

# DRIVERS OF GROWTH

IN THE EUROPEAN MACHINE TOOL INDUSTRY



Supply chain relations

Innovation

Globalisation

Sustainability

Marketing

Skills



*Where manufacturing begins*

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CECIMO, February 2013, Brussels

**Dear readers,**

**As the global economy was climbing out of the doldrums over the last two years, the exports of CECIMO countries, driven mainly by the Asian demand, have reached €16.5 billion in 2011, surpassing the all-time high export record of 2008. European consumption has, however, been excluded from the recovery and today, it remains far below pre-crisis levels. Therefore, we have witnessed an accelerated shift of machine tool markets from Europe towards industrializing regions outside Europe. The EU machine tool industry has to tap into high-growth markets outside Europe to compensate the loss in domestic consumption and to sustain growth.**

Despite strong growth in 2011, the European output has not yet reached the pre-crisis levels. To maintain its technological leadership in the world, the European machine tool industry needs to increase sales and profitability to generate high revenues, which can be re-invested in innovation. Nevertheless, market conditions have drastically changed after the 2008 crisis, and manufacturers have to adjust their business strategies to live up to the challenges in this new era. Over the last two years, the sector faced a range of challenges including weak domestic demand, especially in some southern European countries, global economic unrest, rising commodity prices and natural disasters (such as the tsunami disaster in Japan and the flood in Thailand) that have caused disruptions in global manufacturing supply chains.

However, the economic slump has also provided European machine tool manufacturers with an opportunity to make a critical assessment of their business. Against the backdrop of weakening orders, European companies had to adjust their workforce, sales and investment efforts. They also improved their cost management and supply sourcing strategies to cope with soaring commodity prices. Manufacturers investing in R&D and innovation witnessed productivity rises and they have prepared themselves to explore the new avenues of growth provided by the shift towards intelligent and sustainable production. Marketing has become an important tool to penetrate emerging markets. Some European companies have reaped the fruits of these efforts: as the black clouds over the world economy have dispersed, they found a fertile ground to achieve high performances and increase profitability.

Today the world consumption of machine tools, driven by the rising needs of developing regions, continues to rise. European machine tool builders are ready to jump at the new growth opportunities in international markets. Nevertheless, they are also aware that they need to take into account, in their business strategies, an ever greater number of global risks. At the Fall 2012 CECIMO General Assembly (23- 24 November 2012, Izmir), Europe's leading machine tool builders and the general managers of the member national associations discussed the business practices which drive sustainable growth in the machine tool industry. They also exchanged views on the new risks and opportunities arising in the post-recession era.

This report provides a summary of the debates which focused on strategic topics including, among others, globalisation, marketing, procurement, innovation and exports. We hope that best business practices and experts' views included in this booklet will be a useful guide for European machine tool builders in their endeavors to expand their business and consolidate their competitiveness on international markets.

Martin Kapp,  
President of CECIMO



# Supply chain relations



source: Schaeffler AG

**Many European machine tool (MT) builders outsource part of their production to third parties, much more than they did a decade ago, which allows them to take advantage of low-cost and high quality suppliers in different regions of the world. However, as costs in those regions continue to increase and MT manufacturers cannot search eternally for suppliers providing ever lower costs, they need to think of other solutions to ensure the cost-effectiveness of their outsourcing activities.**

Today, manufacturing leaders place a greater focus on building close and long-term relations with suppliers, with a partnership approach. This type of long-term collaborative working arrangements with suppliers allow MT builders to ensure quality, cost-effectiveness, on-time delivery and the future stability of their business. Moreover, MT builders try to diversify their suppliers to increase their flexibility and resilience to cope with economic fluctuations and down cycles.

The main challenge for manufacturers is managing value networks that are increasingly affected by global forces, international competition, increasing complexity and risks that may develop out of their control. Therefore, manufacturing leaders must be able to understand the current supply chain challenges and design global value networks that have a high level of resilience, operate efficiently, and help them deliver high value to customers.

Among CECIMO companies which sat at the General Assembly, as high as 90% of them already have a strategic partnership with their suppliers or are planning develop it during the next years. Below are views of executives from Europe's top machine tool builders on how to effectively build relationships with the supply chain and turn it into business growth.

## **Support business growth through intelligent outsourcing**

Concentrating on core and high value added activities can open up opportunities for companies to create business growth. Previously, technical and management staffs in machine tool companies were

convinced that they needed to do everything by themselves to ensure the high accuracy of their products. Today, MT builders focus on doing things which, they believe, they can do better than others including research and development, technology integration, customer relationships and services, project management, assembly and putting into operations of machines, as well as quality management.

In the market, there is a vast availability of suppliers which can make certain parts and components as well as complete tested modules in high quality. These suppliers, taking advantage of volume and low labour costs in certain regions, can achieve prices which are much cheaper than some MT manufacturers could have ever done. However, achieving low costs should not be the ultimate objective for MT builders when outsourcing. They need to have a more strategic approach to their relationships with suppliers, concentrating on the development of mutual trust and long-term commitment.

MT companies also source some services from external suppliers (e.g. piping, wiring). They work with companies which can disassemble and re-assemble machines on their own site and on the customer site. Working with suppliers and service providers allows companies to optimize cash flow as well as improve their flexibility, and easily steer their company out of economic downturns. There are signals that MT companies are getting increasingly inclined to also integrate tool makers in their value chain.

Outsourcing can open up many opportunities of growth if it is done in a smart way. Before MT companies decide to outsource the production of certain mechanical parts and components, they need to make sure that they have the management capacity, the necessary knowledge and time to handle this process. Moreover, they need to be able to identify the right supplier, cope with the information flow and protect their core know-how.

