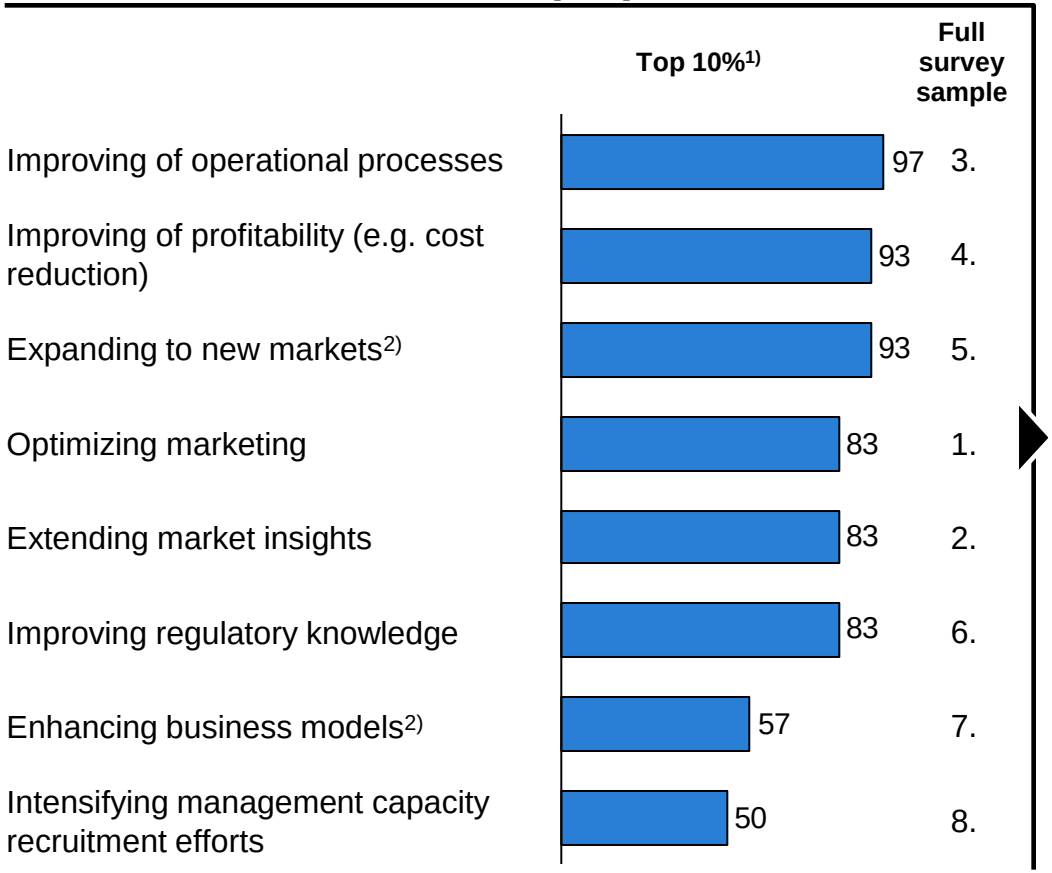
…TO GROWTH EXPECTATIONS IN 2013 [% of answers]



- Stronger strategic focus from firms with a positive outlook
- Enhancing business models, extending market insights, and expansion to new markets are drivers of top growth expectation
- A lack of strategic edge is apparent in companies with neutral or negative growth expectations for 2013

Aspiring firms boost their growth through bottom-line improvements

RANKING OF STRATEGIC ACTIONS [in %]



COMMENTS

- Improving operational excellence is a focus of all the firms with outstanding growing potential
- Improving profitability and expansion into new markets fosters opportunities for rapid growth
- Optimizing marketing shows the biggest step-down
- The top six priorities are a stronger focus than seen in the industry as a whole

FURTHER OBSERVATIONS

- The strong bottom-line focus can be observed in large companies due to implementation of shared service activities and consolidation of back office functions
- Due to their size and market dominance, SMTI leaders foresee less priority in marketing activities

n = 30; multiple answers possible

1) 10% firms expecting highest turnover growth rates for 2012, adjusted for number of FTEs
2) Considered to be a strategic impact action; others have a stronger operational focus

Key points

International investments

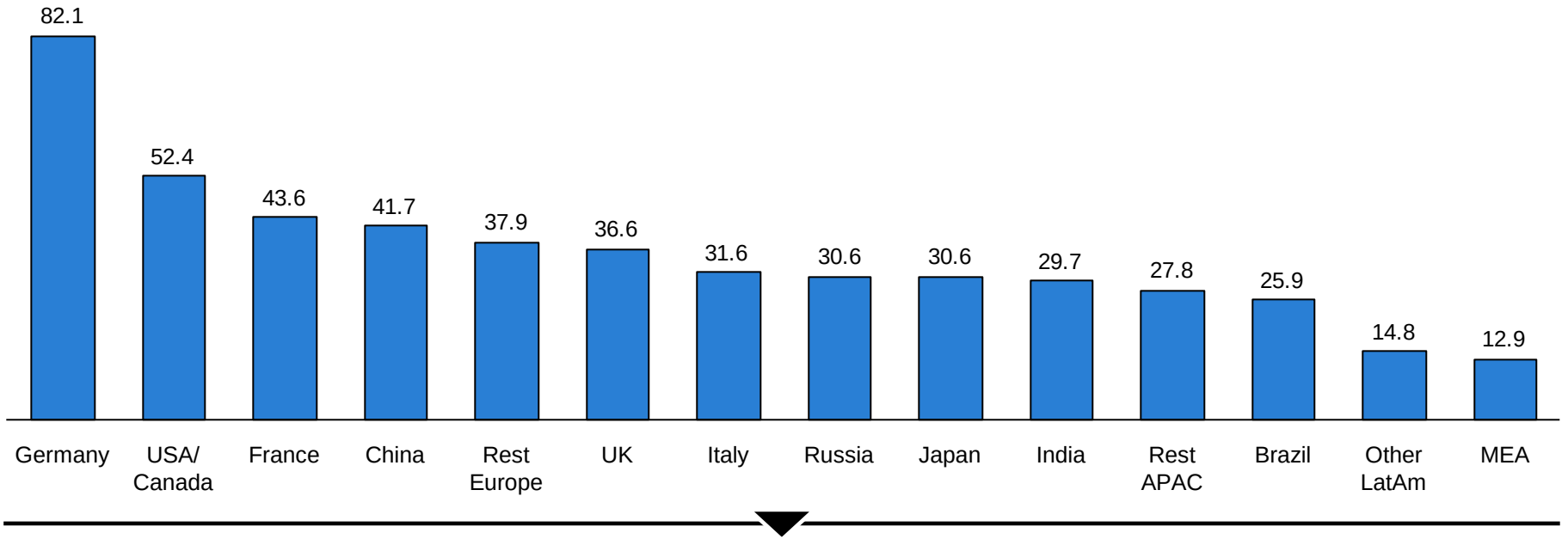
- More than 82% of companies plan to invest in Germany. Germany has the biggest European healthcare market and if also manufacturing there companies benefit from the Euro
- The U.S. remains an attractive investment market, with more than half of investing medtech companies planning investments in either R&D, production or marketing & sales there
- More than half of the SMTI companies plan to invest abroad to ensure proximity to markets and clients. This is reflected by the type of investment which is largely focused on bolstering marketing & sales capacities
- Main investments in production are still made in Switzerland, however Germany, the U.S. and China are increasingly on the production map of SMTI companies
- Major R&D investments abroad are planned in Germany and the U.S.
- Typically a company first enters a foreign market with a distributor agreement then establishes its own local marketing & sales office followed by production facilities. Building up R&D capacities abroad is usually last

Opportunities and challenges

- A majority of SMTI companies estimate a positive growth potential in Germany and Switzerland. Second are other European countries and North America
- Among emerging markets the biggest business opportunities are seen in China and Brazil. Only half of all companies expect a positive growth contribution from India and Russia
- This estimation is mirrored by perceived entry barriers. Almost 75% of all companies see the highest entry barriers in Russia, followed by China, Brazil, India and Japan. Lowest perceived entry barriers are in Europe

Germany is the main focus of SMTI companies investments

PLANNED INVESTMENTS ABROAD [% of answers]

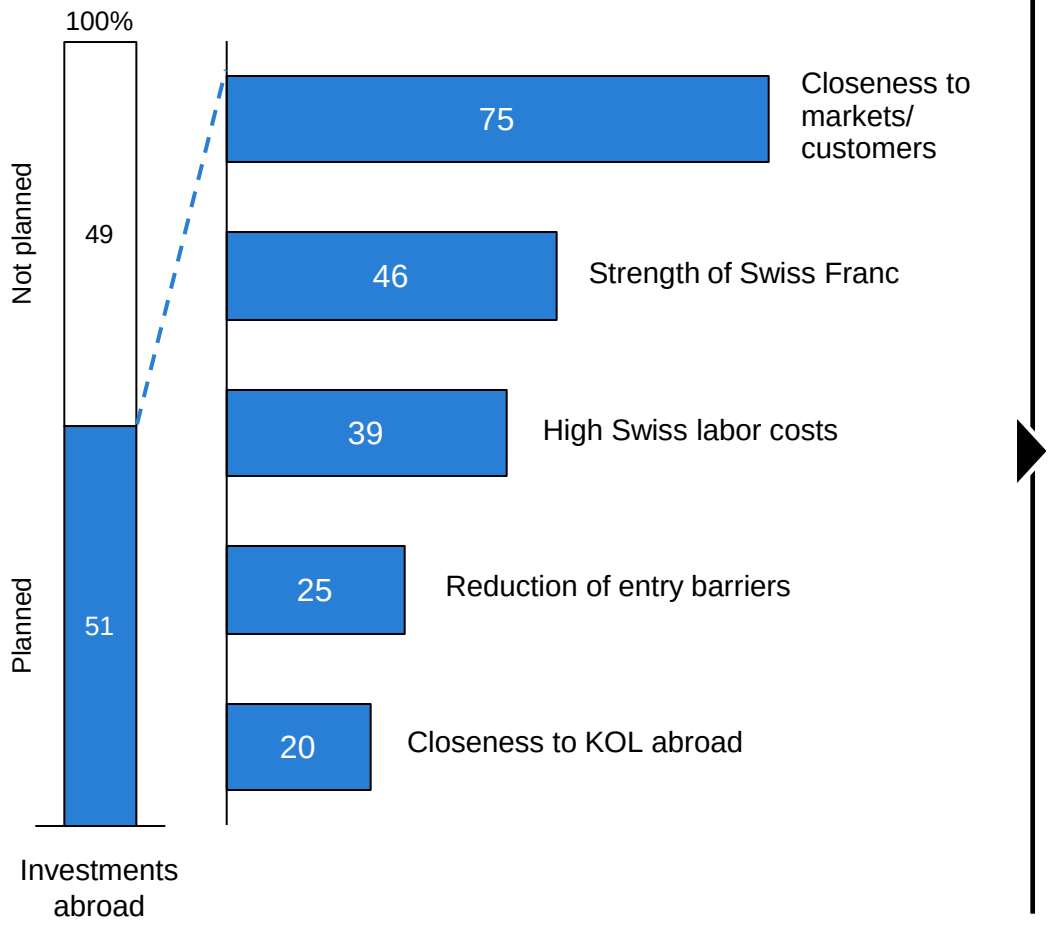


- Swiss medtech companies often plan their first investments abroad in neighboring countries Germany and France. To further expand activities abroad investments in the U.S. are usually the second step.
- The results of the current survey suggest that SMTI companies not already engaged in Germany, France, or the U.S. and Canada either plan to make their first or second step abroad or plan to strengthen their presence in these countries
- Among emerging markets China ranks first. China not only has a growing home market, but is also increasingly as used as a manufacturing base to serve Asian markets

n = 101, i.e. only manufacturers and suppliers that invest abroad; multiple answers possible

The closeness to customers drives investments abroad

TOP 5 REASONS FOR INVESTMENTS ABROAD [% of answers[1)]]



COMMENTS

- From now until 2015 roughly 51% of all SMTI companies plan to invest abroad
- The major driver is to be close to the customers. Of less relevance is the lack of a skilled labor force (7%), buying/access to new technologies (6%) and closeness to other medtech clusters (6%)

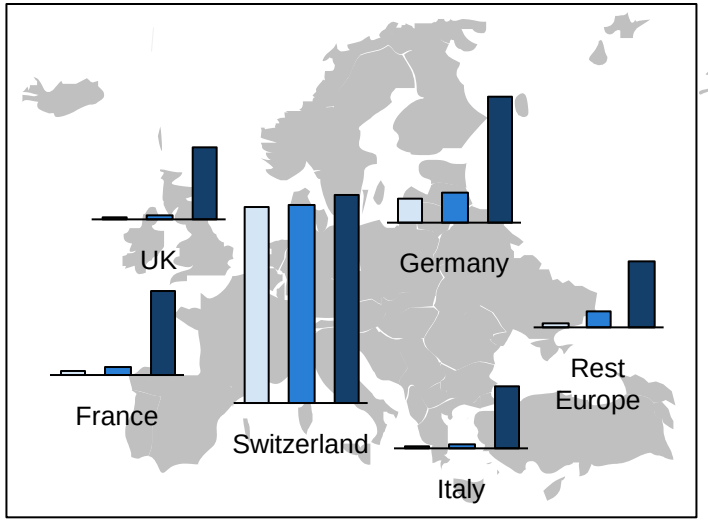
FURTHER OBSERVATIONS

- 51% of companies planning to invest abroad is a high number given the structure of the SMTI
- Dominating are micro and small companies – 82% of all SMTI companies have less than 50 employees
- For smaller companies investments abroad need to be critically evaluated as resources are scarce

1) Multiple answers possible
n = 168

Switzerland, Germany and the US are still the dominant markets for Swiss investments

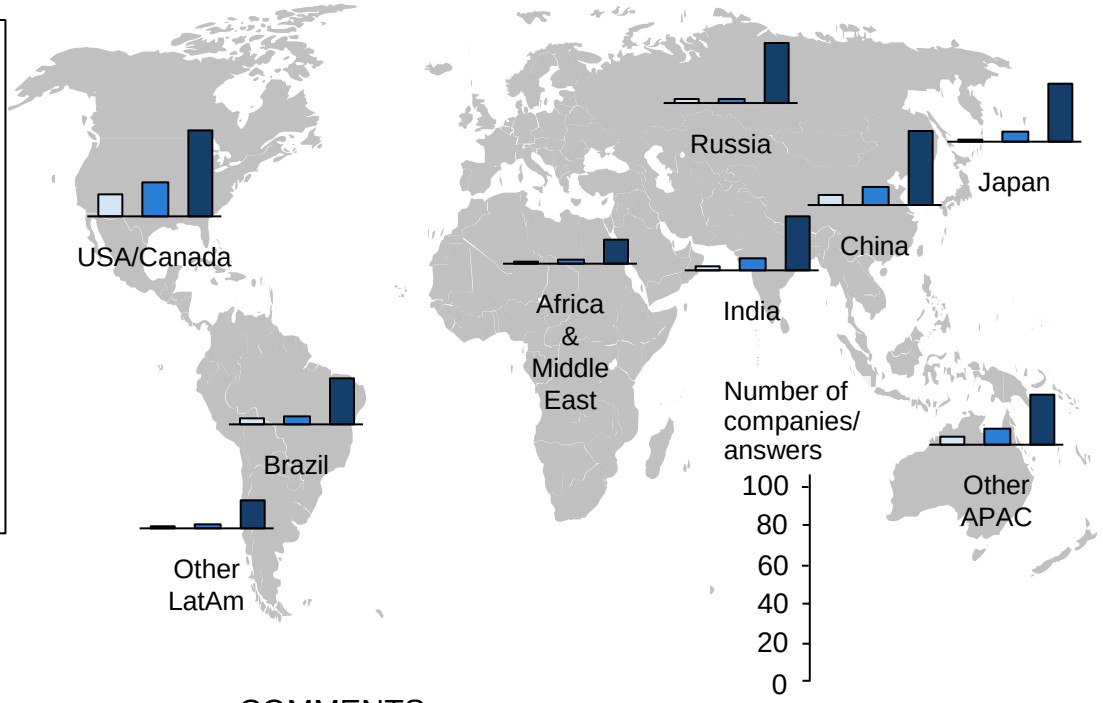
PLANNED INVESTMENTS IN EUROPE 2013 - 2015



