

## Increasing market growth by price cutting ?

**Jochen Gnaedinger**

Mecos Traxler AG, Business Development  
 Industriestrasse 26, 8404 Winterthur, Switzerland  
[Jochen.gnaedinger@mecos.com](mailto:Jochen.gnaedinger@mecos.com)

### ABSTRACT

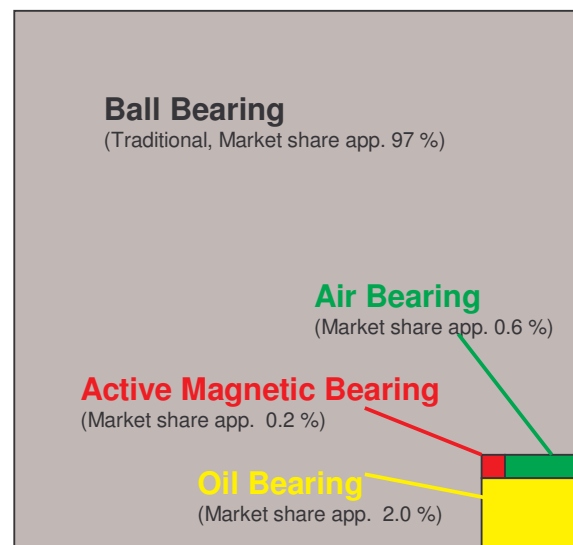
Traditional magnetic bearings in relation to the existing ball bearing market, cover a market share in the per mil area, whereas oil and air bearing markets are in the per cent area. Achieving the cost level of oil and air bearing systems gives the magnetic bearing technology the chance to penetrate into traditional oil and air bearing markets by tipping today's market share. This paper describes approaches, frame- and pre-conditions to reach this target with as well as the entrepreneurial consequences for magnetic bearing solution provider.

### INTRODUCTION

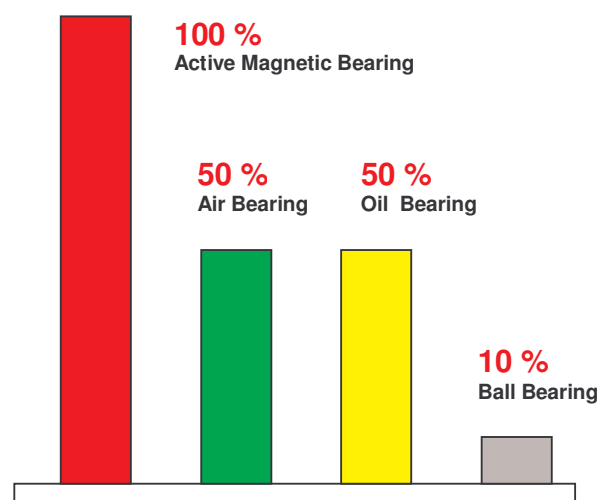
Traditional magnetic bearings in relation to the existing ball bearing market, cover a market share in the per mil area, whereas oil and air bearing markets are in the per cent area. Taking the size of the plane as the equivalent to the technology oriented bearing market, today's market can be visualized as described in *Figure 1*.

Taking the price of an average bearing system in consideration with the technology, you will find differences which act as one of several barriers by entering traditional oil or air bearing markets [Figures 2].

Historically, magnetic bearing were used for special solutions, mostly when



**FIGURE 1:**  
 Bearing Market (app. 30 Bil. USD)



**FIGURE 2:**  
 Ave. System Price in % (Cost of Ownership based)

traditional technologies failed. Therefore a higher market price was justified even from a marketing view.

But is this a must for the future of this technology ?

### EXISTING MARKETS

What are the main leverages to make a market attractive ?  
 The classic marketing theories talking from market size, market growth, market competition, barriers etc.; Successful entrepreneurs focus on sustainable existing market with an satisfactory market size coupled with a mix of activities in future markets with promising market sizes.

Today's active magnetic bearing applications are mostly found in the global oriented vacuum and coating markets. Main players are Edwards (BOC), Shimadzu, Leybold Vakuum, Pfeiffer Vacuum, Alcatel, Osaka Vacuum and a lot of others. Decision makers are their OEM customers like Novellus, Applied Material, Samsung and many more. Independent if magnetic bearing providers are bound as S2M (BOC), Shimadzu, Alcatel or independent as Revolve, MECOS and others, the market prices are today the main argument to survive in this competitive market. Main competitor is the traditional ball bearing technology. Active magnetic bearing technology has in comparison to the traditional ball bearing technology even in this specific market a lot of advantages – but the

market does not accept to pay the double price for these advantages. Increasing the market share of active magnetic bearing based vacuum pumps means decreasing today's price level. Depending on the market acceptance, today's market share can be doubled.