## **Select your supplier carefully**

The success of machine tool builders depends on the careful selection of supplier to ensure quality and on-time delivery of orders. In the selection process, several factors come into consideration: the availability of the supplier, its quality, the financial health of the suppliers, its delivery time and the terms of the contract. It is essential to know the structure of the supplier and its financial situation to make sure that the MT builder will be able to work for a long time with that supplier. »

*"Nowadays we concentrate on the things we know we can do better than others. Whilst we outsource the production of some parts and certain services to third parties, we concentrate mainly on research & development and new technology integration, which is the main source of revenue for our company."*

Dipl.-Ing. Dr. Roland Feichtl, Chairman of the Board of Management, KRAUSECO Werkzeugmaschinen GmbH



Another important factor to take into account is whether the cooperation between the MT builder and the supplier can be mutually stimulating and beneficial. Firstly, the size of the supplier should allow it to meet the requirements and volume of the orders. SMEs prefer working with small-sized suppliers, for instance. Secondly, MT builder's orders should be interesting to make for the supplier so that the cooperation leads to good results. Thirdly, a good match between the MT builder and the supplier also implies that the supplier does not become too dependent on the former in economic or technological terms.

### Develop long-term trustful relationships with suppliers

MT builders regard henceforth their relationship with suppliers beyond an ordinary seller-customer relationship. MT builders start seeing suppliers as a genuine partner who should be fully integrated in their value chain. Therefore, they invest in long-term relationships with their vendors. In building such relationships, trust and understanding each other's businesses is crucial. Long-term contracts with suppliers help achieve better prices and on-time delivery, it eliminates exposure to risks and guarantees the security of supply, which is a source of stability for the MT business.

In their relationship with suppliers, machine tool builders look for cost efficiency, which is different than low costs. By adopting principles of open-book accounting, MT builders can develop a transparent process with supply chain members, which allows them all to work closely and openly in a relationship of mutual benefit. This approach is based on collaborative working arrangements, that aim at improving efficiency in the project delivery process. The advantage is this can generate cost savings and improved value for money.

Open dialogue and early cooperation are important factors in underpinning a healthy long-term relationship, and they complement transparency. MT builders should not hesitate to ask partners

*"As a small-size company, we search for suppliers which are relevant to us. We work on setting up long term contracts with key suppliers. The advantage is that it helps achieve higher quality, lower costs and secure on-time delivery. Moreover, by pooling our orders with those suppliers, we manage to reduce administrative handling costs."*

Mr. Robert Nefkens, Managing Director, HEMBRUG B.V.



what needs to be changed in their definition and input, so that the supplier can better fulfil the requirements and targets set by the MT company. Open and transparent cooperation can also allow the MT company to integrate its suppliers at the very early stage of the R&D process, enabling them to deliver results which best meet the customer's requirements.

Partnering with suppliers is important. Nevertheless, the existence of competition in the upstream supply chain is equally important, so that the MT industry benefits from superior quality and competitive price offerings.

### Increase efficiency through good planning and standardisation

Europe's leading MT builders state that developing long-term relationships with suppliers helps the latter better understand their needs. MT builders, by signing long term contracts with suppliers, can pre-inform their suppliers about the number of and specifications of parts and components they intend to buy over the next few years. The advantage is that the supplier can prepare itself to send the parts when they are needed by the MT manufacturer, which has a positive impact on quality, costs and delivery time.

Planning allows not only to optimize the outsourcing process, it also enables parties to understand each other's expectations and avoid any problem that might occur at later stages. Standardisation

is key to manage planning of the outsourcing processes. It allows the manufacturer to foresee the different steps of the process and plan its activities. Moreover, it allows the machine tool builder to foresee costs, compare the performance of suppliers between each other and diversify its supply channels geographically to choose the best performing and the most cost-effective suppliers.

Over 80% of European machine tool builders are small or medium size companies and they place relatively small volume orders with their suppliers. SMEs prefer pooling their orders for parts and request them as a complete bill of materials. Working with fewer suppliers helps them reduce logistics and administrative handling costs. Moreover, pooling orders provides manufacturers with a better bargaining position whilst negotiating the conditions for the contract.

Modern project management systems offer the possibility for MT builders to effectively manage the outsourcing process and to integrate their supply chain in project management tools. These IT-supported tools can help ensure strict on-time delivery, better stock management and cash flow. Digital invoicing also enables manufacturers to check the invoice against the price, quality as well as early delivery. Reduced paperwork saves money and time through reduced administrative efforts.

### Educate the suppliers

Selecting a vendor and signing a contract does not guarantee successful results. This is only one part of the story. It is extremely important to

support and educate suppliers so that they can profit from the MT builder's skills and expertise and optimize the delivery of results.

The MT builder should have some initial know-how before opting for outsourcing. If it wants to outsource the production of some mechanical part for example, it should be able to provide substantial input to the vendor, generally in the form of technology know-how. There may be a need to optimize, together with the vendor, the production of specific parts.

Close relations also help suppliers understand the needs of the machine tool company and its clients. Such insights into the business of the MT builder can enable the supplier to deliver results that contribute to the client's satisfaction. The impact will be positive on the growth of both the machine tool builder and its suppliers.