Companies planning to invest in…

R&D Production Marketing & sales

PLANNED INVESTMENTS WORLDWIDE 2013 - 2015



COMMENTS

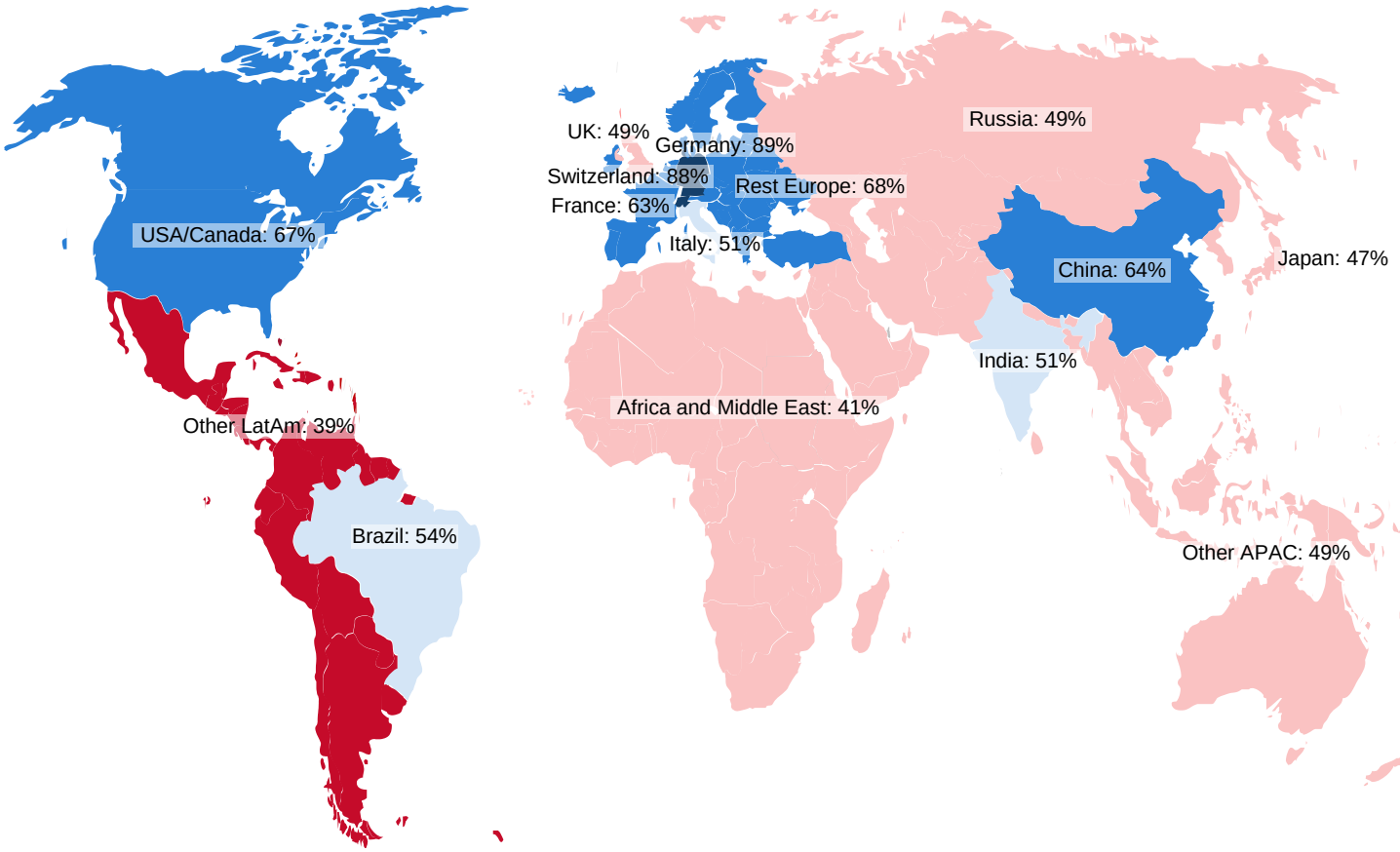
- 75% of companies invest abroad because of proximity to markets and clients
- Other reasons for investments abroad are: high labour costs, reduction of entry barriers and closeness to experts

COMMENTS

- 46% of companies implied that the FOREX issue is a primary reason for invest abroad
- Only 6% of MT firms invest abroad because of proximity to other clusters

Range of n = 13-145, only manufacturers and suppliers
Source: SMTI 2012

SMTI companies expect biggest growth in Germany, Switzerland, the U.S., China and France



COMMENTS

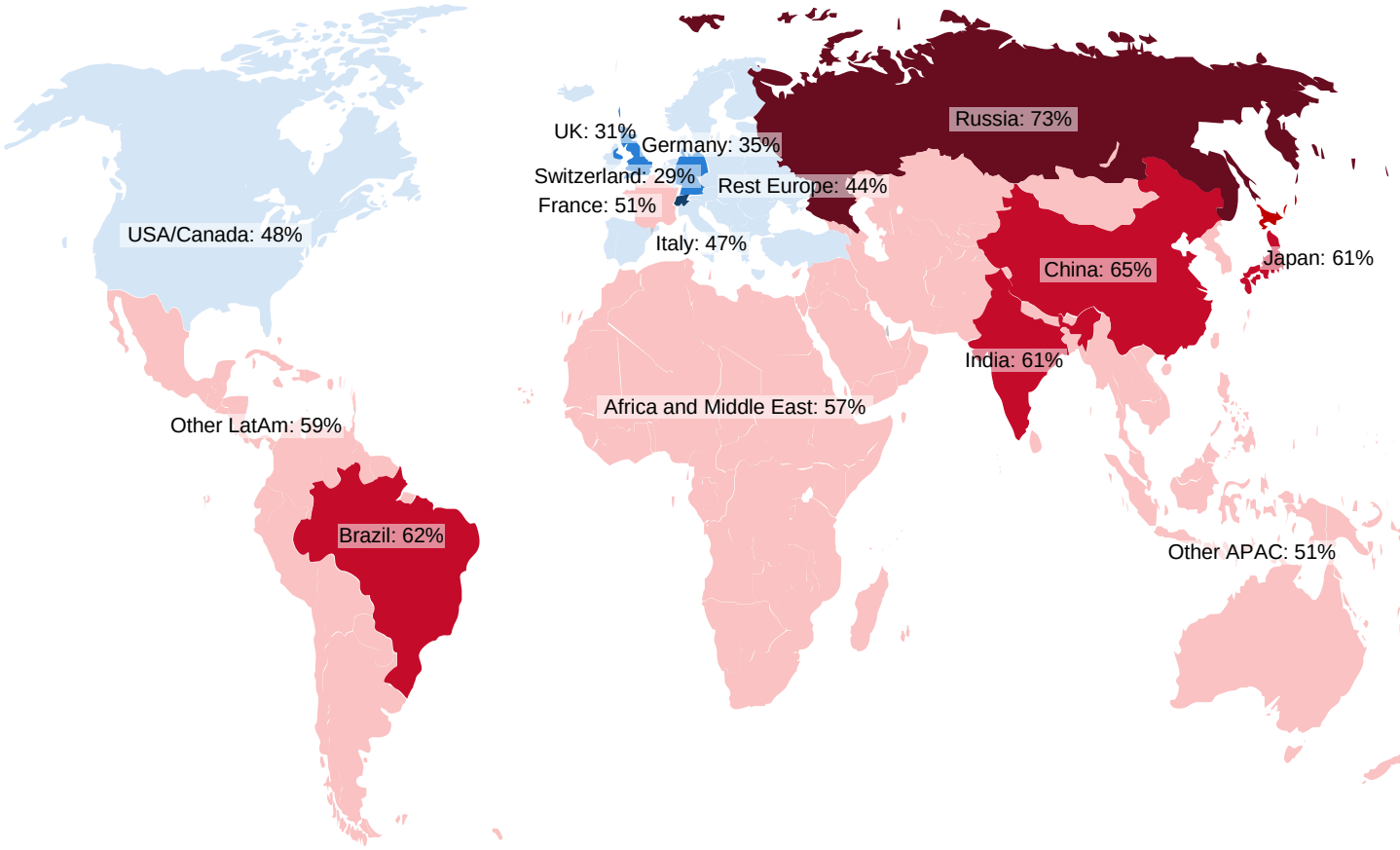
- Highest growth potential is expected in Germany, China and the U.S.
- A majority of companies expect positive growth rates in Brazil and Europe during the next three years
- Only a minority of companies see a growth potential in the Latin America, Africa and the rest of Asia/Pacific
- Hindered market access due to stringent compliance barriers in i.e. UK, Italy, France

Companies that expect a positive growth in the respective markets/regions [% of answers]:

>70% 60-70% 50-60% 40-50% 30-40% <30%

Range of n = 128 - 288

SMTI companies experience high entry barriers in BRIC countries



COMMENTS

- Despite high entry barriers, medtech companies from Switzerland are embracing new markets actively
- Among the countries investing abroad, a quarter indicated decreasing entry barriers as a main reason
- Of all investments abroad, 15% are planned in production, 77% in marketing & sales and 8% in R&D

Companies that experience high entry barriers or difficulties in attracting customers from these markets/regions [% of answers]:

>70% 60-70% 50-60% 40-50% 30-40% <30%

Entry barriers: range of n = 91 – 259. Top 5 reasons for investments abroad: n = 85, only suppliers and manufacturers

C. Expert opinions on selected topics

Contents

Page

Hospitals – our business is your business (1/2)

René K. Willhalm, University Hospital of Basel

Several years have passed since the global economic crisis began. Now not only the banks experience challenging times but numerous EU countries are now struggling with bankruptcy. In order to remain competitive in such financially tattered environments, both private and public sector hospitals need to manage their daily operations more cost-effectively than ever before. This results in novel challenges and trends affecting the health care industry that must be considered by life science executives in their decision making in order not to jeopardize their future competitiveness.

Are the hospital clients of tomorrow the same as those of today?

Certainly not, since we already know that today's patients are remarkably different from what they were in the past. The steady increase in the number of older patients reflects a demographic shift towards an aging population that is common to the majority of modern societies. Even though improved healthcare treatments, health awareness, and better overall living conditions are major contributors to extended life expectancy, age is still the single most important risk factor for disease. Thus, in Western healthcare systems, the average spending on healthcare per capita has increased significantly, covering both increasing demands for top-notch therapies and broader access to standard treatments. Clearly rising costs for the healthcare system are no longer sustainable and become a rising financial threat to healthcare stakeholders. The question of who will pay for the escalating costs remains under constant debate among government, payers, providers and society.

Where to find rivalry in the hospital business?

Competition is becoming harsh in the healthcare industry. In Germany, over 40% hospitals do not expect to make a profit. A decade after the introduction of DRG (diagnosis related groups) legislations, up to 10% of hospitals are expected to close. This trend is accelerated by the lack of financial support from the municipalities. The tight cost controlling required by the DRG system has led to specialization. In addition, significant consolidation in procurement has been put in place, striving for lower costs through economies of scale. Large hospitals seek acquisition of competitors to gain access to new target markets or medical resources, as recently observed in Fresenius' Helios takeover bid for one of Germany's leading hospital chains. Interestingly, insurance companies fear such acquisition-driven increase in purchasing power, since they are afraid of a monopoly positioning and a competitor lock-out for their patients. Smaller institutions such as rehabilitation centers and elderly homes do not have the financial strength to pursue such acquisitions. In the industrial sector, medtech companies that operate in radiology or

Hospitals – our business is your business (2/2)

René K. Willhalm, University Hospital of Basel

micro-invasive technologies such as GE and Medtronic attempt forward integration strategies with “own the disease”, or “build, operate or transfer” business models in case of Fresenius, which are based on the idea of value chain optimization.

What technologies will drive the hospital business?

New technologies will replace existing technologies given at least one of the following two conditions is satisfied: either they perform better (e.g. by shortening the healing process), or they perform as well as existing technologies but at lower overall treatment cost. An example of state-of-the-art technology that satisfies the first condition is navigation-based surgery permitting minimally, high precision interventions, and thus resulting in shorter rehabilitation processes. Lowering overall treatment costs is achieved when introduction of intuitive command systems radically simplify surgery procedures, or in case of improved monitor systems that allow more accurate treatment regimens. Portability is a huge aspect of today’s healthcare settings, and therefore new products will be developed that integrate technology used in mobile phones and tablet computers. Miniaturization and artificial intelligence will further support surgery and rehabilitation therapies, reducing costs in labor intensive therapy processes. Given that medical data and knowledge will double every five years, hospital management expects medical devices to provide sustainable and robust solutions, while specific components must become highly flexible for maintenance, replacement and upgrade, which is true (e.g. for implantable devices such as Cochlears’ hearing systems and in cases where initial hardware cost require high investments, such as Siemens’ angiography devices).

What does our business mean for your business?

The hospital as the fundamental healthcare institution has since long been the main source of innovation to the medtech industry. Due to close access to patients and profound understanding of treatment needs, key opinion leaders and general practitioners deliver essential insights to every manufacturer’s R&D pipeline. In the future, idea exchange networks to foster pragmatic, open and more intuitive solutions can lead to leaner and a more cost-efficient innovation model in the medtech space; increasing product usability as an outcome. Winning in the long run means ascending from collaborative efforts in device development towards integrated solution providers as jointed healthcare partners. In that respect, leading medtech firms are well positioned for a successful strategic partnership.

René K. Willhalm, BSc Chem-Eng., MBA

R. Willhalm is Head of Medical Processes Dept. at the University Hospital of Basel (UHBS), Switzerland.
Prior to joining UHBS, he worked in consulting and line functions in the medtech, Pharma and automation industry. He studied Chem. Engineering and holds a MBA in General Management.

Playing the markets (1/2)

Melchior Buchs, Managing Director, FASMED

Swiss Swiss medical technology companies generate more than half their revenues with products that are less than three years old. In order that a new medical device can be sold quickly on the Swiss market, it has not needed to go through a time-consuming regulatory approval procedure like that for medicinal products up to now. Instead, the procedure regarding the conformity of the medical device with the applicable standards must be successfully completed and the medical device correspondingly CE-marked. With a short approval time of several months – in comparison to Japan with up to two years – Switzerland provides an environment that boosts innovation. Furthermore, the medtech location provides the obligatory basic insurance (OKP) through a market friendly reimbursement practice; in comparison to medicinal products or medications, there is essentially no positive list. The prices are also not determined by the government, but are instead freely traded in an upstream healthcare market.

In an international comparison, the above average importance of the Swiss medtech sector is thus a result of the liberal regulation of the access to the market and to the national insurance system. Patients also profit from this. Newer and better diagnosis and therapy methods are more quickly available to them. The country should not turn away from this system unnecessarily. Nevertheless, strong tendencies to forfeit these advantages are being observed; whether it is through tightening of the marketing authorization at the European level or through more stringent requirements for the evidence of effectiveness, appropriateness and cost-effectiveness (WZW).

More stringent monitoring of CE testing facilities

With current legislation, Switzerland has harmonized the marketing authorization of medical devices with the European System pursuant to the "New and Global Approach". The government supervision occurs on the one hand through market surveillance and on the other hand through the determination of the testing requirements for the individual product classes and also through the accreditation and monitoring of the nominated testing facilities involved with CE marking. This system is consistent throughout Europe, is being continuously developed and has basically proven itself. In agreement with the European industry association Eucomed, FASMED welcomes the planned modernization of the European legislation. It should serve patient safety, high product quality, rapid access to the newest medical technologies, and also be developed efficiently and without bureaucratic stalls. It is to ensure, among other things, that only the best qualified conformity assessment bodies are recognized and more stringently monitored. Furthermore, the cooperation with governmental surveillance authorities must be promoted or better coordinated, particularly through European standardization of market surveillance and the handling of safety-relevant events.

Playing the markets (2/2)

Melchior Buchs, Managing Director, FASMED

HTA: Taking medical technology characteristics into account

Ever since the introduction of the new hospital financing in early 2012 , flat rates per case (SwissDRG) and cost-benefit analyses in addition to quality and safety, are increasingly coming to the foreground. Hospitals are examining each technical innovation for cost-effectiveness. In particular, solutions increasing quality and efficiency are in demand. To be reimbursed, medtech services must fulfill indicated WZW criteria pursuant to the Swiss healthcare insurance law. In this context, the Swiss Federal Council was tasked last year with creating the framework conditions for a Health Technology Assessment Agency, HTA. This independent institution shall systematically evaluate and disclose the appropriateness and the cost-benefit relationship of new medical treatment. For this, an HTA will compile and analyze information about the economic, social and ethical aspects of a treatment. FASMED acknowledges the political task. For medical technology, however, other criteria apply for the HTA than for the pharmaceutical industry. The organization wants to actively contribute to the discussions about the creation of the HTA agency so that these characteristics and also specific authorization and reimbursement processes on market entry of medtech products can be taken into account.

SwissDRG: Ensuring innovation and financial investment

For the preservation of the innovation and competitiveness of the industry, the new hospital financing provides incentives in the right direction. With SwissDRG, costs will no longer be reimbursed as before but instead clearly defined medical treatments. Therefore increasing transparency in terms of the varying cost-effectiveness of the service provision between the different hospitals will become more important. This development is welcomed but must not lead to hospitals increasing their profitability primarily by pushing prices down when purchasing, but instead by optimizing their processes and structures. FASMED is becoming involved with this so that patients may also have rapid access to new therapy and diagnosis methods in future. This includes ensuring further timely financing of innovation and investment with the flat rate per case system.