Active magnetic bearing are also employed in the Turbo market, mainly in compressors and expanders, with their specific rotordynamic challenges. Often there is a small numbers of units, with relatively high prices for the bearing systems. In this market segment much more standard applications use oil bearing systems. Using system synergies, Oil bearings are often used by motors in the same applications. In addition, oil bearings are used a in the power generation market in turbines and generators.



**FIGURE 3:** Ave. system price in %, combined with market size of oil and air bearing (plane as equivalent to market size)

Large companies like SIEMENS, General Electric, ALSTOM are in touch with the magnetic bearing technology since many years – but several barriers limit an entry of magnetic bearing technology in this traditional global market. One of these barriers, but not the only one, is the price level of magnetic bearing systems.

Application oriented “cost of ownership” (CoO) considerations show that, by a market price cut in the range of 50%, active magnetic bearing systems will achieve the cost level of oil and air bearing systems.

It is only based on such a price cut that - factoring out the standard ball bearing solutions featuring an average price level of only approximately 10 % of an active magnetic bearing solution - the future active magnetic bearing market can increase by a realistic factor of 3 to 5, by taking over a part of the share of the traditional oil and air bearing markets.

## **FUTURE MARKETS**

For sure, many ideas of today’s magnetic bearing applications belong to market niches without any chances to reach in future an interesting market size. Applications for market niches does not mean, that out-performers will not achieve a reasonable profit, but no scale effect of the learning’s of that solution can be used. Sometimes it’s really “Happy Engineering” as a project leader of a large international Company told me some months ago.

As we believe to know, there are only a small number of markets with a chance to reach a reasonable market size in the near future. Most of them stay

in competition with other bearing technologies. Others need at least 20 years more to reach their market size targets – and 20 years are a long time for a technology.

Almost all these future market applications have one thing in common: Today’s price level of a magnetic bearing solution is much too high and therefore not competitive.

## **CROSSING PRICE BARRIERS**

Cutting prices means cutting cost, increasing efficiency of processes and invested capital.

Findings of current cost structures analysis by today’s applications and added value processes have several dimensions.

The share of labor cost, in comparison with other technologies, still is too high. Global sourcing or even off shoring could be a solution – but also a risk. It’s a must to have the necessary management skills and capacities to handle such strategies.

More standards and portfolio ideas stay in competition with customized, application oriented optimizations.

Cost of ownership (CoO) calculations follow the rules of purchase managers and not the rules of financial investments.

Summarizing the market situation we can say that the rules are given – the question is therefore only how to act, where to act and how fast to act.

Technology oriented cost cutting provides an excellent leverage and, hence, must be a strategic focus for any active magnetic bearing provider. To be

leading in technology is a market advantage – but has also to be used to help in cutting cost.

## **MARKETING**

The slowly arising competition between the active magnetic bearing solution providers in an emerging market, is healthy and will help to increase professionalism in handling of current and future customers. Customers like working competition, stable technologies, transparent market prices, well known companies and excellent local services.

Who of us does really offer this understandable market need ?

## **ENTREPRENEURIAL CONSEQUENCES**

Today's estimated annual market growth for active magnetic bearing systems amounts to 15%. Taking the chance to penetrate existing markets, occupied today by technologies of oil, air and ball bearings, could easily double the market growth to annually 30%.

Handling a continuous market growth of 30% is an entrepreneurial challenge for all existing and future active magnetic bearing providers (e.g. global supply chain, human resources, sales- and service-channels, quality, processes, knowledge management, management skills etc.).

## **RETURN ON INVESTMENTS (ROI)**

It is foreseeable that today's gross margin in the active magnetic bearing business will be reduced. Keeping or

even increasing return on investment (ROI) requires a good balance between operative and the strategic investments. Investments with a focus on cost cutting and increased efficiency will at least support this target.

## **HEADACHE FOR NEW ACTIVE MAGNETIC BEARING SUPPLIERS**

Today's active magnetic bearing market leaders have invested in technology and know-how over many years. This allows them to focus on applications, requiring a more advanced technology with application oriented know-how. Used in a strategic issue, it will help to move the current business up-stream (entering the former customer value added chain by extended own performance).

New active magnetic bearing providers lack the advantage of such a technology oriented know-how accumulation and, therefore, have to compete from the beginning with a higher capital efficiency and lower market prices.

## **IN ADDITION**

### *Suggestion for future ISMBs*

*ISMB is a technology driven symposium. Technology most often prevails marketing oriented influences for market initiatives. However, both marketing and technology are strategic elements for a sustainable market development.*

*To move the focus of the symposium from a purely technology driven to a more market driven, but technology oriented, symposium could enrich the event and, moreover, could increase the number of participants from the OEM and end user market.*