### Eliminate risk factors

There are some risks involved when dealing with suppliers. MT companies need to ensure that their core know-how does not leak into their supply chain and to competitors through patents, but also by guaranteeing the protection of their intellectual property rights in contracts signed with suppliers

Also, when considering outsourcing 100% of the production of a specific category or group of products, the MT builder need to be aware that this may lead to the loss of strategic know-how and production capacity, which could be lacking in its production facility in the future. ■

### HIGHLIGHTS

- Manufacturers increasingly focus on 'intellectual property-sensitive' and high value added production operations whereas they outsource the rest;
- Due to international competition and the rising prices of commodities, parts and components, machine tool builders place a greater focus on procurement strategies;
- Taking a new look at relations with suppliers can provide manufacturers with an opportunity to achieve cost-efficiency, higher levels of quality and productivity;
- When outsourcing, having a strong management capacity, selecting reliable suppliers and developing a long-term partnership with those latter are key to success.

# Globalisation and exporting



**The record level of CECIMO exports in 2012 once again stresses the importance of global markets for business growth in the European machine tool (MT) sector. The shift of machine tool markets from Europe to Asia became more significant during and in the aftermath of the economic crisis. Whilst the EU's sovereign debt crisis further depressed European markets and delayed recovery, consumption in industrializing Asian countries has been on an upwards growth path over the last few years. International exports will be the major source of growth for the sector in the coming years. Manufacturers are forced to look beyond their traditional markets in Europe in order to find new business opportunities.**

Forecasts provided by Oxford Economics to CECIMO show that despite growth in actual consumption, Europe's current 20% share in world consumption will shrink to 15% in the next five years whereas Asia's share will further increase from 67% to 72%. The world machine tool market will continue to expand in the next years, providing new business opportunities for the European suppliers of advanced production machinery. Approximately, ninety per cent of CECIMO's companies represented at the CECIMO General Assembly reckon that international markets will be more important than their domestic markets in the next three years.

Machine tool companies need to increase their presence in Asia and the BRIC countries (Brazil, Russia, India, China) to reap the benefits of these regions' high-growth potential. This is not an easy task. Firstly, company executives need to gather intelligence and information to familiarize themselves with business, regulatory, financial and legal challenges in these new markets. Then, MT builders need to strengthen their management capacity accordingly: streamline their financial structure, hire people habituated to deal with global market challenges, set up pre- and after-sales services and train and expand their sales corps. Finally, they need to develop good contacts

with distributors and customers in these countries, and adapt their production/products to local requirements.

Opening up to new markets, or in other words 'internationalisation', requires a well-thought strategy and careful planning to guide the company in preparing its management, finances, organisation and production. Europe's leading manufacturers of machine tools advise companies to take into account the following three key factors whilst developing their market entry strategy.

## **Get informed about target markets**

The first important step to internationalization is to acquire the necessary knowledge. Exporting manufacturers have to familiarize themselves with the culture, habits and language of their new target market. Market studies, reports and statistics provided by CECIMO and member national associations are a good source of information, but it is also important to have direct contacts with the country's stakeholders, such as trade associations, research institutions and agents.

For a successful expansion to new markets, manufacturers need to understand their economy, the machine tool demand, as well as regulatory, legal, administrative and banking system. It is essential to acquire a sound knowledge of the way sales and distribution are organized. European companies which have experience in non-European markets notice big differences in the local way of doing business from one country to another. In some countries, it may be easy to do business through agents whereas, to be successful in others, the manufacturer may need to integrate the culture of that country in its own company culture. Some companies try to achieve this integration by having their people who work in the field in target countries share their experience with the rest of the staff. Other companies hire local people/agents and host them in their European premises to enable the exchange of knowledge with the staff based in the headquarters.

Therefore, manufacturers value having a very good local contact (agent/dealer) to help them understand the country as well as the functioning of its customer markets. If going through the wrong channel, the manufacturer may not be able to sell a single product, even at the most competitive prices and delivering excellent technical work. ▶



*"In my company we work mainly with niche markets. Therefore, we focus on innovation and technology development to match customer needs. We aim at building a partnership with a number of selected customers in each country. Based on our communication with these customers, which are industry leaders in their country, we are able to tailor our products and services for the local market."*

*Mr. Luigi Galdabini, CESARE GALDABINI S.p.A. (exports and globalization)*

### Develop partnerships with selected customers

European companies mostly being manufacturers of niche products, they need to capitalize on their strong selling point: the ability to supply application capability and capacity to the customer. Therefore, manufacturers need to be in close proximity with their customer to understand their specific problems, in order for the machines to offer solutions tailored to their needs and the local market's specificities. Direct talks with agents and distributors, namely the people who go on site, can also help the machine tool builders gain insight on the customers' needs.

As suppliers of niche products, European MT builders are mainly focused on innovation and technology development, which is a key strength enabling them to match specific customer needs. In some cases, MT companies develop partnerships with selected customers, they focus on their needs and develop tailored machines and services for a few customers identified in each country. MT companies aim at sector leaders, which are few in number and large in size, so that through dialogue they gain important insight into the target market.

#### GOING GLOBAL

Below is a list of tips from Europe's leading machine tool manufacturers for companies who want to go international:

- Be present at international trade shows such as EMO to meet customers from emerging markets;
- Concentrate on a specific geographical region or on a specific area where you have high growth potential, especially in big markets;
- Acquire sound knowledge of the market you approach: language, culture, economy, machine tool demand, business risks, financial and banking systems, regulatory environment, administration;
- Understand the functioning of the market, especially distribution and sales networks. There are significant differences between countries;
- Learn how to network globally;
- Working internationally is different than working locally. If you are an SME, invest in building management, sales, marketing and services capacity;
- Establish close contacts and partnerships with customers to learn local market needs;
- Adapt the products to the needs of the new markets. Establish a strong service organisation (pre- and after-sales services);
- Prepare people within your organisation for the export activity. Invest in training your workforce before you launch out in a new market;
- Use communication and promotion activities to increase your visibility. Shift from paper-based to web-based promotional material;
- When in new markets, understand what are your strengths to make the most out of them;
- Monitor activities of your competitors and benchmark the results that they obtain.