Melchior Buchs, *who holds a doctorate in economics, has been General Secretary of the umbrella organisation for Swiss medical technology, FASMED, since 2007. He has experience as a politician, businessman and consultant. Politically, he was employed full-time at the City Executive Council of Thun and at the Council of the Canton of Bern. Currently, he is a partner at Markwalder & Partner, legal and management consultancy, Muri/Bern, co-owner of ALPGIS AG, spatial development and geo-information, Thun and also at Buchs & Sachsse GmbH, innovation communication, Reinach BL.*

Low cost/high value solutions in emerging markets (1/2)

IMS Consulting Group

Emerging markets (EM) have grown to enormous economic importance just during the last decade. Also in the healthcare sector, the growing demand for products and services has resulted in significant growth, predicted to continue further. Up to 2020, more than 40% of global healthcare sector's absolute growth will come from emerging markets. As more emerging markets are affected by demographic shifts due to an ageing population and also change in consumption behavior, the prevalence of chronic diseases that is typically attributed to developed Western countries will rise significantly. The WHO predicts that India which possessing roughly 50 million people suffering from diabetes in 2010, will be the largest absolute increase in the number of diabetes patients, which will reach 80 million by 2030.

Given the huge opportunity of yet unmet medical needs, leading healthcare product companies have realized that expanding to emerging markets will provide significant short- and mid-term growth perspectives. Medtech and other life sciences companies must penetrate China, India and Brazil rapidly to remain internationally competitive. However, these countries represent more than just a potential sales market. Latest discussions at the INSEAD Healthcare Alumni Summit 2010 reflected the trend that several multinational healthcare players such as GE Healthcare, Medtronic, Novartis, Fresenius and many others use emerging markets strategically as off-shoring platforms for parts of their value chain. Most commonly manufacturing, dominated today by China, but also human clinical trials, development, administrative activities and even basic research and discovery are considered for outsourcing. Interestingly, when asked about future rivalry stemming from uprising competitors in emerging markets, India is thought to have a major position in healthcare R&D by 2020, driven by its strong pharmaceutical R&D base. Consequently, some Indian companies are expected to become globally leading players (with regards to revenue and profitability) in pharmaceutical products and healthcare services, whereas China is predicted to produce future global competitors in the medical technology and diagnostics sectors.

Major medtech players such as GE Healthcare and Medtronic have already seized opportunities in emerging markets. They are adjusting their products and services to the purchasing power of their customer basis, creating different value segments for each tier (Figure 1).

Low cost/high value solutions in emerging markets (2/2)

IMS Consulting Group

GE Healthcare's success story with their portable electrocardiogram (ECG) GE MAC 400 proves that innovation is key: By redefining factors of customer value in the mid- to low-level tier, they have realized their vision of "making ECG available to every physician, every patient, everywhere" and are now able to address the needs of more than 70% of the population in rural India. Emerging markets have to cut healthcare costs at least up to 10-fold when trying to make healthcare affordable to the masses. Successful medtech players are expanding these latent market opportunities by genuinely innovating new customer value solutions aligned with the need for low-cost/high value solutions. Since they are not just building a cheaper, poorer version of conventional products (which generally cost 10 times as much), they are escaping the ubiquitous cost/value trade-off observed in Western markets.

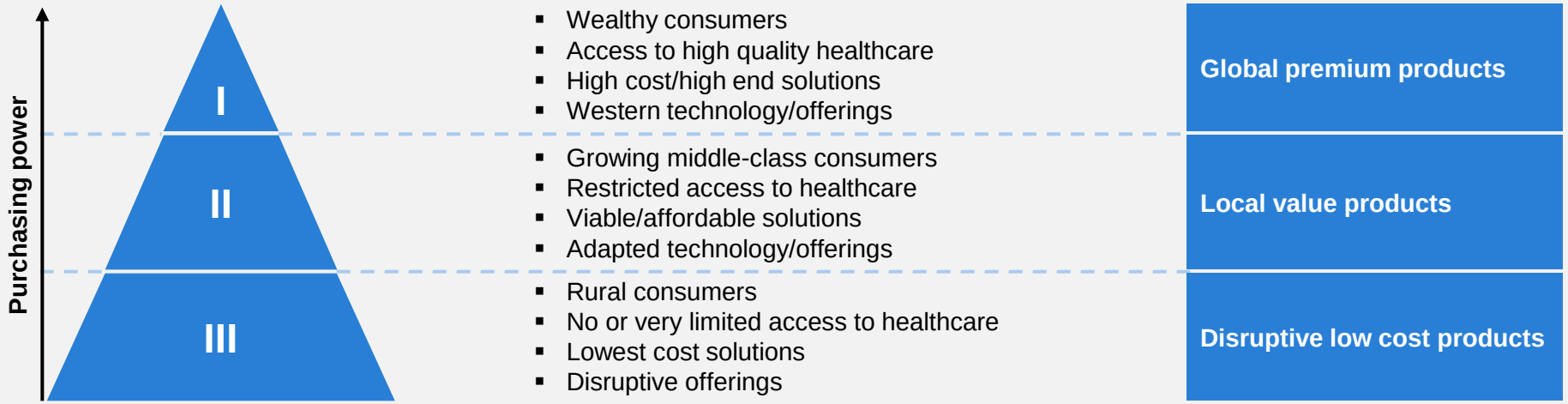


Figure 1. Customer value segmentation pyramid

Healthcare convergence as a win-win growth opportunity (1/2)

IMS Consulting Group

Medtech and pharma are both innovation driven industries with pioneering technical expertise, and by definition share a common goal: serving the healthcare sector. As a consequence, they often face similar challenges and likewise jointly suffer from increasing price pressure in global healthcare markets. In particular, they increasingly have to demonstrate value against existing standard of care to ever strengthening key accounts, such as group purchasing organizations (GPOs). Obvious historic growth opportunities like blockbuster products are shrinking. Convergence of healthcare products across medtech/pharma is still profitable, particularly if demonstrating a benefit to patients and healthcare institutions. The long standing KOL- and physician-based sales approaches are shifting towards highly professionalized healthcare institutions, such as GPOs – this forces today's sales arguments to extend beyond the medical value and also address economic value in the context evermore scrutinized treatment and procedure costs.

How can health care suppliers respond to evolving needs?

A highly effective strategy to address rising treatment efficiency and effectiveness needs lies in bundling individual offerings to a holistic healthcare solution by converging solutions across the borders of medtech and pharma, which will become a prime success factor for healthcare companies in the future (Figure 1). Convergence arises where, adjacent to their core businesses, companies merge technologies/solutions centering on patient/disease pools, superseding individual value propositions towards superior patient outcomes. Such strategies can lead to a competitive advantage, locking-out competitors in both sectors.

The "own the disease" business model starts a new era of go-to-market approaches of leading firms within and even beyond the healthcare industry, jointly elevating the negotiation power of medtech and pharma companies in light of the steadily increasing pressure in healthcare markets.

What can be learned from leading medtech firms?

Fresenius Medical Care (FMC), the world's leader in dialysis products and services successfully spearheaded the development of such a convergence strategy. The German-based dialysis equipment manufacturer bought US-based National Medical Care in 1996 to become the largest integrated dialysis solutions provider globally. More recently, FMC also started to focus on pharmaceutical products for end-stage renal disease patients, through both acquisitions, (e.g. worldwide phosphate binder business from Nabi Pharmaceuticals in 2006), and partnerships, (e.g. joint-venture with Vifor Pharma, owner of the leading IV iron product Venofer) to develop iron deficiency anemia and bone mineral metabolism products.

Who are the first-movers in the pharmaceutical sector?

Sanofi delivers integrated solutions to diabetes patients through a co-development agreement with AgaMatrix for blood glucose monitoring

Healthcare convergence as a win-win growth opportunity (2/2)

IMS Consulting Group

devices. In addition to its insulin drugs Lantus and Apidra, Sanofi launched iBGStar - the first FDA-approved blood glucose monitoring system that connects to Apple's iPhone and allows users to manage their data.

Cendres-Métaux, a traditional supplier to the medtech industry, has developed jointly with the University Hospital of Berne a novel bone anchoring device that significantly facilitates dialysis treatment procedures and brings substantial benefit to all involved stakeholders. It integrates state-of-the-art stent technology with an innovative anchoring system, providing an interface for an uncomplicated, highly flexible and lean dialysis treatment procedure. In this respect, a significant decrease in treatment burden for dialysis patients has been achieved. However, such sophisticated technological advantages could only be made possible having an appropriate immunosuppressive drug treatment in place.

What solution offerings provides convergence in the future?

Rethinking current innovation models is key to these undertakings, particularly with regard to the fact that neither medtech nor pharma can prosper with a growing number of commodity products in their portfolios. Today's suppliers must focus their distribution channels on large life science conglomerates already betting on convergence. Life science conglomerates will be better positioned to manage extended offerings and influence the way leading healthcare institutions purchase healthcare solutions (e.g. tenders organized through GPOs). By moving beyond stand-alone products, healthcare manufacturers can optimize their solutions/offering to achieve at least one of three objectives: improve patient outcomes, increase healthcare efficiency and lower healthcare treatment costs. Some medtech products increasingly facilitate the real time monitoring of patient outcomes for health economics outcome analyses (HEOR), needed to fulfill ever tightening regulatory requirements. Pharma companies are highly likely to seek stronger ties to medtech firms. Given how quickly holistic solutions based on converged products have developed as a significant source of growth and profitability, aspiring life science companies should clearly have a strategy for capitalizing on convergence.

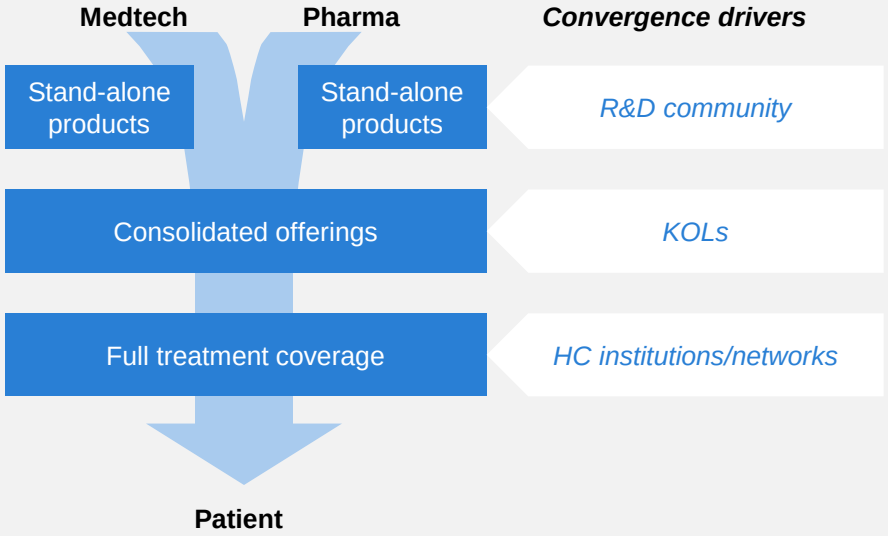


Figure 1. Medtech/Pharma convergence towards the patient

From Personal to PERSONALized Medicine (1/2)

Moshe Rappoport, Executive Technology Briefer, IBM Research Zurich

Personalized medicine is one of the buzzwords that dominate current discussions about the future of the healthcare industry. Indeed, novel diagnostics, IT and new analytical capabilities hold tremendous potential to transform medicine and patient care in the next few years. It is a revolutionary trend. Yet, healthcare is a people-based challenge. It is intuition, experience, human sense and sensitivity that allow doctors and caregivers to excel in their profession. So the question is: What can we do to smoothen the transition to a medical world that is increasingly enhanced by, and dependent on, technology?

Before I give you my impressions on this challenge, let me share with you what is becoming a major tipping point in healthcare informatics. Three key technological components are needed to create game-changing medtech solutions that will support our dream of evidence-based medical diagnostics and outcomes.

They are:

- Affordable and available instrumentation for capturing patient data and novel diagnostics in real time.
- The ability to share health data securely through local and remotely interconnected communications devices (also called the Internet of Things).
- Intelligent systems that combine and compare patient data with large amounts of clinical data and, based on this, suggest optimal treatments.

Conquering data challenges for well informed diagnoses

Today, in 2012, we can claim that we are just now reaching the tipping point on all of these requirements. For example, these new technologies have recently allowed IBM researchers working with hospitals around the world to create a system known as AALIM. This system can capture heart pattern data in real time in an ambulance en route to a hospital, compare the data with stored data from many other patients, and propose to the physicians in the emergency room a first course of action based on the most likely diagnosis.

At the University of Ontario Institute of Technology, neonatal intensive care specialists can now monitor a constant stream of biomedical data, such as heart rate and respiration, enabling physicians to spot potentially fatal infections in premature infants up to 24 hours earlier than before.

New analytical capabilities provided by IBM's Watson supercomputer can assist doctors and improve the accuracy of diagnoses and treatment. Watson has the extraordinary ability to understand human language, analyze the exploding amount of medical knowledge, and work with data from many sources including patient records or medical history to help physicians make better diagnoses.

In personalized medicine, a person's own genes also play a major role. Biomedical researchers are working to match specific changes in our genes with both disease risks and medication response. Doctors can use these connections to prescribe medications and treatments that will be safe, effective, and deliver better outcomes for their patients. What's more, the bioinformatics

From Personal to PERSONALized Medicine (2/2)

Moshe Rappoport, Executive Technology Briefer, IBM Research Zurich

industry is focused on dramatically reducing the cost of DNA analysis. The Swiss pharmaceutical Roche and IBM, for example, are jointly exploring DNA sequencers based on tiny nanopores fabricated in a silicon chip that can read out DNA strands – a technology invented by a biologist and a chip developer at IBM Labs. The technology holds the potential to reduce the cost of genome analysis to under 1000 Dollars.

Focus on human factors

All these examples are first-of-a-kind efforts, and I expect further significant changes in all these capabilities in the next few years which will be a golden era for medical technology. The timing couldn't be better, as we are facing demographic and cost explosions that require radical new approaches to healthcare.

This leads back to my original question, "What can we do to smoothen the transition to a medical world that is increasingly enhanced by and dependent on technology?".

I am convinced that we must plan **from the very beginning –** and not as an afterthought – to deal with a realistic **personal** view of the various people who will be using these systems. And we must continue to do so at every point during this transition phase. Our view must encompass all stakeholders: patients and their families, caregivers at all levels, administrators and government officials etc. In other words, as we become ever more dependent on medical technology, we must not risk losing the human touch that is so important to the healing process. This involves fostering a feeling of **trust** on all sides.

Some of the factors that we will need to consider are:

- Ease of usability of equipment and systems
- Ease of understanding of output results
- Transparency of complex processes
- Sensitivity to the tech-readiness of different age groups
- Rights of patients to be informed about their health in a sensitive way
- Personal counseling of patients and their families
- Rights to choose which data we wish to share and with whom

And there are many more human factors that can help us succeed. Advancing towards PERSONALized medicine is not as much a technological challenge as it is a human one. As we move into an era of medtech supported personalized medicine, we want to ensure our focus on the word **personal** at all stages.

Moshe Rappoport *is Executive Technology Briefer at IBM Research's Industry Solutions Lab in Rüschlikon, Switzerland. This think-tank is an integral part of the IBM Forum Center network in Europe. It provides companies, academia and governments with the opportunity to find out how IBM's R&D assets, trend research, advanced technologies and solutions could enhance their success. In his function, Moshe Rappoport meets with business executives and leading thinkers from around the world. Together, they explore how novel technologies will affect business and society in the years to come, and propose novel approaches for the use of new technologies. He joined IBM Research in 1986.*

Rising venture capital opportunities for medtech startups (1/3)

Nils Herold and Dr. Simon Zaby, Department of Financial Management, University of Basel

Business activity in the medical technology industry is characterized by sustainable financing needs and by a high degree of uncertainty. Therefore, in most cases venture capital (VC) is the only possibility to launch an innovative startup.

The venture capital market develops more dynamically than the economy as a whole. Nevertheless, there is a strong influence of the business cycle on young and innovative companies since they are highly dependent on the overall economic development. Delays are evident in this pattern, which is caused by the structure of venture capital transactions. Since venture capital investors place capital over a period of mostly between two and three years, there is a certain delay between the overall economic development, and the development of the venture capital market. Continued funding for young startups is dependent on the achievement of certain milestones. This context constitutes the financial framework of startup companies.

Figure 1 (below) illustrates the financing transactions of Swiss startups, subdivided into business sectors. It shows that the transactions have a cyclical pattern. From 1999 on (58 transactions with 44 companies), there occurred an increase up to 110 transactions (with 96 companies) in 2001. In the years after 2001, we observe a decrease to 73 transactions (61 companies) in 2006. This jump and the successive decline are primarily related to the “new economy” phenomenon. However, until 2008 (134 transactions with 96 companies) the number of financing transactions increased again.

