

Professionalization and Scientification of Sales Engineering

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1. Abstract

Sales engineering is the part of B2B sales, where complex engineering products are sold to industrial customers. It is one of the biggest business applications, standing for about 10 trillion of EUR business volume per year with about 3.500.000 sales engineers worldwide. Up to now no specific education exists, but increasingly this subject becomes part of the university education. Unfortunately the available knowledge of consumer marketing is different and can only be used partly. Seen the size and importance of the sales engineering sector, the need for professional sales is great. In order to improve the professionalism of the sales engineers, scientific knowledge needs to be built up in this sector, too. It is proposed to investigate different industry types and to describe them one by one, showing in each the sales and buying behaviour, the technical and commercial requirements and the competition level. Based upon these findings it shall be possible to model the buying process and the market rules and to develop a thorough understanding and knowledge.

2. Sales Engineering

Teaching sales engineering has become popular in some countries of the EU in the last years. About 15 years ago, only two or three universities offered courses for sales engineering. This number has gone up since, reaching 20-30 universities at the moment. "Sales engineering" or "Technical Sales" describes the selling of complex technical products to industrial customers. Technical products mean that the function, performance and value of the product can only be judged, designed and discussed by engineers. In consequence, engineers have to do the selling work to the customers as often the product is specified in a dialogue between the manufacturer and the customer

The English literature generally distinguishes sales into the classes B2B and B2C. This approach uses the description of the customers as distinguishing criterion and is very important as a first description. For sure sales engineering is to be found in the field of B2B. The second criterion which needs to be used relates to the properties of the sold product, which needs to be technical, complex and adaptable to the needs of the customer. The third

criterion describes the properties of the selling person: it needs to be an engineer. So sales engineering cuts out a sharp segment of all B2B sales activities and needs to satisfy three criteria describing the nature of the customers, the nature of the product and the sales person's education.

3. Why is Sales Engineering relevant?

The size of the technical sales market can be roughly estimated on the basis of world economic figures. In 2012, according to the CIA world fact book the industrial GDP amounted to roughly 17.000 billion EUR worldwide. The GDP is the value of parts and services manufactured and thus sold. GDP does not distinguish between B2B and B2C. In order to estimate the relationship, an example from the automotive sector can give some insights: the German car builder association VDA announces that the value adding by the OEM amounts to roughly 30%, whereas 70% is done by the suppliers. OEM sales counts to B2C sales and the suppliers sales to B2B, thus technical sales.

So in this very important industry the sales engineers sell 70% of the industry sector GDP. Of course this varies from sector to sector, but as a hypothesis it may not be completely wrong if one estimates that the size of business sold by sales engineers may be up to 50% of the industrial GDP.

In order to get rough impressions of the number of people working as sales engineers worldwide other guesses need to be made. A short survey among some mid-sized companies showed, that one sales person covers about 5 million EUR turn over per year. Of course this figure needs to be confirmed, but it can give an indicative impression of the number of sales engineers worldwide. If it is taken as the average sales volume of a typical sales engineer, about 3.500.000 sales engineers are working worldwide, which is a considerable amount of people!

It is desirable for a country to have good sales people in order to:

- Support the product innovation by thorough knowledge of customer's expressed and unexpressed expectations
- Reduce time-to-market of innovative products
- Minimize the development cost by a focussed market approach
- Increases sales volumes by better customer knowledge and persuasion/negotiation skills
- Optimize the margins by good negotiations
- Improve the competitiveness of the company by systematic and reliable feed-back about market developments and competitors moves

Seeing the impact of sales engineering one would consider this as a prime field of interest for each country in order to strengthen its industry and exports.

4. How have Sales Engineers been educated up to now?

As mentioned above, there has not been any special education for sales engineers. Companies recruited experienced engineers either from the development departments or

from manufacturing and sent them out after a short introduction and training phase. The motivation of the companies to do so was that they expected the true engineer to be the best placed person in the company to explain and persuade the customer. This approach has worked to some degree up to now, but it is limited. Seller's markets turn into buyer's markets and the purchasing power of the companies has been increased significantly in the past years in order to save money. No longer the best (cheapest) offer is chosen, but the best placed seller is put under additional pressure in order to further reduce the purchasing cost. This buying approach shows the additional skills which are needed to be successful under such conditions: knowledge of quality issues, cost accounting, part design, marketing and negotiations. These skills are easily acquired by the young sales engineers. What comes on top is more critical: engineers are typically object-orientated and often have introverted personalities. But they need to be person-orientated, extroverted and strong in communication. They need a solid self-esteem to balance customer's attempts to destabilize the sales person in order to gain further price downs. Personality aspects are person immanent and training will not be very successful. So it becomes obvious that just recruiting engineers may not be the best choice for the sales departments.

5. What education is needed?

As mentioned before, solid engineering subjects build the basis of the successful work in the job later on. Additionally marketing, communication and sales lessons complete the education. All these subjects are academically well established except the specific sales courses for sales engineers. Current sales literature describes mainly the sales process to consumers, which is a very well researched and scientifically well based branch of knowledge, having very good results.

But there is little qualified and scientific based sales engineering knowledge around. Analysing sales engineering books shows that they are often merely descriptive and in most cases show the "best practice" in selling. Sales engineering literature is rare and it lacks systematic approaches and scientific results. The scientific situation can be described as the "age of alchemy", where recipes were exchanged and little was known between inputs and outputs of the chemical reactions.

Sales engineering is different from consumer selling in at least these aspects:

- Most of the (complex) products are established in a dialogue between customer and supplier
- The products specifications are a compromise between the customer's requirements and the supplier's capabilities
- This means that each selling act is the consequence of a creative technical and commercial process
- Taking into account the situation and the personality of the buyer

In order to improve the professionalism of the sales engineers, teaching "best practice" is not enough. True professionalism is based upon systematic structures and scientific knowledge. Both are non-existing but crucial for the improvement of the industrial business.

6. How can Sales Engineering Science be established?

According to the author's conviction, the smallest to investigate element is the group of companies doing the same work. A typical example would be "manufacturers of stamping parts" or "manufacturer grinding machine tools". These companies have comparable technology, work in the same market and serve similar customers. It can be expected that on this level the company's behaviour is similar enough to find rules and to model the sales processes. The first scientific step would be to find out which are the variables needed to describe the individual industry sectors sufficiently.

Based upon these detailed descriptions, the inner logics of the business behaviour can be researched. This knowledge may lead to a better understanding of the supplier's and customer's decisions and actions. Comparing the results, parallels may be found between different industry sectors and more inner laws of business may be revealed, supporting the knowledge and upgrading sales engineering science from the collection of facts to a young field of science.

7. Limitations of the scientific approach

To the understanding of the author the problems of getting started with the scientific approach are less due to the complexity of the matter. All what is needed is solid and systematic research work to be performed on a multitude of industrial sectors. The limits lie in the fact that the researchers need to have worked for a considerable amount of time in the researched industry in order to be able to set the correct research approach and to evaluate the results. As teaching sales engineering in universities becomes more popular, more academics become available for this task.

The second hurdle to overcome is the establishment of a centre for the publication of findings. Without a internationally recognized publication organ, no commonly accepted built up of knowledge can happen. The GSSI organization may serve as a communication platform for sales engineering science.

1: the CIA World Factbook, Skyhorse Publishing