### Train marketing and sales forces to better serve local needs

MT companies need to streamline their management capacity and organisation to cope with the challenges presented by new markets. One very important aspect of the process is to prepare the workforce to go international. Workers need to gain knowledge in certain areas (e.g. structure of the new market, local business culture, financial system, etc.) and develop certain skills (e.g. languages, marketing, communication, networking). Companies should offer special training to sales and marketing managers to prepare them for the internationalisation challenge. Because marketing is a key activity helping companies to penetrate new markets, sales forces should be very well informed and trained to effectively represent the products of the company in the new market.

People can provide important information to the company about the local markets and customers. Here again, some MT companies bring local people who work for them in the target market, or people from their agents, in the company's headquarters in Europe. Having spent some time in the company, these people get accustomed to the company's culture and philosophy whilst they transfer their knowledge and experience to the company staff. These people will mainly be involved in services and sales activity when they get back in the field. Some European companies also employ engineers from Asia to work in their European plants for the whole duration of a project. Companies report that employing people from new markets help them to better adjust their products to customers. ■



# Innovation and product development



**The European MT industry is dominated by SMEs which operate in a wide range of technological areas and are world competitive in their field. Innovation, both at product level and organisation level, is key to keeping them competitive and helps them adapt to fast-changing market conditions. Amidst global competition, customers are getting keener on manufacturing higher precision and higher quality parts and components in a more productive manner. There are many growth opportunities for European machine tools companies in the new product and service development area as long as they can differentiate themselves from competitors.**

An on-the-spot inquiry during the General Assembly in Izmir showed that almost two-thirds of CECIMO delegates plan to spend a higher share of their budget to R&D and innovation in 2013 compared to the previous year. Continued R&D investments, even in the times of economic uncertainty, highlight the importance of technical excellence for the competitiveness of the industry. Nevertheless, MT companies need to innovate in their organization itself as much they need to offer innovative products and services. An ongoing paradigm shift in the innovation strategy of MT companies, that requires manufacturers not to focus solely on technical improvements of the machine, but also on generating fit-for-purpose solutions for complex problems customers are facing across their value chain.

The MT industry can capitalize on this type of innovation to create customer value across the supply chain, which would allow European companies to differentiate from competitors and foster business growth. The following observations from Europe's leading MT builders highlight the factors the sector should take into account in their efforts to wed innovation with business value.

## **Focus on market pull rather than technology push**

Innovation in the MT sector is characterized by technology push with a strong focus on products. This view is shared by important customer sectors such as automotive. MT companies should, therefore, strive to shift from being product centered to product-and-service centered. Besides, they should try to stimulate market pull rather than focusing on technology push in their innovation strategies.

This implies that MT companies should not focus on short term R&D but on having a long term perspective of the market. In order to enable market pull, MT companies need intelligence, they need to understand the market trends. MT builders should constantly ask themselves how to better know the customers' needs. They need to remain in close connection with customers: they can survey customers' processes, operations and process expertise, and use market research. Moreover, frequent interaction with their customers' R&D departments can also bring to light emerging customer needs and, thus, new avenues of innovation.

## **Focus on the whole customer value chain**

European SMEs tend to only look at a very small portion of their customers' value chain, which may limit their innovation potential. MT builders should have a holistic view of the customer value chain. This requires them to observe and understand their customers' business model as well as their relations with their suppliers and customers.

This approach can allow MT companies to identify opportunities and provide additional customer value, for which the customer would be ready to pay. It also represents an important opportunity for a MT manufacturer to differentiate itself from competitors, especially in new markets, and to become a global company.

## **Devise organizational change to create customer value**

Organizational change inside a MT company should be an integral part of the innovation process. Innovation is not generated from R&D departments and their staff only. If innovation is left to the sole responsibility of R&D departments, this is likely to result in technology push rather than market pull. ➔

*"Machine tool builders should have a holistic view of the customer value chain to explore new dimensions of innovation. Innovation activities should lead to tangible, measurable customer value."*

*Tomas HEDENBORG, Executive Chairman, FASTEMS OY AB*



Before pushing organizational change, MT companies should look into and understand the organizational and business model of their customers. Then, the MT builder can try to identify avenues to create customer value. These innovation paths should guide the management in implementing the necessary organizational changes.

Human capital is a key factor supporting organizational, process and business services innovation in manufacturing businesses. Companies should train their workforce as to align their skills to the needs arising from organizational innovation. Moreover, integrating life-long learning into the company's philosophy can foster a strong innovation culture across company departments, which nourishes the innovation process.

### Explore new dimensions of innovation

Machine tool builders should explore different dimensions of innovation. Cooperation with research and technology organizations and universities can be very helpful in that process. A non-exhaustive list of different dimensions of innovation include:

- **Processes:** improvements of your own process and operation, as well as the processes of your customer base;
- **Business model innovation:** with a focus on life-cycle services;
- **Management systems:** management of your operations and international networks; integration of your partners in the supply chain and improvement of distribution channels;
- **Strategic cooperation:** finding like-minded partners can enable SMEs to complement each other's knowledge. They can harness this knowledge to provide customers with comprehensive added-value solutions.
- **Human resources:** when going international, human resources (HR) management and skills needs are crucial. Innovation can help achieving the company's HR goals because highly skilled workers

are potentially attracted by a business showing a great innovation capacity.

- **Extended services:** industrial services portfolios that go beyond spare part services and service techs;
- And also software solutions, Green Factory and Capex/NWC (networking capital) optimization.