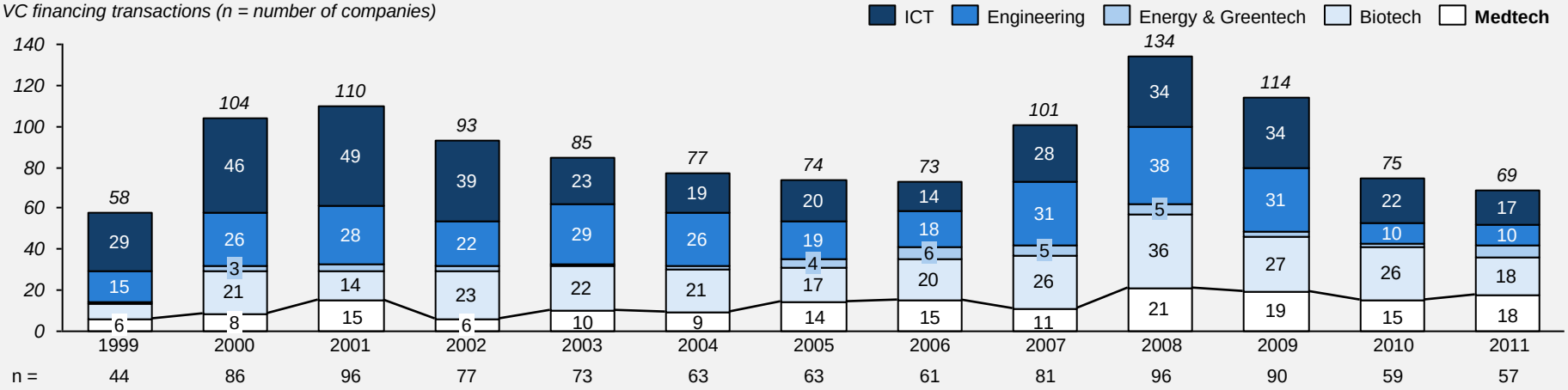


Figure 1. Venture capital financing transactions for Swiss startups

Rising venture capital opportunities for medtech startups (2/3)

Nils Herold and Dr. Simon Zaby, Department of Financial Management, University of Basel

With regard to the different industries, over the years the venture capital funding tableau appears as follows: The largest share of transactions is allocated to the ICT sector (32.0%). The engineering and biotechnology industries show slightly lower average proportions (26% and 23.8%, respectively). The medical technology companies account for 14.3% of all transactions on average, the energy & greentech startups for 3.9%.

Over the time period, however, we find a clear shift from ICT to the life sciences sector. After the dotcom boom years, the ICT industry's share of over 50% has more than halved until today whereas the two life science industries biotechnology and medical technology grew considerably: BIO increased from 12.1% in 1999 to 26.1% in 2011; in the same period the medical technology sector expanded from a 10.3% to 26.1% share likewise. In the engineering sector we observe a decline in the proportion of VC transactions from 25.9% to 14%.

An integrated view of the venture capital market requires an inclusion of the financing volumes – in addition to observing the number of financing transactions.

Figure 2 (below) shows the venture capital financing volumes for the years 1999 to 2011, subdivided into business sectors. First, the high transaction volume of 1.2 billion francs in 2000 is striking. Compared to the other years, of which 2005 and 2007 show the highest total volumes (slightly over 560 million francs), 2000 can be classified as an outlier year.

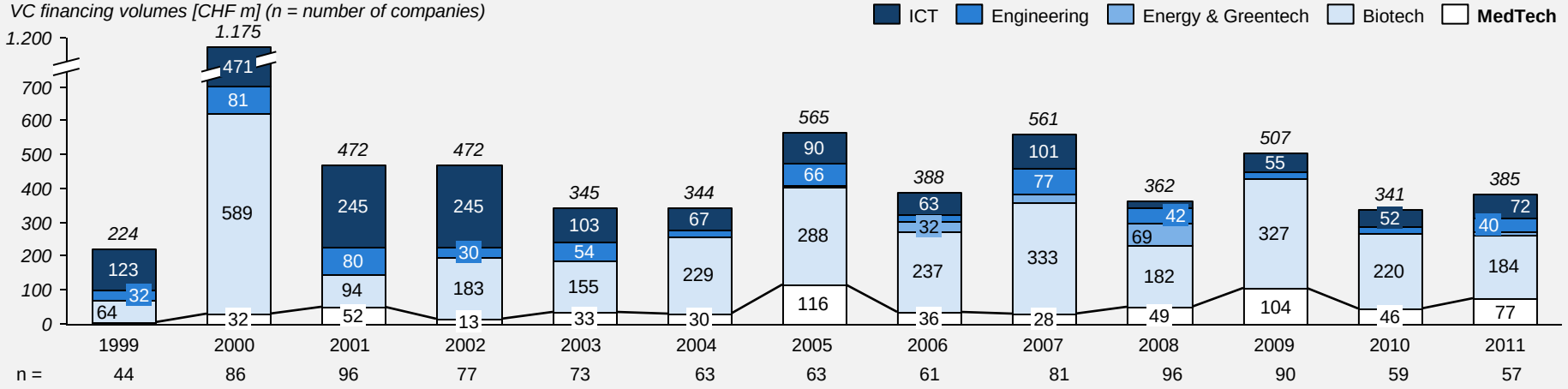


Figure 2. Venture capital financing volumes for Swiss startups

Rising venture capital opportunities for medtech startups (3/3)

Nils Herold and Dr. Simon Zaby, Department of Financial Management, University of Basel

Besides, the collapse of the "new economy" in 2000/2001 resulted in a drop in transaction volumes. Excluding the year 2000, invested venture capital amounted to 467.9 million francs on average. The lowest transaction volume (225.9 million francs) can be noticed in 1999.

Considering the invested venture capital volumes, biotechnology plays a major role: Its proportion of the "funding pie" accounted for more than the half (50.7%) over the past eleven years. Lower shares are represented by the sectors "ICT" (27.1%), "medical technology" (10.2%), "engineering" (9.6%) and "energy & greentech" (2.5%).

The analysis of venture capital financing volumes shows an even greater shift from information and communication technology to life sciences. The ICT sector accounted for 54.6% of 1999's transaction volume. In 2011, however, it played a pretty smaller role (18.8%). In contrast, the biotechnology industry's share of venture capital financings grew from 28.4% to 47.8% and the proportion of the medical technology companies expanded from 2.7% to 20%. The other sectors recorded annual fluctuations, however no trend can be observed in their relative significance.

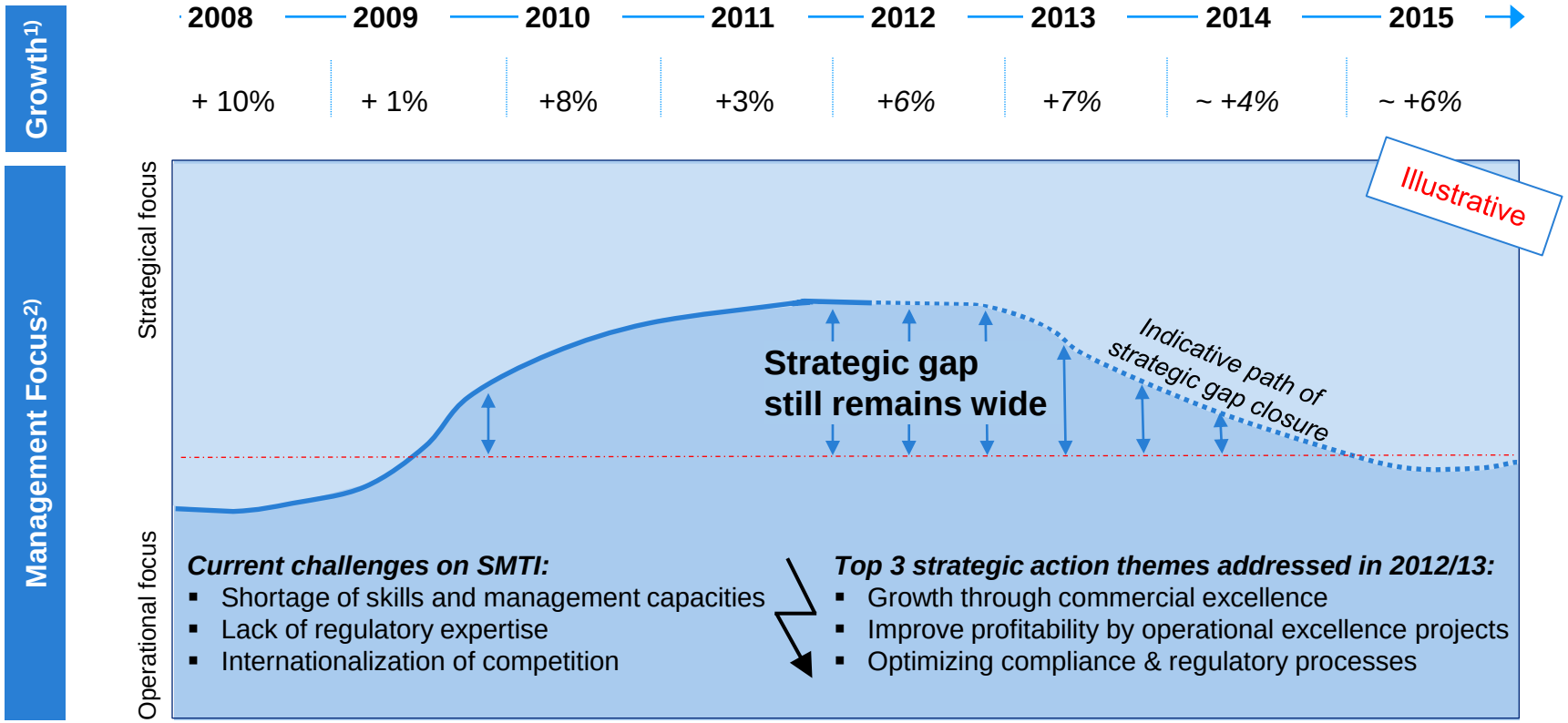
Data source: Venture Capital Database of the University of Basel (Department of Financial Management, Faculty of Business and Economics). 40.3% of the covered innovative startup companies are allocated to the "information and communication technology (ICT)" industry, 25.5% to the "engineering (ENG)" sector, 19.4% are assigned to "biotechnology (BIO)", 12.2% to "medical technology (MED)" and 2.6% operate in the area of "energy & greentech (EGT)". Commonly, the categories BIO and MED are summarized as "life sciences".

Nils Herold, *MSc, is a research assistant at the Department of Financial Management, Faculty of Business and Economics, University of Basel. After completing his studies in Economics at the University of Basel in 2010, he started his doctoral studies and was hired as a research assistant at the Department of Financial Management. Between his Bachelor's and Master's studies, he worked as an investment banker at UBS. His research interests lie in the fields of venture capital, buyouts and asset management.*

Dr. Simon Zaby *is a post-doc research fellow and associate lecturer at the Department of Financial Management, Faculty of Business and Economics, University of Basel. After studying Business Administration at the Ingolstadt School of Management, Catholic University of Eichstaett-Ingolstadt (Germany), and International Relations at the Graduate School of International Studies, Sogang University, Seoul (Korea), he was hired as a research assistant at the Department of Bank Management and Controlling, Faculty of Business and Economics, University of Basel. In 2009, Dr. Zaby was awarded a Doctorate of Political Science at the University of Basel. His research focusses on venture capital. Moreover, he is an associate lecturer in Financial Accounting at the University of Basel.*

D. Outlook: Trends and new opportunities

SMTI manager insufficiently address current challenges with proper strategic actions in a single digit growth environment



- SMTI firms perform above the Swiss industry average and lead a highly innovative sector even by international comparison
- Short to mid-term fixes focus on improving and strengthening the competitive edge to secure the established position
- New business models to secure future growth niches seem to arise frequently from foreign medtech firms

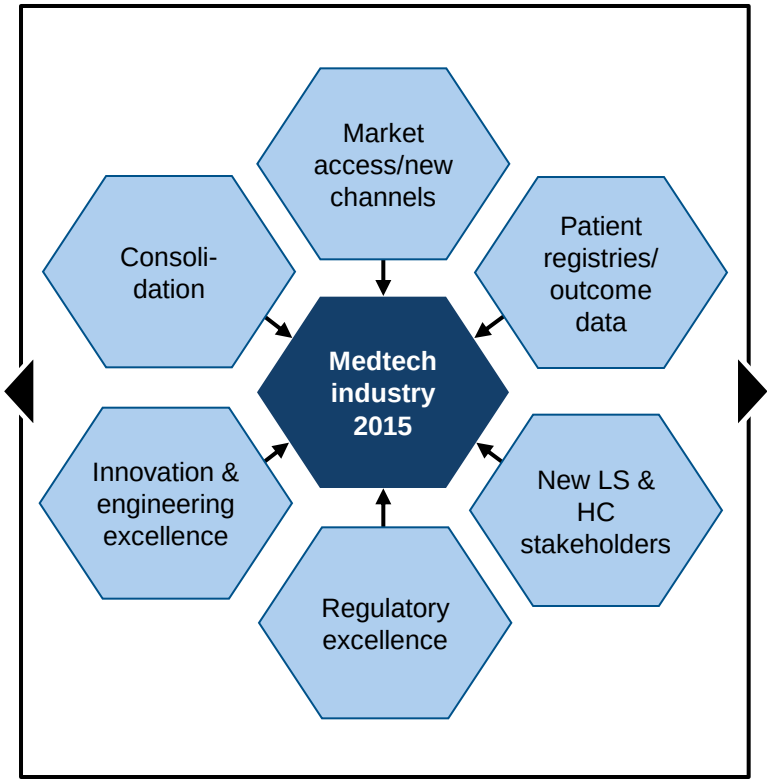
1) Estimated growth expectations – Global Data; Medtech Switzerland research
2) Source: SMTI 2011

Mastering six key dimensions helps to overcome today's challenges

IMPACT ON SWISS MEDTECH ECOSYSTEM

- Increased pressure on price and margins
- Manufacturer to suppliers' purchasing loyalty under threat
- Medtech value chains are becoming increasingly more international
- Small Swiss manufacturers are becoming sub-suppliers to big medtech players
- The current know-how and skill base may no longer sustain future business success adequately
- Reluctance towards consolidation topics leads to a shrinking manufacturer/supplier base
- Cash-rich investors cherry pick best-in-class Swiss companies

KEY DIMENSIONS



PRINICPLES FOR FUTURE SUCCESS

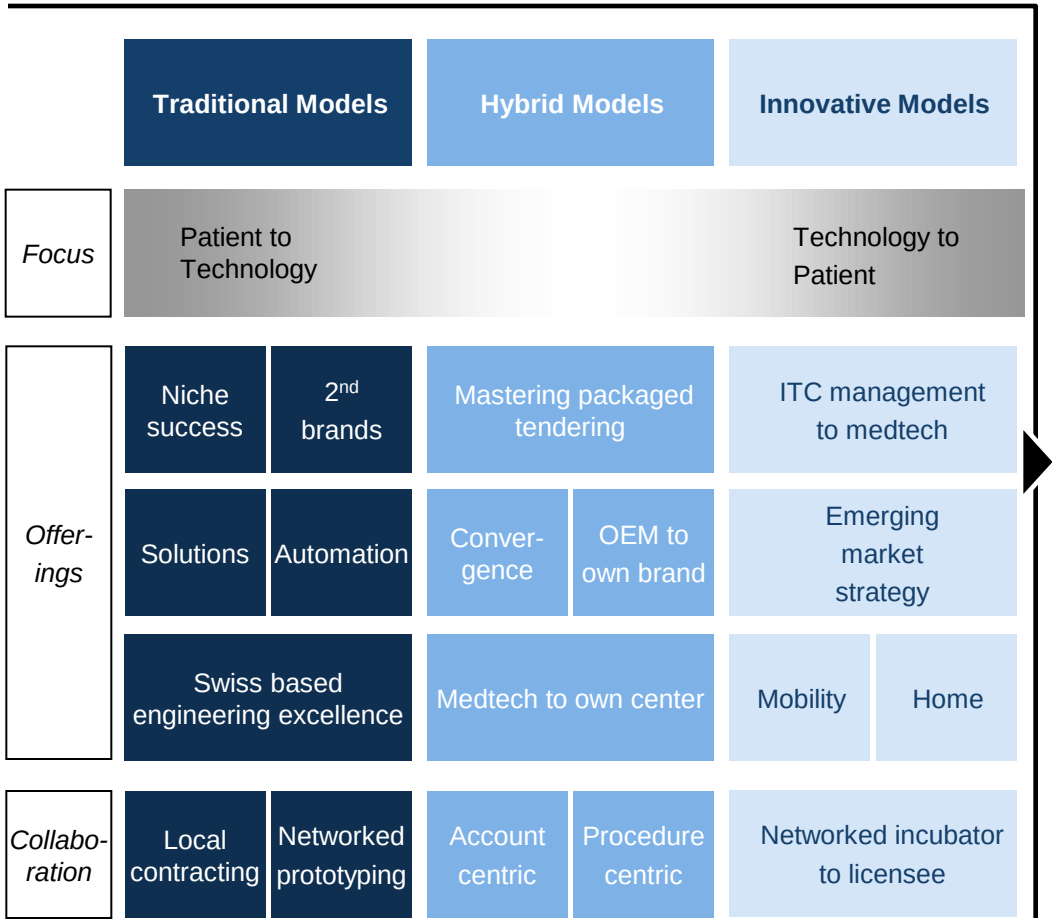
- Secure market access by collaborating with experts or other medtech companies
- Adapt to the needs of new and emerging stakeholders
- Provide data evidence that your solution is better than current, existing products
- Hire regulatory experts to understand increasingly demanding regulatory frameworks
- Improve the efficacy of the innovation process to keep a competitive advantage
- Drive actively the consolidation process in the industry by joining forces with other medtech companies

