In the last issue, I discussed the lack of cooperation in the U.S. magnet industry, and how this behavior jeopardizes its long-term viability. It prompted a few comments and suggestions, for which I am grateful. In this article, I would like to focus on some realistic ways to cooperate that will help the industry survive.

About 10 years ago, my wife and I were living in New Jersey and suffered through a winter with over 15 major snowfalls, a large number in that part of the world. Yet, one storm stands out in particular. We were warned a day or two in advance to expect a particularly heavy snow. It started snowing on Sunday morning and did not stop until Monday afternoon. The total accumulation was about 3 feet (just under 1 meter), an incredible amount of snow for the region around New York City.

While the snow was falling, the best thing to do was to stay inside and remain comfortable. It was really not very safe to be outside for any length of time. People responded in two distinct ways, they felt trapped inside by the snow and developed "cabin fever", or they enjoyed the time inside and did not think too much about what was going on outside.

When the storm was over, many people ventured out to see what the storm had done. I foolishly thought that just a bit of shoveling would be enough to get on the road again. It became clear that it was going to take a lot of work before we could go anywhere. I wasn't able to get to work until Wednesday that week and some people never made it to work the entire week.

Many people, however, did not leave their houses when the storm was over. They had what might be called a "bunker mentality". Isolated by the storm for so long, they did not recognize when conditions had changed and were content to remain inside. It is easy to understand this attitude. For some there is comfort in the status quo, making it easy to ignore the outside world and focus only on internal matters.

Why did I tell this story? It is because I think many people in the U.S. magnet industry suffer from a bunker mentality. They need to get out and do some things outside their organization and outside their comfort zone. Let's look at three possible areas of cooperation.

One way to interact is with other magnet companies. Historically, this has been a strong interaction, although it has recently fallen on bad times. principal conduit for this interaction has through the International been Magnetic Association (IMA, formerly known as the Magnetic Materials Producers Association or MMPA). In the past, people felt that they were missing out if they did not participate in IMA activities. There was a very active effort to promote knowledge about magnets, by sponsoring User Conferences and publishing standards. Unfortunately, there is little activity in these areas and membership in the IMA is dwindling.

Certainly, something needs to change with the IMA, but there is no excuse for not being a member. *All* magnet companies need to belong to the IMA and they need to participate fully, to receive all the possible benefits. People need to stop being afraid of participating

in the IMA. Even in its weakened state, the IMA remains a very good vehicle for cooperation between magnet companies. It is woefully underutilized, but better participation will strengthen the IMA and the industry.

The next area to consider is universities and the U.S. federal funding agencies. Actually the collaboration between these two groups is excellent, since many agencies fund university research. That is not the problem. We need to do something about the very weak, some say nonexistent, interaction might between magnet companies universities. We should remember that before World War II most university research was sponsored by industry and it was a very fruitful collaboration.

Should magnet companies start funding university research? Yes, they probably should, but it is naive to believe that they will. This is because it is not cheap and practical results are often several years away. This approach probably does not make such good business sense today.

But there is an alternate approach that should be considered. In one or two cases, a magnet company has joined a university in jointly seeking federal funding for a research project. From all outward appearances, this approach seems to work well, the magnet company receives federal funding and some commercially viable products have emerged from the collaborations. More magnet companies need to explore this path.

And finally I will comment about conferences and general networking opportunities. One of the more difficult jobs I have done is finding speakers for a conference to speak or write about permanent magnets. After putting myself on the list, I struggle to get commitments to fill the other slots. It isn't that there are not enough qualified people out there. What is clear is that making a presentation at a conference or writing a paper is not highly valued by most employers in the magnet industry. I think it is because they do not see a connection between the presentation and their bottom line, even though there may be one. This attitude does not serve the industry well and needs to be reconsidered.

The U.S. magnet industry has drastically changed over the last decade. It is smaller, yet more fragmented and isolated. To survive, each person must make some fundamental changes in the way he or she operates. I have offered a few possible changes, but I believe there are many possible solutions¹, limited only by our creativity and imagination. As I always like to point out, magnets are based on cooperative behavior of spinning electrons. Can they teach us anything? I sincerely hope so.

1. Collaboration Rules, Philip Evans and Bob Wolf, Harvard Business Review, July-August 2005, www.hbr.com

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