### Shift towards "output and commercial success oriented" innovation

Innovation in the machine tool industry needs to be clearly defined. Innovation should not refer solely to R&D and to engineering issues. It should include a component of commercial potential but, more importantly, a component of commercial success. Whilst defining innovation, the MT industry should shift its focus from an input-oriented definition of innovation towards an output-oriented one. According to this, innovation is not about the amount of money spent on the R&D but on what the company gets out of it.

It is not easy to measure the output of innovation, but there might be a way to measure it in euros. Companies will most likely start looking at revenue/profit streams originating from their R&D activities, in an attempt to measure their output in the future. Innovation should be about generating tangible, measurable customer value, and also about making the innovation capability of the company measurable. If the company can show data and fact-based value to the customer, the customer will be easily convinced of the competitive advantage this company will provide him. ■

#### HIGHLIGHTS

- MT companies should prefer a market pull approach rather than a technology push centered one. They need to work on stimulating the customer demand for the market uptake of new technologies;
- Machine tool builders are overly focused on actual machines. They should look at the customers' value chain as a whole and explore new areas with innovation potential;
- The sector needs to consider new dimensions of innovation, beyond R&D, including innovation in organization and business services;
- Companies should strive to make their innovation output tangible and measurable for the customer.



Source: VDW / Deutsche Messe

# Sustainability and energy efficiency



**Today, in the MT industry, sustainability is associated mainly with the energy-efficiency of machine tools. Indeed, according to the investigations of the CECIMO Environmental Efficiency Expert Group for the Ecodesign Directive, the biggest environmental impact of machine tools occurs during the use phase and is related to electricity consumption. Nevertheless, the philosophy of ecodesign overall implies the limitation of the impact of machines on resource consumption and environment throughout their life-cycle. Led by large customers, the demand for eco-efficient machinery is slowly picking up. Early birds will be able to capitalize on the first-mover advantage.**

Energy prices in EU Member States are much higher than in competing countries such as the US, and these prices largely diverge across Member States. It is forecasted that energy prices for both domestic and industrial users may increase of as much as 100% over the next 20-30 years if the EU is to meet its renewable energy and greenhouse gas emissions targets. The shift from fossil fuels and nuclear to renewable energy, which is an integral part of efforts for ensuring the security of supply, is expected to expose the European industry to increasing electricity bills.

The security of energy supply is a pre-requisite for the industry to maintain its competitiveness. Therefore, it needs to go through a paradigm change to adapt to new conditions. Industrialists need to figure out a strategy to realize the shift from "maximum profit from minimum capital" to "maximum profit from minimum resources". For the moment, the MT industry is focused on energy efficiency at the process and machine levels, but there is a need to have a wider look at energy and resource efficiency in this respect.

## Sustainability requires early investment

Sustainability will become a prominent factor in the value chain of metalworking industries in the mid- or long-term. Nevertheless, transition to sustainable production patterns will not happen in the future, it is happening now! The foundations of tomorrow's sustainable manufacturing landscape are being laid down today and early birds will grasp the biggest opportunities. MT builders need to invest from today in energy-efficient solutions through research and development.

For instance, the automotive industry, the largest customer of the MT industry, is heavily involved in environmental management. Recently, customers in the car industry have come to break down their organizational and operational structures to the level of machine tools. Such analysis is carried out in order to identify areas with a potential for improving their overall environmental performance. As the automotive industry is a pioneering actor of the manufacturing industry, it is likely that other customer sectors of the MT industry will follow their example.

Moreover, the paradigm shift to sustainable thinking requires the sector to go through a wider organizational transformation, which is even longer to achieve. Environmental efficiency principles should also be integrated to the corporate culture and business model of machine tools companies. Today, many public funds are made available to the industry to help make the shift to a low-carbon economy happen in a cost-effective manner.

MT companies should also contribute to standardization efforts. Standards will play a crucial role in enabling the market uptake of energy efficient machinery. Standards lend credibility to manufacturers which produce energy-efficient products and prove energy performance to customers. European manufacturers should be ready to commit themselves to participating in efforts for setting energy-efficiency standards at national and international standardization organizations.

## Integrate sustainability into your business model

In manufacturing plants, energy-efficiency is addressed at three levels: the factory level, the level of manufacturing process chain, and the level of processes and machines. Currently, the sustainability ▶▶

*"In Europe our electricity bills are much higher than in some of competitor countries. Energy prices are likely to rise further as Europe abandons fossil fuels and nuclear energy for renewables. As industrialists we have the knowledge and the tools to rise to this challenge. We need to create a paradigm shift from 'maximum profit from minimum capital' to 'maximum profit from minimum resources'."*

Dr. Frank Brinken, CEO, STARRAGHECKERT AG



efforts of machine tools builders are limited to the third level. Nevertheless, a wider look at energy efficiency is required.

The MT industry, by adopting a broader approach to energy- and resource-efficiency, can create real customer value. For instance, prices of machines are already known in the market but, by quantifying life-cycle costs and integrating it to their business model, MT companies can help customer to improve their overall energy and resource management. This would allow the manufacturer to charge a premium price for their products.

Furthermore, an important part of energy consumption depends on the way the customer uses the machine tool. By designing services which help the customer optimize energy use, MT builders can multiply the value they create for the customer. Therefore, the optimal way to exploit the commercial potential of energy efficiency is to make a package offering including both sustainable products and related services. The marketing strategy should be adjusted accordingly.

Communication campaigns will also play an important role in promoting energy-efficient solutions to the customer base. By joining forces in collective campaigns and initiatives, MT businesses can devise communication actions to have the desired impact on the perception of energy-efficient solutions and machinery along the value chain.