Future key success dimensions urge companies to rethink their operations and business models

Note: Business models discussed here are complementary or new business models based on existing offerings

Building on non-traditional business models promotes future growth

CURRENT AND UPRISING BUSINESS MODELS



COMMENTS

- Depending on the maturity stage, SMTI firms advance gradually to new offering models and new forms of collaborations
- These are internationally driven approaches – SMTI firms are not seen as “forerunners” on a broader base
- Hybrid and/or innovative models still carry first mover advantages in many geographical markets

RECOMMENDATIONS

- Positive “Top-line” effects can be achieved by exploring new business models or channels
- Success can be found in higher patient autonomy paired with a combination of a holistic treatment approach and a higher degree of mobile and ITC solutions
- Build emerging market strategies and build local value products
- Managing a broader selection of channels which become internationally competitive. Thus, investments must also cover skill enhancements beyond engineering

Note: Business models discussed here are complementary or new business models based on existing offerings

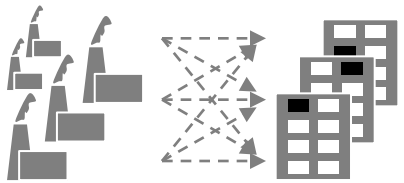
Future market access is the dominant factor for long-term success

MARKET ACCESS MODELS [illustrative]

Traditional

Open, highly competitive market consisting of individual offerings

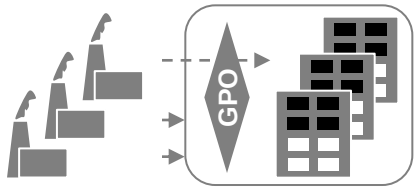
1-on-1 account relations



Evolving

Rise of GPOs & package tendering demands consolidated offering structures

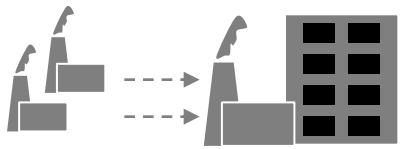
GPOs/package tenders



Future in the making

Manufacturers operate HC providers by forward integration

Full forward integration



Manufacturers Providers Share of wallet

COMMENTS

- Accounts are segmented in different departments, relationships to relevant medical staff are key for success
- Accounts make individual purchase orders based on decentralized decisions with multilateral relationships to various manufacturers
- Manufacturers compete with offerings on an individual account basis

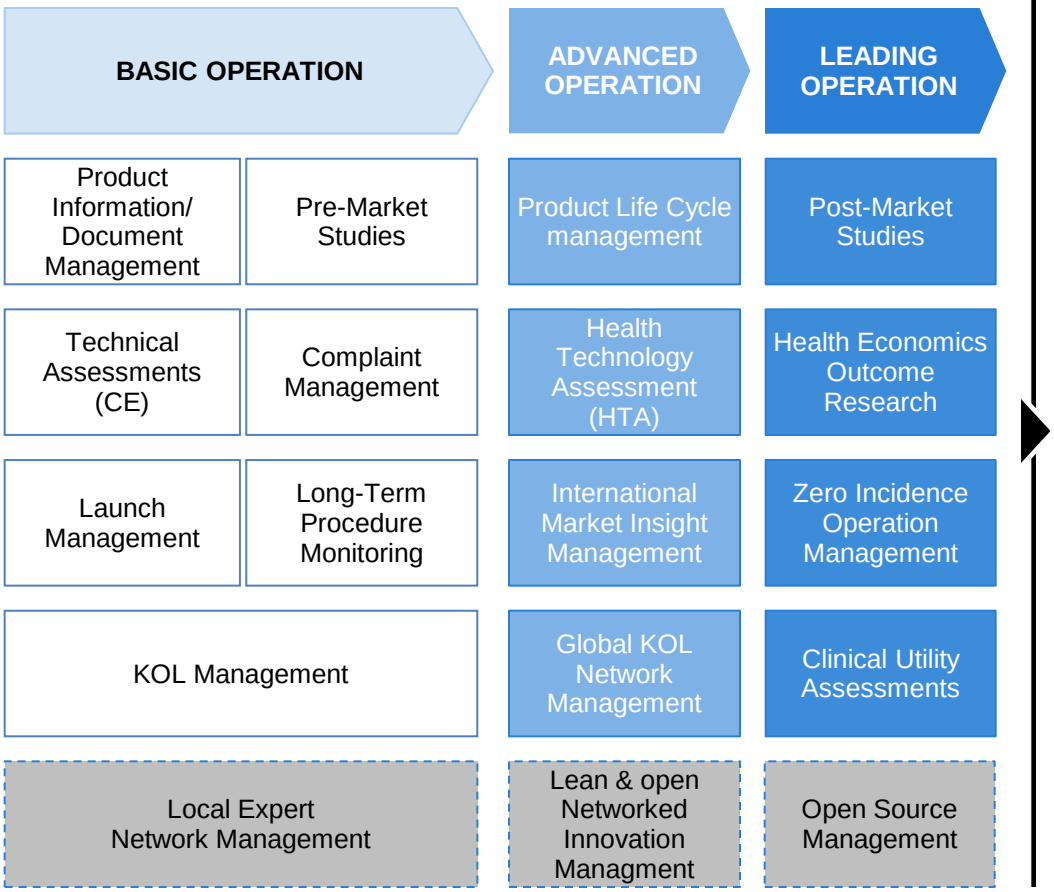
- Accounts professionalize procurement for example by GPOs or specialized purchasing staff hindering direct account access
- Bilateral negotiations between account and manufacturers are ruled via package tenders and require holistic treatment solutions
- Survival strategies consist of excessive bundling of products/services that exceed current needs of procurement

- Manufacturers strive to own and operate former accounts and deliver integrated treatment solutions and bolstering their portfolio
- Integrated accounts maximize their share of profit margin
- Joint ventures and integrated healthcare providers allow only a few big manufacturers to dominate the market while small manufacturers are pushed back to 2nd tier suppliers

Note: Business models discussed here are complementary or new business models based on existing offerings

Topics shall drive SMTI management attention

MANAGEMENT CAPACITIES



Internal capabilities
Cross-network capabilities

COMMENTS

- The fundamentals of growth are based on stringent advancements in quality, transparency and cost efficiencies
- Competitive cost advantages arise in mastering global and/or open networks for lean, high quality and fast track innovation management
- Thus, SMTI medtech operations will revamp themselves in order to maintain/widen their competitive edge

RECOMMENDATIONS

- Increase management attentions towards advanced or even leading operational topics to overcome solely “bottom-line” rescue effects
- Build and then leverage SMTI ecosystems center of excellences and capacities
- Reach out to potential collaboration partners in order to established stronger networks to overcome rising disloyalty of manufacturers and sourcing pressures of GPOs
- Establish early holistic treatment evidence for new product

Note: Business models discussed here are complementary or new business models based on existing offerings

Competitive SMTI companies have to tie their efforts around market access

Unlock your market access potential in target markets …

… by succeeding in these focus areas

- Market insights/competitive intelligence
- Key opinion leaders and stakeholder management
- Offering portfolio
- Alliances/consolidation
- Pricing/reimbursement
- HEOR/HTA data
- Key account/channel management

Market access is key:

- Penetrate Germany, the U.S., France and develop emerging market strategies for China, India and Brazil
- Gather market intelligence on own brands across target markets
- Seek closeness to key opinion leaders and key payer stakeholders in target markets
- Merge/closely collaborate to participate in package tenders
- Consider HEOR/HTA already in early product development stages to obtain competitive edge within portfolio
- Foster key account management capabilities and explore unconventional niche channels

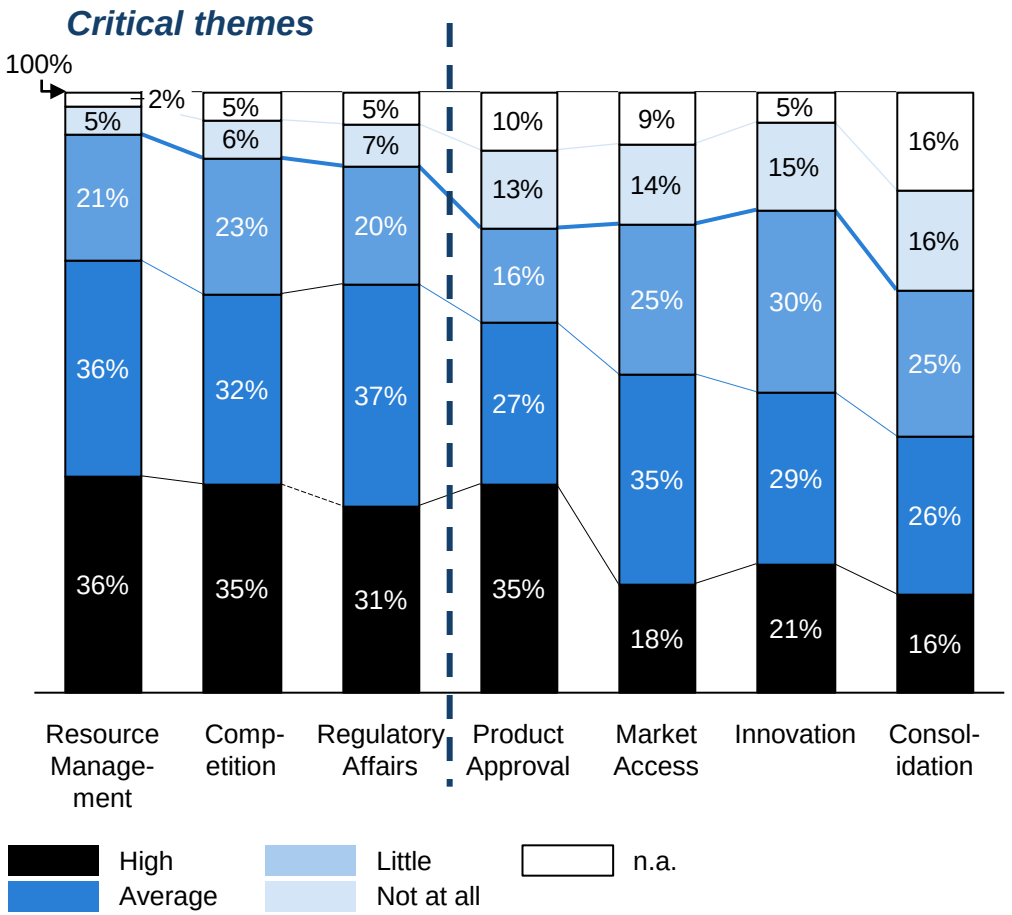
Last but not least …

- Build talent pool through education/recruiting programs to meet future needs adequately in commercial and regulatory excellence

Appendix

Consolidated view on most critical challenges themes

PROPORTION OF CHALLENGES PER FOCUS AREAS [in %]



COMMENTS

- When categorizing all challenges, SMTI firms are most affected by resource management, regulatory affairs and competition
- These areas dominate significantly and are named as critical topics of SMTI
- SMTI firms indicated innovation and market access as lesser challenges
- Consolidation was the least concerning as management did not broadly engage in vertical or horizontal consolidation activities

FURTHER OBSERVATIONS

- Increasing regulations in export markets and a concurrent lack of expert knowledge impedes international competitiveness for export-dependent SMTI firms on a broad scale
- Compliance, quality management, HEOR and regulatory affairs become critical capabilities which are scarce in the recruiting market

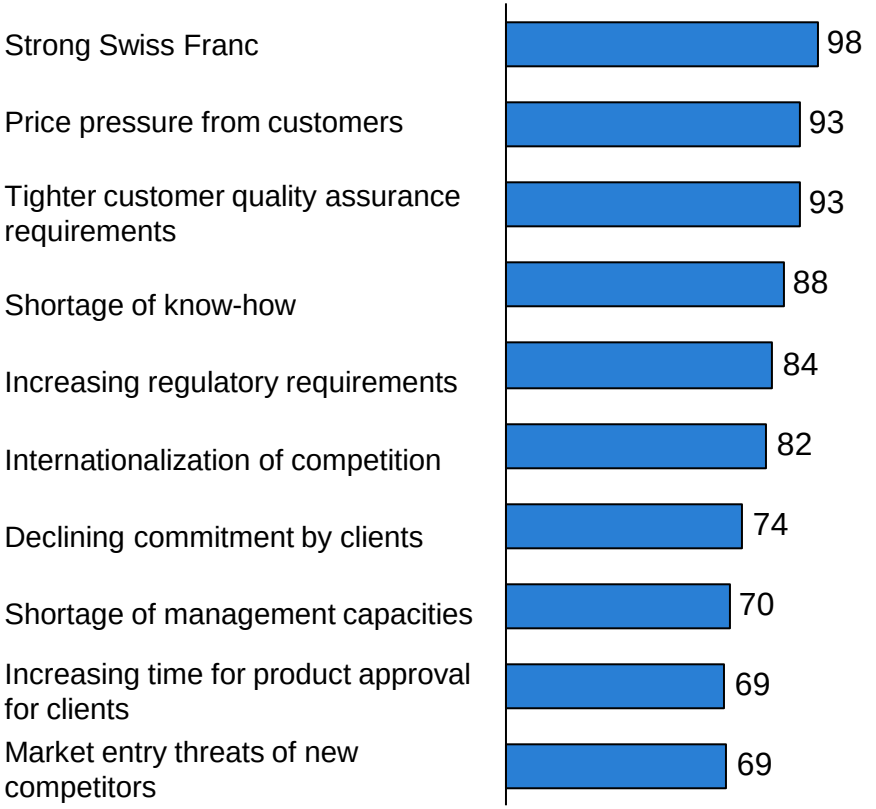
n = 316

Top 10 challenges for manufacturers and suppliers

RANKING OF CHALLENGES FOR MANUFACTURERS

n range = 66-69; multiple answers possible

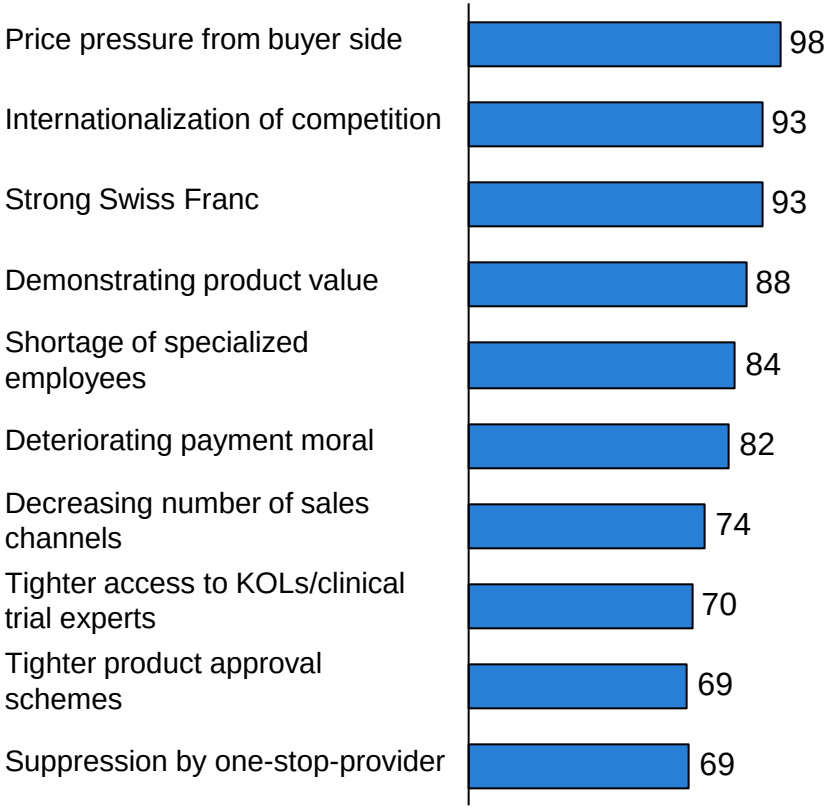
… AND FOR SUPPLIERS [in %]



n range = 111-112; multiple answers possible

Top 10 challenges for traders & distributors (T&D) and service providers

RANKING OF CHALLENGES FOR T&D



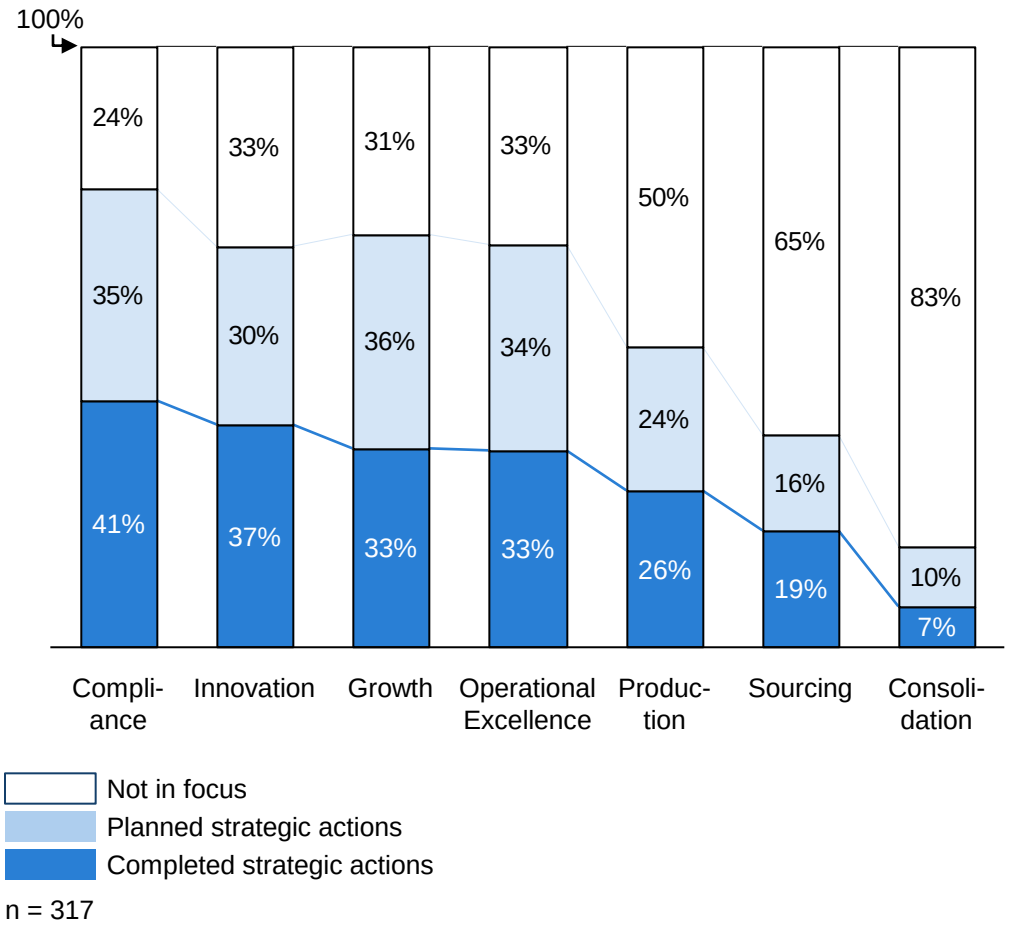
n range = 35-36; multiple answers possible