### **Educate customers to create market pull**

Although energy-efficiency is a new paradigm for the MT industry, many solutions are already available on the market, offered by companies which want to take the lead in the sustainability race. Technology push needs to be matched with market demand in order to turn sustainability efforts into cash. According to CECIMO delegates, the

majority of customers do not pay particular attention to the ecological performance of the machine while making purchasing decisions. It is therefore fair to state that there is still no sufficient market demand for energy-efficient machines that imply a higher final price for the customer; energy-efficiency is not a determinant factor in the purchasing decisions of customers.

However, the change is on track. Rising energy prices and the increasing sensibility for the environment are stimulating, one by one, customer sectors of the MT industry to review their strategy in regards to energy management. Large manufacturers in the car industry have already started mapping their energy consumption throughout their supply chain, a trend which is likely to trickle down to tier one and tier two suppliers' level. This presents tremendous opportunities for machine tool builders. If customers are to pay an additional price for energy-efficient machinery, they will require MT builders to prove tangible benefits, through the presentation of hard facts and data.

### **Sustainability can improve the corporate image**

The majority of CECIMO delegates thinks that offering sustainable solutions and being environmentally sensitive is an important factor in strengthening the corporate image of machine tools companies in the eyes of policy makers, regulators and the society in general.

In fact, there is a common agreement within the MT industry that current generations are quite sensitive on environmental issues and a sustainable corporate image might be a powerful tool to attract young and talented people into the sector.

The machine tool industry does not fall in the category of "eco-industries". However, it is a key enabler for the enhanced sustainability of everything we consume and we make. The sector should increase its efforts to put this message across to young people and the society in general. ■

#### **HIGHLIGHTS**

- The shift to sustainable manufacturing will not happen overnight but it requires an early investment, as early birds will grasp the biggest opportunities;
- Among large MT customers, such as automotive, sensibility for energy consumption is increasing mainly due to rising electricity bills. Other sectors will follow;
- There is a need to create a market pull to enable the uptake of energy- and resource-efficient machine tools in the market. Customers need to be educated;
- The MT industry should not limit its view of sustainability to energy efficiency. Sustainable thinking should be incorporated in organizational and business models.
- Highlighting the image of the sector as "the enabler of sustainable production and products" will help increase the attractiveness of the industry for young people.



# Marketing



**Traditionally, the capital goods industry has not put a lot of efforts in marketing. At times when the European manufacturing excellence was unbeatable and the Western markets were the largest consumers of machine tools, there was no need to do so. Nevertheless, the shift of consumption to Asia and other regions of the world, coupled with the emergence of strong non-European competitors, require European machine tool builders to review their position.**

At the turn of the 21st century, Europe was consuming half of the global machine tool output. Twelve years later, Europe consumes one fifth of the total world output whereas Asia's share accounts for two-thirds of the global consumption. China alone consumes more than two fifth of the machine tools produced around the world. European businesses need to increase their presence in these new markets to sustain growth and, to do so, learn to cope with different customer needs, cultures and behaviors in different world regions.

The second major change which affects European MT builders is the shift of competition into the global arena and the emergence of large powerful competitors in the East and Southeast Asia. European manufacturing excellence is not unsurpassable anymore and competition in a globalized marketplace is fiercer than ever. Barriers to entry are much lower, thanks to a large number of engineering service providers across the globe which are ready to transfer know-how to new entrepreneurs. Governments in developing countries also show great enthusiasm to support the development of local manufacturers to cater domestic needs.

The challenge for European MT builders is to streamline their business strategy in order to win new markets. Manufacturing excellence is an asset for European companies, but it doesn't tackle all of the sector's challenges. CECIMO delegates agree that the European MT industry should place a greater focus on marketing and related soft

factors to improve their international presence and competitive-ness. This requires reviewing and streamlining design, pricing, sales, branding and promotion strategies in a coordinated way, towards the creation of higher added value for the customers.

The following observations of Europe's leading MT builders can guide companies in their efforts for determining the right "marketing mix" for their business strategy (the marketing mix is also known as the "4 Ps of marketing": products, price, place and promotion).

## **Respond to rising demand for mid-range, cost-effective and easy-to-use products**

As far as products and design are concerned, there is a clear trend towards affordable mid-range products among the global customer base. High demand for products in this range is matched by a high number of suppliers. As competition heats up in emerging markets, it increases pressure on prices. Today, machine tool builders (excluding high-tech markets such as aerospace), not only compete for building the most sophisticated multitasking machine but also for the most cost-effective, reliable and easy-to-use machines.

This is a global trend and European companies need to be in competition on the high-volume mid-range machine markets in order to diversify and multiply their sources of revenue. European MT builders should avoid being confined to the low-volume high-tech market niche. They need to increase their efforts to improve design features and user-interface in order to offer to customers reliable and easy to use high-quality products in the medium-technology range. Design can also help increase the perceived quality which, in turn, can enable manufacturers to sell their products at a premium price.

## **Focus on value-based pricing**

Achieving premium prices is a hard task but it is the only way the European MT industry will survive the global competition, since it can definitely not win the price war. Therefore, especially in price sensitive markets, European companies need to employ a different approach by focusing on value-based pricing. In simple terms, the price of the machine should be set according to the value it generates. European businesses should shift from selling the "overall advantages of the product" to selling the "overall advantages of working with their company". Sales forces do not have enough experience with this approach and they should be trained accordingly. ▶▶

*"In order to ensure that their products stand out in emerging markets, European manufacturers need to focus more than ever on marketing. MT businesses should follow the example of the consumer goods industries, where many successful marketing practices are in use."*

*Michael Hauser, CEO, Tornos S.A.*



### Review your sales strategy in emerging markets

As far as sales strategy is concerned, the changing market conditions and new trends call for a change in the sales and distribution models used in Europe. The traditional European model is based on direct or indirect sales through agents and dealers, which may not respond to market conditions and needs in Asia.