… AND FOR SERVICE PROVIDERS [in %]

n range = 89-92; multiple answers possible

Consolidated view on strategic action topics

PROPORTION OF ACTIONS ACROSS FOCUS AREAS



n = 317

COMMENTS

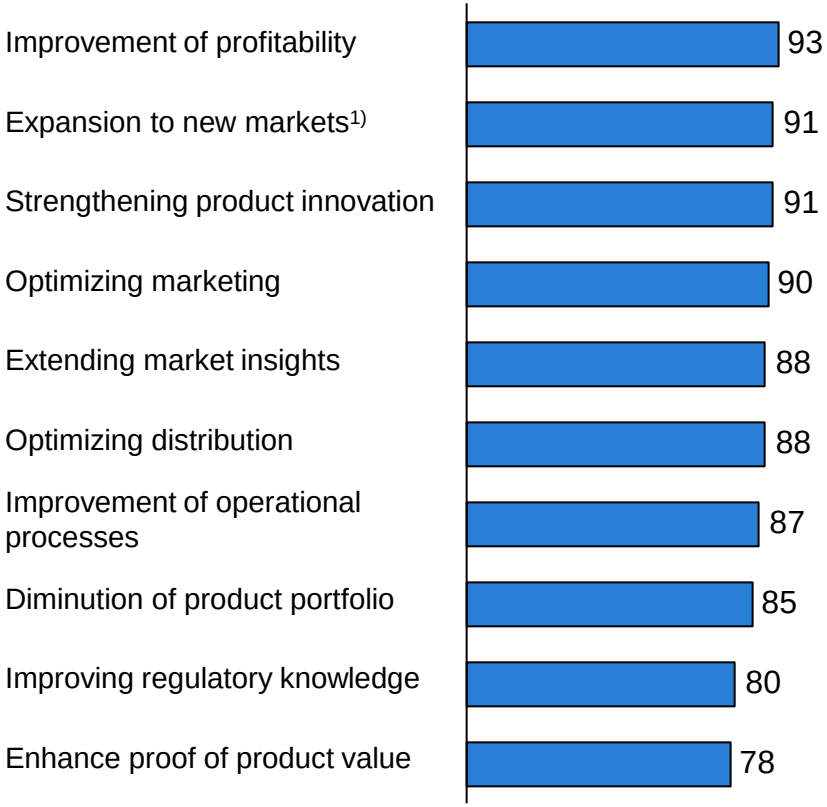
- Since our last report, the SMTI firms focused their strategic activities mainly on compliance, growth, innovation, and operational excellence of projects
- The least attention was given to sourcing and consolidation projects due to both the solid long-term partnerships and the reduced segment pressure from providers/GPOs
- SMTI firms express a stable production and sourcing environment with a significant share of firms not engaging in any related activities
- Consolidation is not a major focus area and represents a neglected growth opportunity

The current project pipeline to improve the strategic position and operations is vast. We expect:

- an increase in projects regarding growth and consolidation opportunities, but also regarding operational improvements
- fewer projects regarding compliance, production, sourcing improvements, and innovation

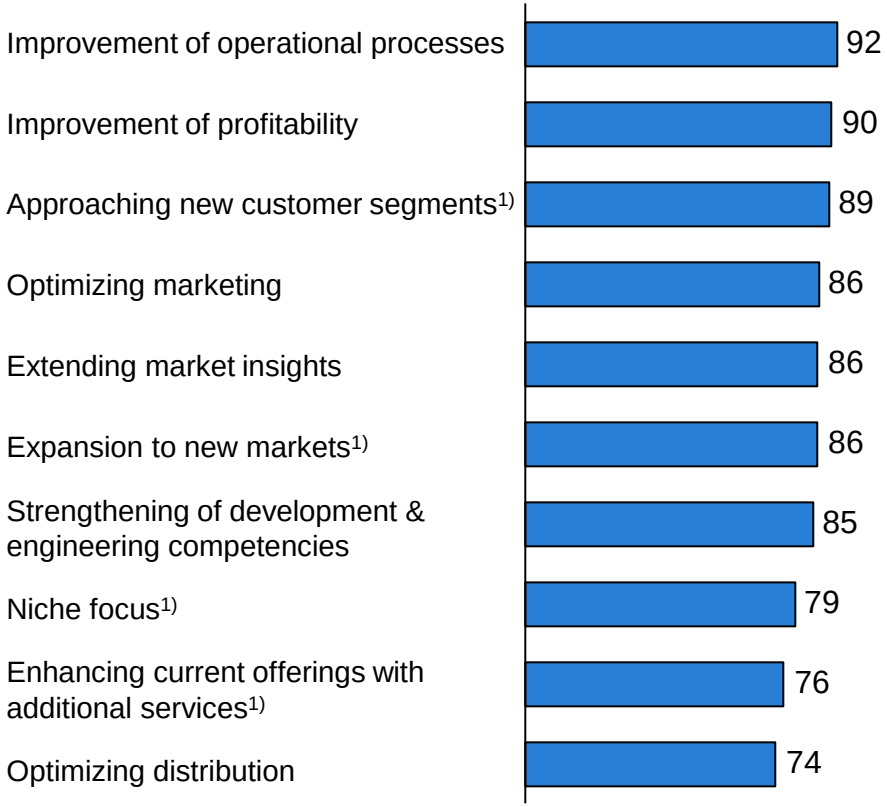
Top 10 priorities for manufacturers and suppliers

RANKING OF STR. ACTIONS FOR MANUFACTURERS



n range = 66-69; multiple answers possible

… AND FOR SUPPLIERS [in %]

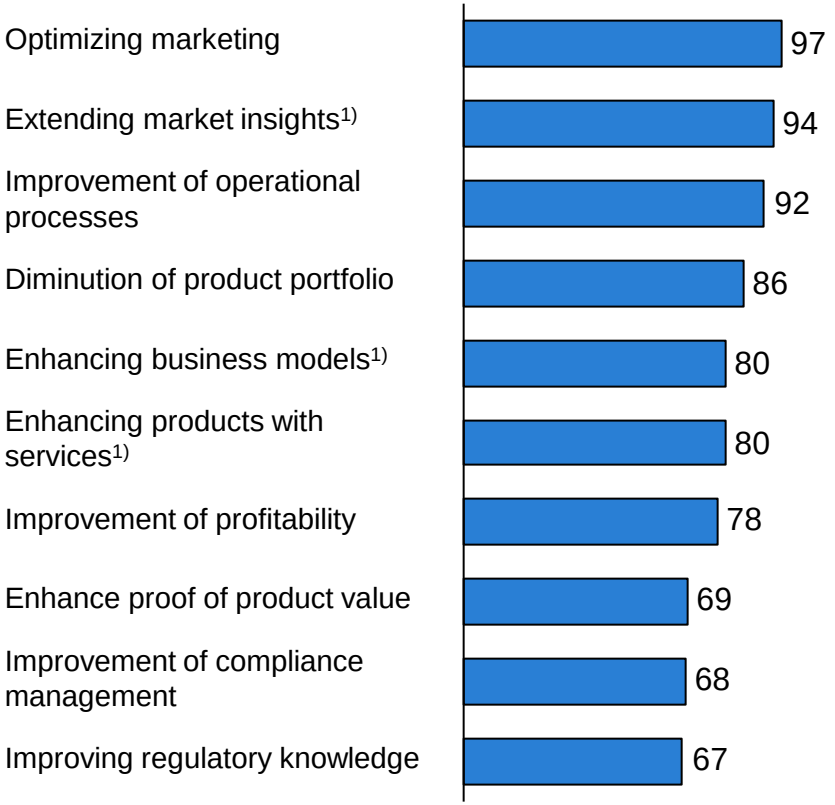


n range = 111-112; multiple answers possible

1) Considered to be a strategic impact action; others have a stronger operational focus

Top 10 priorities for traders & distributors (T&D) and service providers

RANKING OF STRATEGIC ACTIONS FOR T&D



n range = 35-36; multiple answers possible

… AND FOR SERVICE PROVIDERS [in %]

n range = 89-92; multiple answers possible

1) Considered to be a strategic impact action; others have a stronger operational focus

Strategic actions by medtech revenue share

MEDTECH REVENUE SHARE	Action 1	Action 2	Action 3	Action 4	Action 5
100%	Improve operations & processes	Increase market insights	Expand regulatory know-how	Improve profitability	Expansion into new markets
75-100%	Improve operations & processes	Improve profitability	Increase market insights	Expand regulatory know-how	Optimization of marketing
50-75%	Product Bundling	Strengthen cost/benefit capabilities	Develop new pricing models	Expand local 2nd/3rd sourcing partnerships	Partnering with manufacturers
25-50%	Improve operations & processes	Increase market insights	Improve profitability	Expansion into new markets	Broadening product portfolio with services
<25%	Improve operations & processes	Increase market insights	Expansion into new markets	Improve profitability	Focusing on new customers/ segments

Core SMTI priorities

COMMENTS

- Fully established or new/start-up SMTI firms target five priorities areas with a common set of strategic actions:
  - Improve operations & processes
  - Increase market insights
  - Improve profitability
  - Expand regulatory know-how
  - Expansion into new markets
- Firms with partial medtech business activities of around 50% have opposing behavior centering their strategic activities on:
  - Product, price and partnering
  - Defending market shares
  - Defending/overcoming fierce cost pressures due to lack of full medtech product focus

Range of n = 215 – 309; multiple answers possible

The Innovation Promotion Agency CTI – From Science to Market

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Innovation Promotion Agency CTI

The CTI is the Confederation's Innovation Promotion Agency

CTI lends support to:

- Market-oriented R&D projects
- Creation and development of start-up companies
- Knowledge and technology transfer

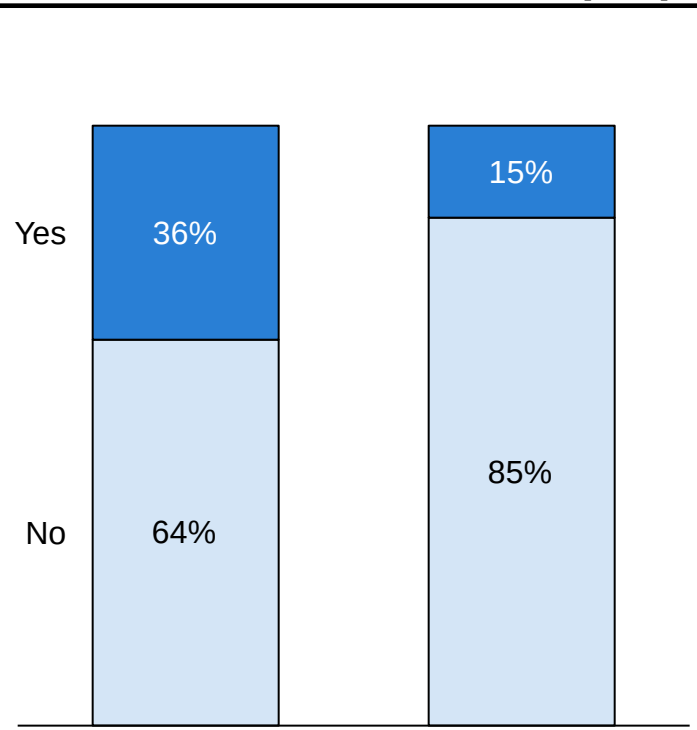
Key Figures

- In 2011 CTI had a record year by assessing a total of 1,110 R&D funding applications (regular funding and special measures combined)
- Experts from science and industry approved 556 projects (incl. CTI vouchers)
- 26 entrepreneurs received the CTI Start-up Label in 2011
- Start-ups with the CTI Start-up Label have an above average success rate of 86%
- CTI Medtech has been supporting up to 35 projects annually. During the special innovation program 35 additional projects were realized with federal support totaling CHF 15m
- Every year 10 to 20 medtech start-up companies are enrolled in the CTI Start-up and Entrepreneurship program

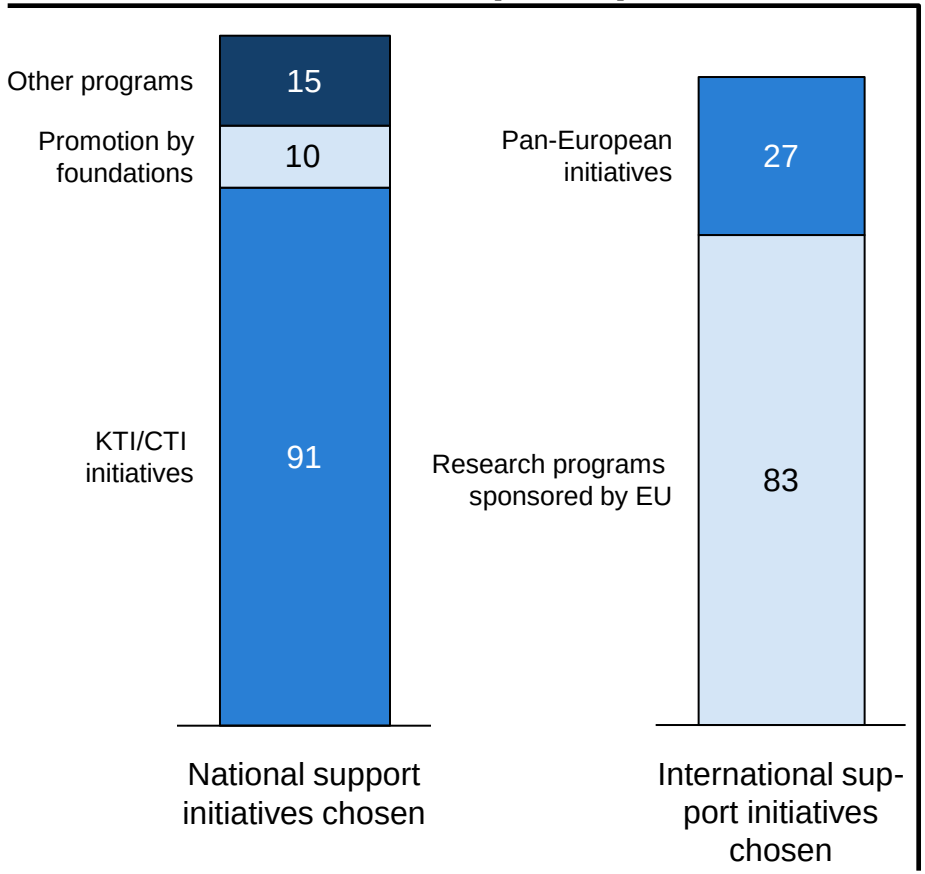
Source: CTI/KTI

36% of responding firms have participated at national support initiatives such as CTI/KTI [1)]

PARTICIPATION IN SUPPORT PROJECTS [2011]



SUPPORT PROJECTS CHOSEN [%, 2011]

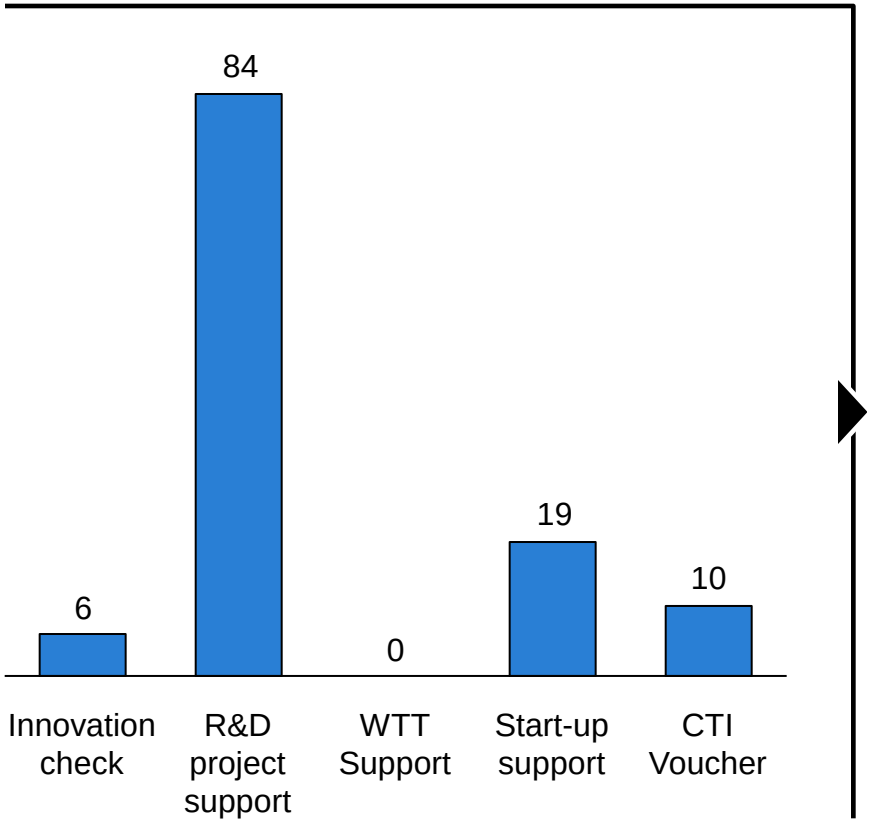


Participation in support projects: n (national initiatives) = 275, n (international initiatives) = 270
Support projects chosen: Multiple answers possible; n (national initiatives) = 98, n (international initiatives) = 41
1) According to SMTI 2010, 77% of responding suppliers and manufacturers know the CTI/KTI initiatives.