The main challenge for European companies lies in expanding their sales channels in China and assuring decent market coverage in this large market. In the Chinese market, European manufacturers need to cope with a variety of enterprises (state-owned, foreign-owned, privately-owned) which supply a wide range of products, from a few thousand euros worth low-tech machines to a million euros worth high-end machines.

European companies need to ask themselves whether they have the right engineering and the right sales approach to handle such a wide variety of products, especially the mid-range products. It is almost impossible to offer such a product range through a single sales channel. Large Chinese companies supply a huge sales-force that small and mid-sized European companies could never afford.

### Explore the new promotion tools and channels. Invest in branding.

When it comes to promotion, international trade shows such as EMO are the most powerful tools for companies who want to better reach customers in new markets. Nevertheless, businesses absolutely need to be up-to-date in their choice and use of promotion tools, and integrate them in their marketing strategy.

CECIMO delegates agree that traditional promotion instruments, such as trade shows or open houses, might not be sufficient to cater

new market needs, or they may turn out to be too expensive in the future. European MT builders should pay more attention to new electronic and online media because they offer effective but also faster and cheaper ways to reach customers. The younger generations will certainly be reached better, they already receive most of the information they need through these channels, in a fast and transparent way.

Another aspect of promotion, branding, should receive particular attention. MT builders should increase the efforts made to streamline their corporate design and identity, and to build high perceived value and quality. The marketing strategy should not be limited to the product but it should also cover services, showing the value that the company, not only the product, can create for customers.

Communicating success stories to customers can help show the clear benefits of working with a company. The MT industry should look into best practices in the consumer goods industries, they have a much broader experience in marketing, and imitate these practices.

### It is a matter of resource allocation

The bottom line is that to tackle the current and future challenges, companies need to ensure the right allocation of resources, financial and other. Moreover, a mindset shift in the sector is a necessity. MT builders should realize that engineering-driven companies do not stand strong in the globalized marketplace, characterized by fierce competition. MT builders need to invest more time and resources in marketing, to strengthen their brand image, signal to the customer base their value offering, and ultimately achieve premium prices. ■

#### HIGHLIGHTS

- The machine tool industry is engineering driven and machine tool builders allocate little resources for marketing. However, new market conditions require change.
- There is less and less technical differentiation between European and non-European MT builders. New ways to create customer value need to be found.
- Companies need to redefine their marketing strategies to cope with divergent customer needs, behaviors and cultures in emerging markets.
- European manufacturers should focus on soft factors such as design, branding and corporate identity, as well as on the improvement of distribution channels.





**Demographic changes in Europe, coupled with a lack of interest among young people for engineering, expose the manufacturing industry to a shortage of skilled labour. Moreover, globalisation and technical change have a great influence on the skills required to accomplish daily tasks both on the factory floor and at management level. A skilled workforce is the key to sustaining growth in the sector and ensuring the ability of European manufacturers to compete in global markets.**

Companies can play an important role in closing the skills gap in the MT industry. Firstly, they need to increase their efforts to make the sector more attractive to young people. Secondly, companies of all sizes can develop strategies and formal programmes to attract, train and retain a skilled labor force, to ensure their production levels can be maintained and grown in the future. The industry should also use every opportunity to boost cooperation with governments and universities, because they are essential partners to seriously address this complex set of problems.

Europe's leading machine tool builders recommend that the sector focuses on the following action points to help overcome the skills shortage affecting the MT industry.

### **Help build a better image of mechanical engineering**

There is a general agreement among industrialists that the image of

mechanical engineering in general is not good among young Europeans. Manufacturing is seen as an industry in decline, resulting in layoffs, and it is associated with dirty and repetitive tasks. Therefore, the sector needs to work on improving its image.

There are many examples across Europe of companies, generally in partnership with trade associations and universities, who lead communication campaigns in schools to attract the attention of pupils to technical education. These campaigns include MT companies visits for school teachers and students. It is confirmed by the sector that when young people visit production plants, they show curiosity and interest for manufacturing.

The MT industry should analyze the factors that influence young people when making their studies and professional career choices. Young people are increasingly sensitive about environmental issues and they are interested in working in creative industries generating benefits for the society. Showing to young people that the machine tool industry is a key enabling and technology-driven sector which provides solutions to grand societal challenges, such as climate change and resource-efficiency, can help draw their attention.

Career opportunities and the advantages of working in manufacturing should be clearly communicated. Manufacturing can appeal to young generations in many aspects, because of its interface with new technologies, the possibility of life-long skills development, traveling abroad, working in projects with partners from different countries and regions of the world, among others. The industry should use social media and other modern communication channels to inform the young population about the type of work they will do in manufacturing, as well as the economic benefits of manufacturing jobs.

### **Increase cooperation with universities**

Cooperation between companies, trade associations and universities bring positive results, as the academia brings a scientific approach to the efforts for raising skills. Moreover, close communication with university professors and teachers is useful in the sense that they are likely to pass on the information received from industry to their students, contributing to the promotion of engineering. When communicating with universities and schools, it is important to

*"We need to work with universities to make the image of the sector more attractive to young people. At the same time, we need to take good care of the existing human capital in our companies. Companies should develop concrete strategies for the transmission of know-how to new employees and for life-long learning for the existing workforce."*

Yves Valentin, General Manager, FOREST-LINE ALBERT



highlight that the MT industry carries out significant research & development work, just like sectors, more popular among young people, such as electronics or pharmaceutical.