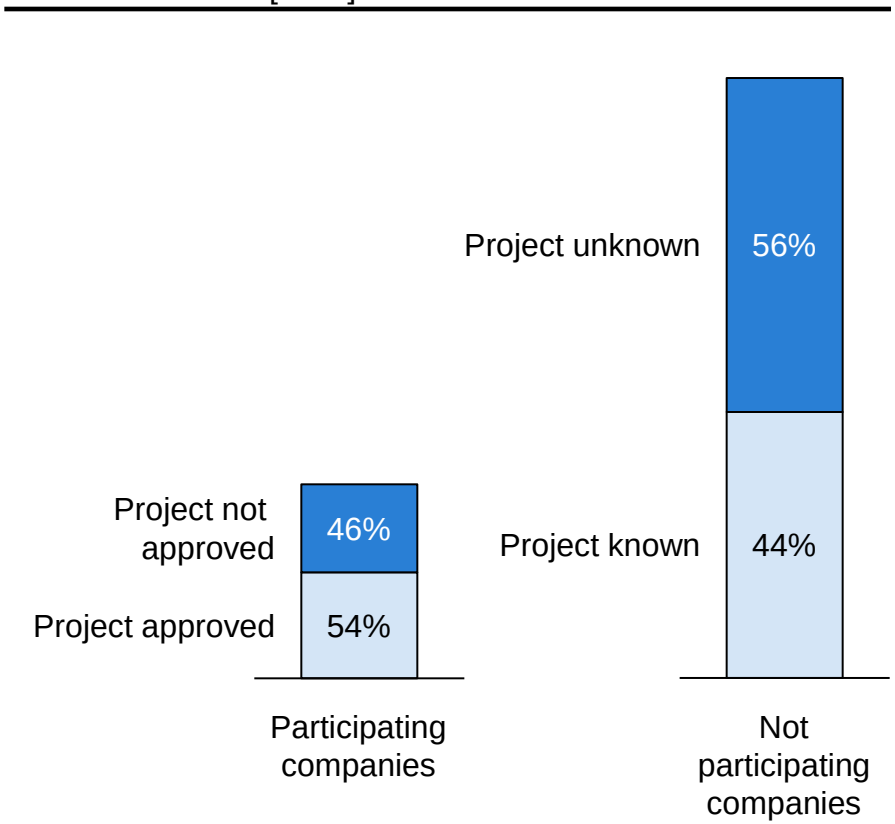
Source: SMTI 2012, SMTI 2010

Most companies surveyed are supported by KTI/CTI R&D project funding with 55% of firms also participating in Accompanying Measures of the strong Franc

PARTICIPATION IN CTI/KTI PROJECTS [% 2011]



PARTICIPATION IN ACCOMPANYING MEASURES OF THE STRONG FRANC [2011]



Participation in CTI/KTI projects: n = 99, multiple answers possible
Participation in accompanying measures of the Strong Franc: n (participation) = 57, n (no participation) = 246

Selected interviews, in-depth survey, and additional advisory board reviews form the basis of the SMTI 2012 survey[1)]

OBJECTIVE

The **SMTI 2012**

- Aims to embrace as many Swiss medtech industry firms as possible operating internationally
- Provides an up-to-date micro- and macro-economic overview of this important industry
- Reflects on the trends, challenges and priorities along the SMTI value chain
- Highlights and interprets changes in the industry, and where possible draws comparisons to earlier SMTI surveys
- Provides insights, potential answers and alternative management actions to SMTI managers in the context of the current changes in the healthcare environment
- Ensures comparability with other international industry studies applying internationally recognized definitions

To track SMTI trends this report will be issued annually

METHODOLOGY

- Tailored questionnaire-based approach specifically addresses manufacturers, suppliers, traders & distributors, and service providers
- Focused analysis on three topics:
  - **Profile of the industry** - addressing size, structure and innovation/growth dynamics of the SMTI
  - **Results of the survey** - covering current challenges, tomorrow's strategic needs and a perspective on international markets:
    - Specific analyses focus on "Core SMTI" questions, which is a subset answerable by all participants
    - Detailed analyses on "industry categories" questions, answerable only within respective categories
  - **Expert articles** on selected topics complement the survey results
  - **Outlook** for SMTI
- Direct market insight and current management thinking was accessed through primary research, i.e. the survey's advisory board and C-level interviews
- Additionally, expert interviews and secondary research helped to complete the report

Remark: Due to an update of current questionnaires, the comparability with results of SMTI 2010 survey poses some limitation

1) Survey was conducted in spring 2012, reflecting financial data from 2011. Qualitative answers are based on sentiments of mid-year 2012

The well established Swiss medtech value chain is a key success factor

Basic research

Basic research for radical product innovations

- National universities and international knowledge networks
- Five university hospitals in Geneva, Lausanne, Berne, Basel and Zurich
- National research organizations like PSI and EMPA
- National research programs
- European framework programs

Applied research

Developing and prototyping supported by

- CTI/KTI Medtech
- National R&D programs
- Universities and schools of applied sciences, including technology transfer organizations
- Specialized companies, e.g. for contract engineering
- International knowledge networks

Supply & Service[1)]

Highly specialized and internationally sought suppliers in key technologies, e.g.

- Information and Communication Technology (ICT)
- New materials, surface technology
- Robotics and nanotechnology
- Micro-technology
- Metal, plastics, and ceramic processing
- Automation and assembly
- Tool and mould manufacturers

Manufacturing

Manufacturing industry with broad range of high-tech products, e.g.

- Active and non-active implants
- Anaesthetic and respiratory devices
- Dental
- Electro-mechanical equipment
- Hospital hardware
- Diagnostics
- Ophthalmology
- Reusable and single-use instruments
- Technical aids for disabled

International sales

Worldwide sales of Swiss medical technology products by traders & distributors supported by

- Company affiliates
- Export Platform Medtech Switzerland
- Osec together with its Swiss business hubs abroad
- Swiss pavilions at international exhibitions/fairs
- International industry associations

Customer & payers

Worldwide customers and stakeholders, e.g.

- Patients, especially in out-of-pocket markets
- Individual hospitals, hospital chains and purchasing associations
- Healthcare professionals
- Diagnostic laboratories
- Research laboratories
- Key Opinion Leaders (KOLs)
- Regulatory authorities
- Certification support

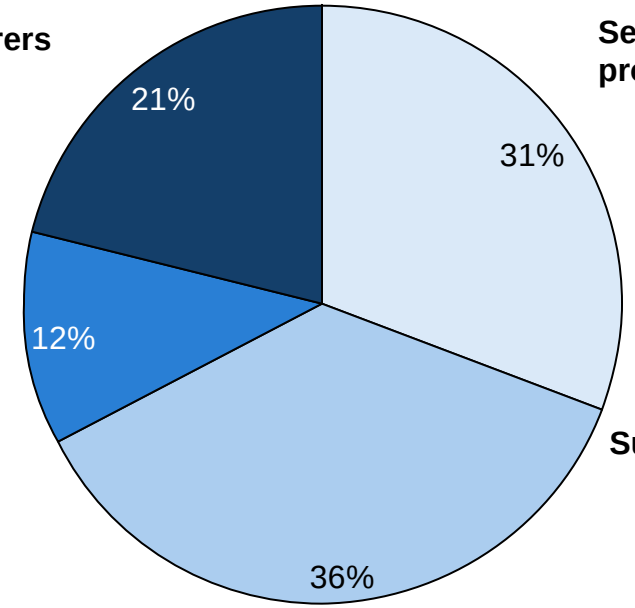
1) Service providers, depending on their specialization are part of any of the value chain building blocks

Results are based on 321 participating companies

DISTRIBUTION OF PARTICIPATING COMPANIES ACCORDING TO CATEGORY

Companies that produce medical devices under their own brand

Manufacturers



Service providers

Companies that provide specialized services to medical technology companies or for medical devices

Companies that trade or sell medical devices, such as local wholesalers and affiliates of national or international companies

Traders & distributors

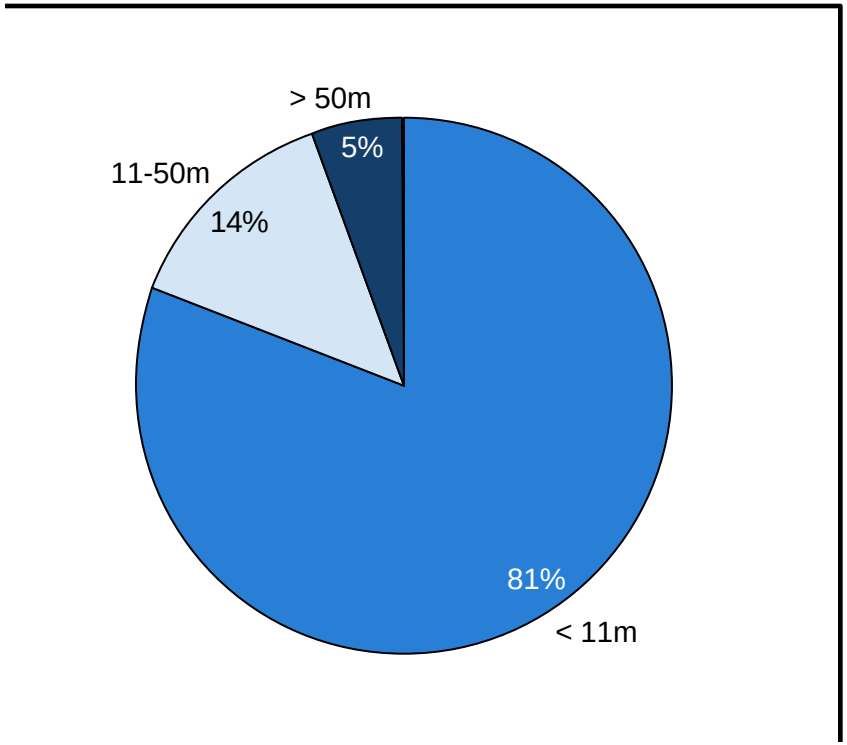
Suppliers

Companies that supply major components to the medical technology industry without having their own brand. Usually these companies also supply components to other related industries

n = 321

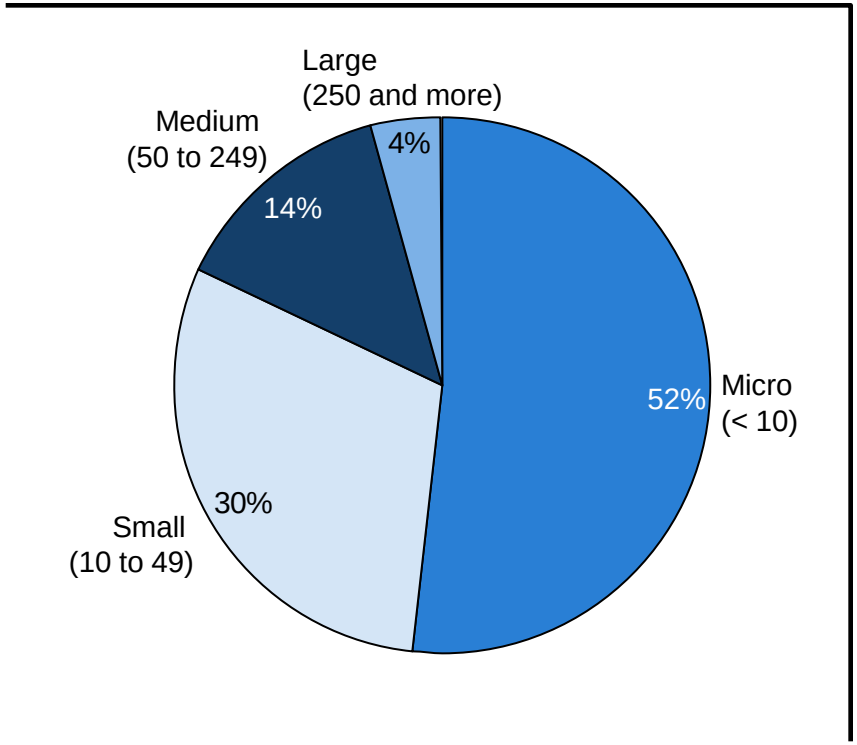
The SMTI 2012 survey sample represents the whole industry – the majority of companies are small or medium sized

ACCORDING TO COMPANY TURNOVER [CHF]



n = 257

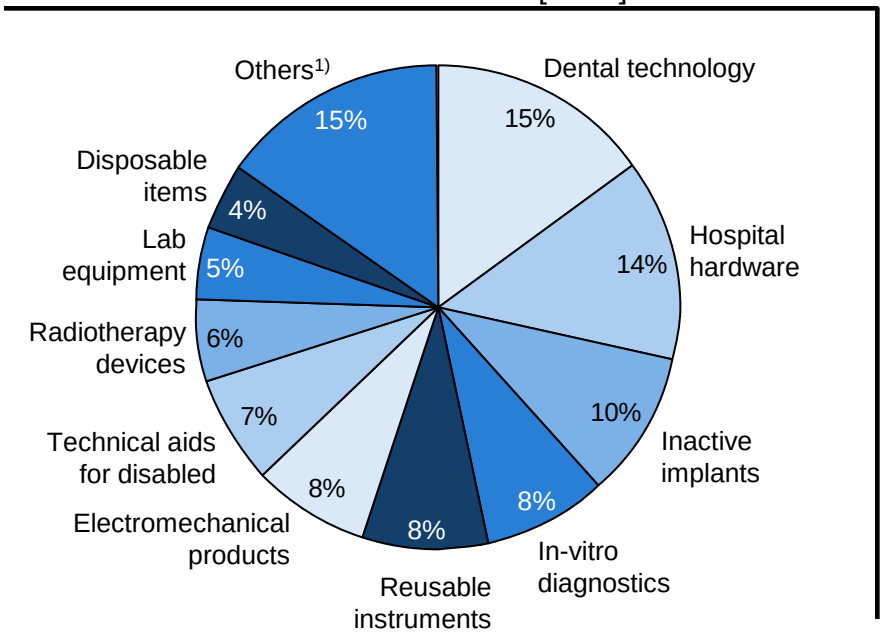
ACCORDING TO COMPANY SIZE [number of employees]



n = 265

Manufacturers and suppliers are highly segmented

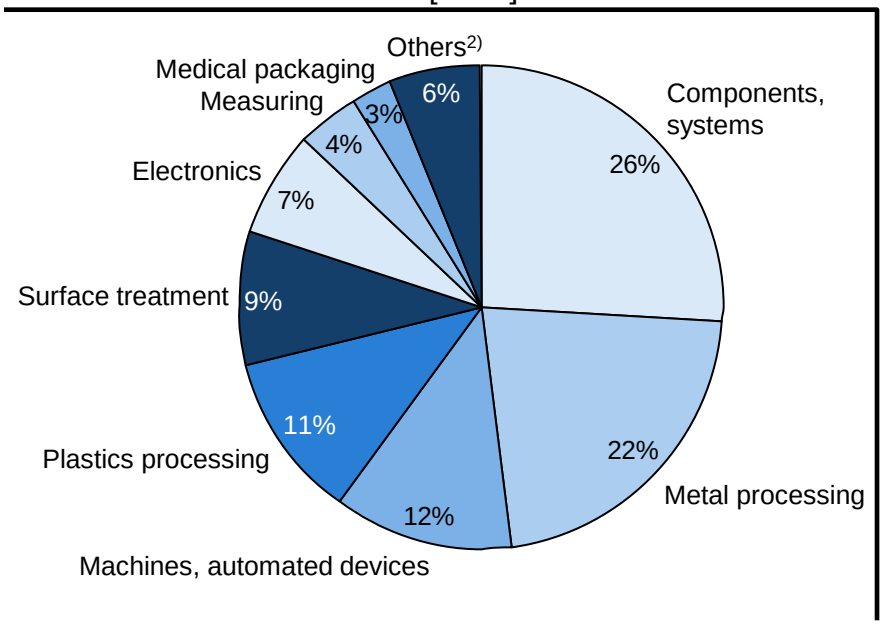
MANUFACTURERS BY CATEGORY [2012]



n = 386 companies (including start-up companies)