### ***Raise the skills of your workforce through life-long learning***

Most of the young engineering graduates think that they learned everything they need to know in university. However, there is a serious disconnect between university education and manufacturing jobs and companies should have a clear strategy for the transmission of skills and knowledge to the new-comers. Internal training programmes are organized by some companies to prepare the recruits for their new responsibilities. A key strategy to motivate young employees is to provide them with clear objectives for acquiring pre-defined skills.

For example, some companies develop 'report cards' which include a list of skills the employee should acquire. Standard guidelines and benchmarks enable managers to monitor the progress that employees make throughout their training process within the company. Self-evaluation and evaluation by mentors are used to assess individual achievements. MT companies highlight the importance of developing training programmes and roadmaps for the existing workforce to provide them with goals and a direction in their carrier development.

MT industrialists confirm that the first golden rule for acquiring talents is to take good care of the human capital that you have.

The management should earmark sufficient resources to train the workforce. Cherishing the existing skills in the company and investing in upgrading the skills, companies can get a lot from the existing workforce with a marginal investment.

### ***Adopt a recruitment strategy with clearly defined objectives***

The hiring process is also very important since a good human-resources department can help companies employ people with the right skills. To ensure this, MT builders should focus on the real needs of the company and accurately identify the required capabilities.

To attract young and skilled candidates, it is important to understand their expectations towards the job and the company. Therefore, whilst communicating the vacancies, companies should use that knowledge and put care in the way they present themselves: how profitable, sustainable, R&D driven the company is, etc. Early cooperation with universities and educational institutes is also important because they can play a major role in supplying the companies with the skills they need in the future. ■

#### **HIGHLIGHTS**

- The current shortage of skilled labour in the machine tool industry could obstruct the growth of the sector if the problem persists;
- Demographic changes and the students' lack of knowledge about manufacturing are responsible for the labour shortage;
- The future and present manufacturing workforce should be trained to be able to cope with new technological and globalisation challenges;
- Manufacturing businesses should step up and join forces to improve the image of the sector.





## CECIMO Member Associations

**Austria: FMMI**

Fachverband Maschinen & Metallwaren  
Industrie  
[www.fmmi.at](http://www.fmmi.at)

**Belgium: AGORIA**

Federatie van de Technologische Industrie  
[www.agoria.be](http://www.agoria.be)

**Czech Republic: SST**

Svazu Strojirenské Technologie  
[www.sst.cz](http://www.sst.cz)

**Denmark: DAAM**

Danish Association for Advanced  
Manufacturing  
[www.daam.dk](http://www.daam.dk)

**Finland: Federation of Finnish Technology  
Industries**

[www.teknologiateollisuus.fi](http://www.teknologiateollisuus.fi)

**France: SYMOP**

Syndicat des Entreprises de Technologies  
de Production  
[www.symop.com/fr](http://www.symop.com/fr)

**Germany: VDW**

Verein Deutscher  
Werkzeugmaschinenfabriken e.V.  
[www.vdw.de](http://www.vdw.de)

**Italy: UCIMU**

Associazione dei costruttori Italiani di  
macchine utensili robot e automazione  
[www.ucimu.it](http://www.ucimu.it)

**Netherlands: VIMAG**

Federatie Productie Technologie /  
Sectie VIMAG  
[www.vimag.nl](http://www.vimag.nl)

**Portugal: AIMMAP**

Associação dos Industriais Metalúrgicos,  
Metalomecânicos e Afins de Portugal  
[www.aimmap.pt](http://www.aimmap.pt)

**Spain: AFM - Advanced Manufacturing  
Technologies**

Asociación española de fabricantes  
de máquinas-herramienta, accesorios,  
componentes y herramientas  
[www.afm.es](http://www.afm.es)

**Sweden: MTAS**

Machine and Tool Association of  
Sweden  
[www.mtas.se](http://www.mtas.se)

**Switzerland: SWISSMEM**

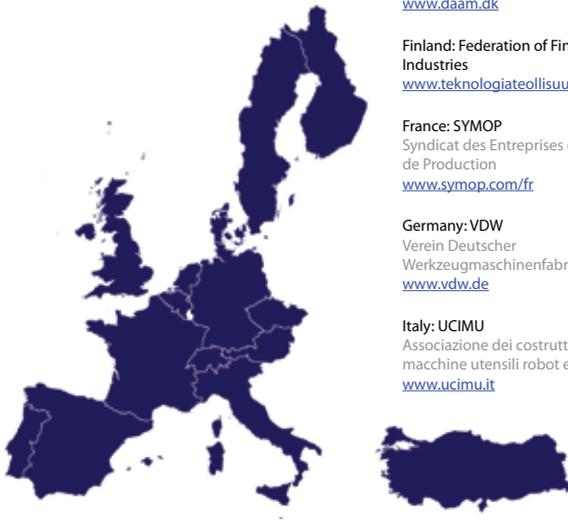
Die Schweizer Maschinen-, Elektro-  
und Metall-Industrie  
[www.swissmem.ch](http://www.swissmem.ch)

**Turkey: MIB**

Makina Imalatçileri Birliği  
[www.mib.org.tr](http://www.mib.org.tr)

**United Kingdom: MTA**

The Manufacturing Technologies  
Association  
[www.mta.org.uk](http://www.mta.org.uk)



**cecimo** is the European Association representing the common interests of the Machine Tool Industries globally and at EU level. We bring together 15 National Associations of machine tool builders, which represent approximately 1500 industrial enterprises in Europe\*, over 80% of which are SMEs. CECIMO covers more than 97% of total machine tool production in Europe and more than one third worldwide. CECIMO assumes a key role in determining the strategic direction of the European machine tool industry and promotes the development of the sector in the fields of economy, technology and science.

\*Europe = EU + EFTA + Turkey