- Medtech manufacturers in Switzerland specialize in complex products that require a high degree of know-how
- Generally the basis of medtech manufacturers is broad, however dental and orthopedic implants are leading

SUPPLIERS BY CATEGORY [2012]



n = 477

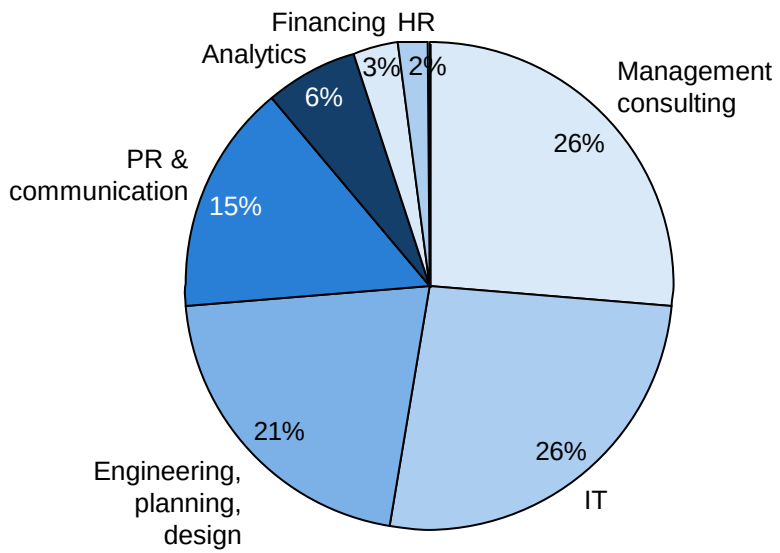
- The split of suppliers in the medtech industry reflects the Swiss industrial heritage: The watch making and machine engineering industry
- Suppliers are highly specialized in a niche, often offering customized products to medtech manufacturers

1) Others include (in descending order): ophthalmology, patient aids, anaesthetic and respiratory technology, biological products, active implants, biologically produced products and complementary therapy products
2) Others include (in descending order): auxiliary material and green ware, ceramics and sterilization

Source: Medical Cluster database

Service providers cover the whole value chain

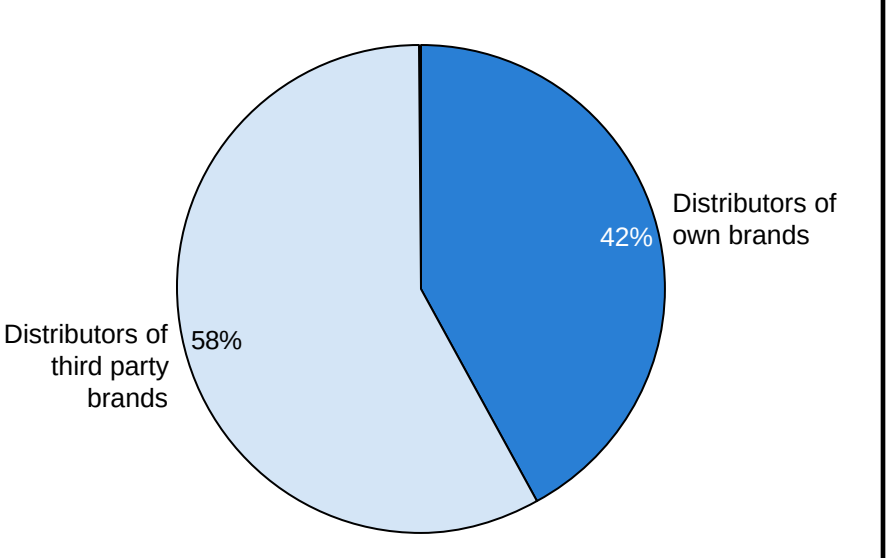
SERVICE PROVIDERS BY CATEGORY [%, 2012]



n = 415

- Service providers are dominated by three almost equally sized categories
- Management consulting and IT are services especially needed by medtech SMEs, be it interim management or IT support for complex manufacturing processes

TRADERS & DISTRIBUTORS BY CATEGORY [%, 2012]

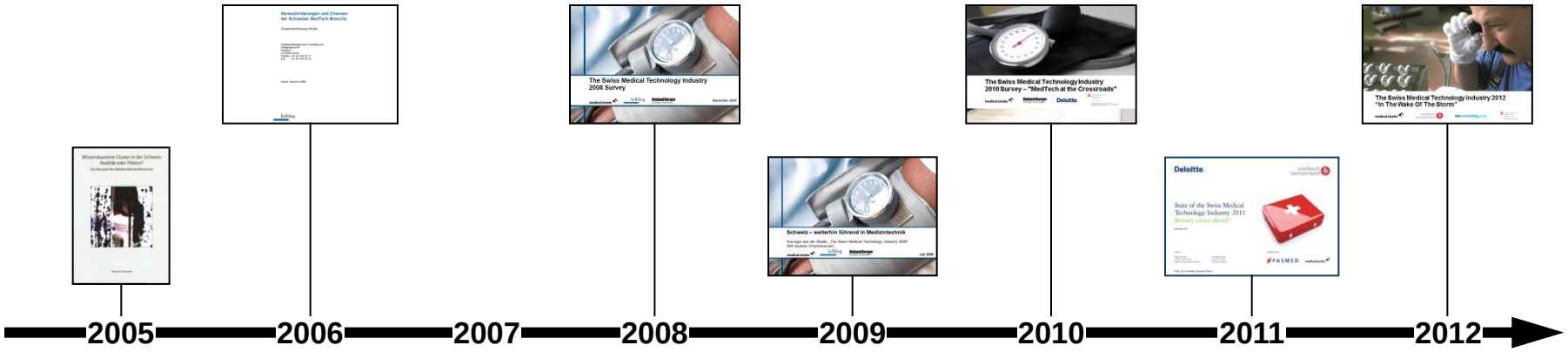


n = 340

- Among all traders & distributors active in Switzerland, 42% are distributing their own brands
- Traders & distributors are the smallest category of the four main SMTI categories

Source: Medical Cluster database

This is the 7th report on the Swiss Medical Technology Industry



	2005	2006	2008	2009	2010	2011	2012
Description	Wissensbasierte Cluster in der Schweiz: Realität oder Fiktion? – Das Beispiel der Medizinaltechnikbranche	Herausforderungen und Chancen der Schweizer MedTech Branche	SMTI 2008	Schweiz – weiterhin führend in Medizintechnik Quick-Check on SMTI 2008	SMTI 2010	State of the Swiss Medical Technology Industry 2011	SMTI 2012
Focus	▪ Innovation ▪ Knowledge based actors ▪ Structure and cluster of the SMTI	▪ Challenges and opportunities	▪ Challenges and strategic actions ▪ R&D	▪ Growth expectations ▪ Challenges and strategic actions	▪ Challenges and strategic actions ▪ Development of healthcare market ▪ R&D	▪ Growth expectations ▪ Challenges and strategic actions	▪ Challenges and strategic actions ▪ Internationalization of markets
Authors	Dr. Patrick Dümmler	Dr. Patrick Dümmler Beatus Hofrichter	Dr. Patrick Dümmler Beatus Hofrichter René Willhalm Peter Biedermann	Beatus Hofrichter René Willhalm	Dr. Patrick Dümmler Beatus Hofrichter	Beatus Hofrichter Dr. Patrick Dümmler	Dr. Patrick Dümmler Beatus Hofrichter
Jointed Parties	ETH Zürich	Helbling	Medical Cluster Helbling Roland Berger	Helbling	Medical Cluster Roland Berger Deloitte, KTI/CTI	Medical Cluster Deloitte Medtech Switzerland FASMED	Medical Cluster Medtech Switzerland IMS Consulting Group KTI/CTI

Renowned industry leaders and subject matter experts supported the SMTI 2012 Report

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Innovation Promotion Agency CTI

Eric Perucco
Managing Director, Biomet
Deutschland

SUBJECT MATTER EXPERTS

Hasan Demir, Eidgenössische Zollverwaltung

Prof. Dr. Pascal Gantenbein, University of Basel

Nils Herold, University of Basel

Moshe Rappoport, IBM Research Zurich

Aleksandar Ruzicic, IMS Consulting Group

René Willhalm, University Hospital of Basel

Dr. Simon Zaby, University of Basel

The publisher, authors and the team of the 2012 SMTI survey

PETER BIEDERMANN

Publisher

- Peter Biedermann is Managing Director of Medical Cluster
- He is author of various publications on the Swiss Medical Device Industry and partner in the SMTI team since 2008
- Prior to joining Medical Cluster he was responsible for various management consulting projects in different industries, including machining, micro-technology and microelectronics
- Peter Biedermann studied Chemistry and Environmental Sciences at the Universities of Applied Sciences in Berne and Basel

Mail: peter.biedermann@medical-cluster.ch
Tel.: +41 76 324 31 15

DR. PATRICK DÜMMLER

Author

- Dr. Patrick Dümmler is Managing Director of Medtech Switzerland
- He has published over 70 articles and books, including numerous reports about the medical devices industry, and co-authored the SMTI survey since 2006
- He has 5 years consulting experience, mainly in the life science industries
- Dr. Patrick Dümmler studied Economics at the University of Zürich and completed his PhD at the ETH. His PhD thesis was entitled "Knowledge-based clusters in Switzerland: Reality or fiction? The example of the Medical Devices Industry" (2005)

Mail: patrick.duemmler@medtech-switzerland.com
Tel.: +41 76 532 53 16

BEATUS HOFRICHTER

Author

- Beatus Hofrichter is Engagement Manager and Head of Medtech at IMS Consulting Group in Basel, Switzerland
- He has published various articles on the medtech sector and is co-author of the SMTI survey since 2006
- He has more than 12 years of consulting experience in the medical devices and pharmaceutical industries, focusing on strategy, business modelling, transformation and operational excellence
- He holds an MBA in Management and International Business

Mail: bhofrichter@imscg.com
Tel.: +41 79 516 80 99

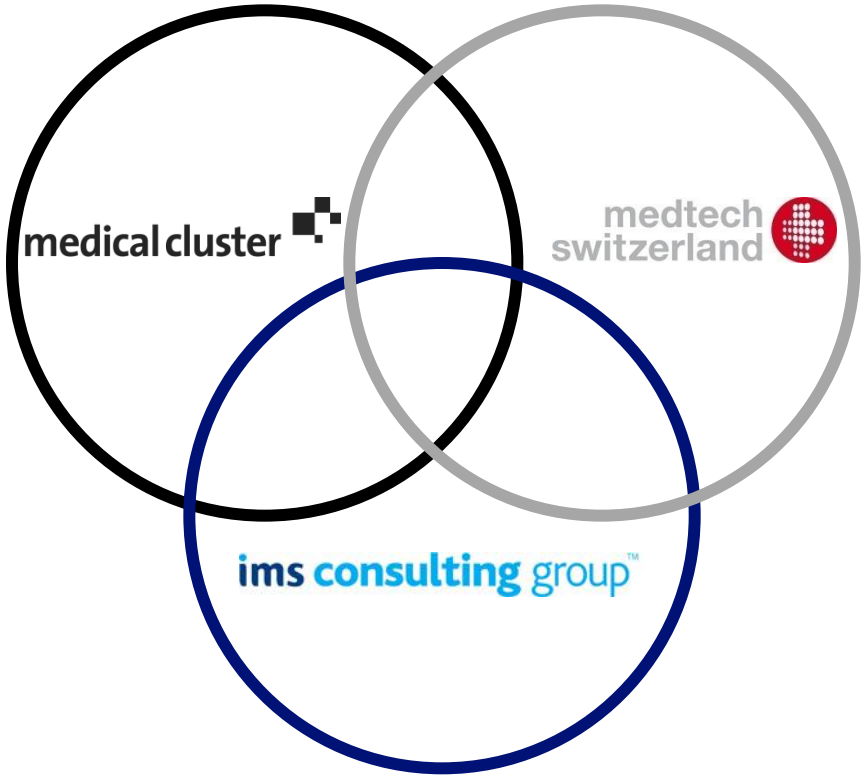
NOEMI SCHRAMM, Medical Cluster

Noemi completed her BA in Economics UZH and was assisting with the SMTI 2011 while on internship at Deloitte. Previously, she was working in various industries, as well as being politically active in local and international positions. She will pursue her studies at the University of Nottingham.

PATRICK HAUEIS, IMS Consulting Group

Prior to joining IMS Consulting Group, Patrick conducted post-graduate research at Harvard Medical School and at the University Hospital Zurich. He is author of several publications in international medical journals. He holds both a Bachelor's and Master's degree in life sciences from ETH Zurich.

A collaboration between three groups made the 2012 SMTI possible



SHARING TOP EXPERTISE

About Medical Cluster

Medical Cluster brings together manufacturers, suppliers, service providers and research and development companies from all over Switzerland. With platforms and assistance we contribute that medical technology in Switzerland continues to enjoy the optimal conditions for growth. Medical Cluster main focus is on supporting innovation, knowledge exchange and helping companies getting into new business opportunities.

About Medtech Switzerland

Medtech Switzerland is the non-profit export platform for the medical technology industry in Switzerland, initiated by the Swiss Federal Government and incorporated by Osec and the Medical Cluster in 2010 to promote the export of medical technologies to key world markets. The mission of Medtech Switzerland is to serve the industry, especially Swiss SMEs, by facilitating export activities to new and existing foreign markets.

About IMS Consulting Group

IMS Consulting Group is the world's leading specialized advisor on critical strategic and commercial issues in life sciences. With a deep industry focus, evidence-based insights, analytical drive and a presence across five continents, we partner with leading pharmaceutical, biotech and other life sciences clients to help optimize decision making and maximize future value.

Glossary and abbreviations

APAC	Asia and Pacific Countries	ITC	Information and Communications Technology
bn	Billion	k	Thousand
BRIC	Brazil, Russia, India, China	KOL	Key Opinion Leader
CAGR	Compound Annual Growth Rate	LatAm	Latin America
CE	Conformité Européenne, standardized guidelines	LS	Life Sciences
CH	Switzerland	m	Million
CTI/KTI	Innovation Promotion Agency CTI	m.a.p.	multiple answers possible
DRG	Diagnosis Related Group	n	Sample size
E	Expected	n.a.	not available
EMEA	Europe, Middle East and Africa	no.	Number
EMPA	Swiss Federal Laboratories for Materials Testing and Research	Natural hedging	Reducing risk using currency advantages through local production
ETH/EPF	Swiss Federal Institute of Technology	OECD	Organization for Economic Cooperation and Development
EUCOMED	European Medical Technology Industry Association	OEM	Original equiment manufacturer
F	Forecast	Osec	Osec Business Network Switzerland; an association under private law supporting Swiss foreign trade
FOREX	Foreign Exchange rate	p.a.	per annum, per year
FTE	Full-time equivalent	PSI	Paul Scherrer Institut
GDP	Gross Domestic Product	R&D	Research & Development
GPO	Group purchasing organization	SME	Small- and Middle-sized Enterprise
HC	Healthcare	SMTI	Swiss Medical Technology Industry
HEOR	Health Economics and Outcomes Research	SNB	Swiss National Bank
HTA	Health Technology Assessment	VC	Venture Capital
HQ	Headquarter	WTT	Knowledge-and technology transfer
INSEAD	Institut Européen d'Administration des Affaires, business school	WZW	Effectiveness, appropriateness and cost-effectiveness

Disclaimer

This report was written in the summer of 2012 involving 321 companies in the field of medical technology in Switzerland. It makes use of the database of the Medical Cluster, Advisory Board input, additional expert interviews and desk research. The statistical data presented reflects the opinion of the participating companies at the time of the data gathering (March to May 2012) and may therefore not reflect the current market environment at the time of reading.

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medical cluster

Authors of the SMTI 2012

Dr. Patrick Dümmler

medtech switzerland

Beatus Hofrichter

ims consulting group

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Eidgenössisches Volkswirtschaftsdepartement EVD
Bundesamt für Berufsbildung und Technologie BBT