



Expert Contributors

MEMS Commercialization Report Card – Part 7: Marketing (Part 2)

By Roger H. Grace

Introduction

Appearing in the Sensors Daily March 11 issue, Episode 6 of the MEMS Commercialization Report Card⁽¹⁾, I addressed the topic of marketing. This episode will provide an overview of marketing principles and a brief review of the results of the Report Card. When conducting interviews, it became apparent to me that, when following up on the 30 plus respondents to my annual Report Card study, it would be interesting to take a deep dive into the rationales for their submitted grades.

The topics of marketing communications (MARCOM) and promotion were quite popular and received significant comment. Part 3 will be an edited and shortened version of the results of those interviews with four experienced individuals whom I consider to be top marketers in the MEMS and sensors industry. Their comments were highly favorable regarding the judicious use of networked social media vehicles as an important and integral part of the marketing strategy.

Marketing Defined

Included in Episode 6, Part 1 was a definition from the American Marketing Association on marketing, repeated here for reference. "Marketing is the activity, set of institutions, and processes for creating, communicating, delivering and exchanging offerings that have value for customers, clients, partners and society at large."

In addition to this definition, a concept that I often use to describe marketing is the one that addresses the four "Ps" of marketing, known as the elements of marketing (see figure 1).

1. **Product:** how the product meets the needs of the target audience(s) from a features and specification perspective and what its life cycle.
2. **Price:** cost that consumers pay for the product/service
3. **Place:** where the products/services are being sold, the target audience(s) and the mechanism(s) through which the product/service finds its way to the market
4. **Promotion:** includes advertising, public relations, and promotion strategy

The topic of promotion is the primary focus of this article.

MARKETING



Fig. 1: The MEMS Commercialization Report Card grade for marketing received less than favorable grades in the past ...the good news is that it has improved slowly from its historical "C" levels to a "B" for the past four years. The need to optimally differentiate MEMS products by suppliers has driven increased adoption of marketing to win market share. This is especially true of suppliers who support the consumer electronics markets where many products have become commoditized. It also reflects the current heightened level of MEMS maturity. Standard deviation (SD) was 1.15 Courtesy: Roger Grace Associates Report Card Grades

As stated in Episode 6, the Report Card the grade for MEMS was B. It has been at this level since 2015, inferring that MEMS has finally become a mature technology and MEMS marketing has finally come into its own (see figure 2). However, when the Report Card was launched in 1998, the grade was C-.



Fig. 2: The popularly referred-to term of “marketing mix” describes the four constituent disciplines that make up the activities to support marketing. The use of marketing research, not addressed in this article, is a major tool necessary to support the effective planning and execution of these disciplines. Courtesy: Roger Grace Associates

Thus, it has taken quite some time to emerge from this unsatisfactory level, finally arriving at the grade of B in 2013. I have previously addressed some of the rationale for this phenomenon^{[2][3][4]} and referred to this situation of MEMS marketing as an oxymoron or opportunity based on the responses from previous Report Card studies. The good news, one needs only to be better than the competition to be successful.

Historical Evolution

My first exposure to MEMS marketing came with my first electronics industry marketing position in 1980 as the Marketing Manager of the MEMS company, Foxboro ICT. After almost

15 years as a design and applications engineer, I had my first opportunity to become player in the MEMS marketing arena.

One of my many responsibilities was to help promote our MEMS pressure sensing products and to help uncover new sales opportunities for the sales team. I had a hard-fought and -won campaign with my CEO to obtain an adequate budget to achieve our corporate objectives. Fortunately, at that time, I had a large portfolio of MARCOM tools available to achieve my goals that include:

- **Public Relations:** press releases to introduce new products, white papers, contributed articles to targeted publications.
- **Trade Shows:** attending, exhibiting, and presentations.
- **Advertising:** digital and print media.
- **Direct mail campaigns:** via postage.
- **Collateral materials:** capability brochures, data sheets, etc.

I had the opportunity to use a mix of all of these and Foxboro ICT became quite successful in the process. Today, I work with my MEMS and sensors clients with an expanded portfolio of tools from which to select to achieve their organization's marketing objectives. These include:

- **Advertising via electronic media**
- **Networked social media via websites/SEO, LinkedIn, Facebook, Twitter, Instagram, YouTube, etc.**
- **Webinars**
- **Direct e-mail programs**

As a result, MEMS and sensor marketers now are blessed with having an exceptionally full and varied toolbox of communication vehicles to achieve their objectives, several of which can be implemented at little to no cost. This was the basic message that I heard from the majority of the interviewees.

My approach in recommending the optimum tools to my clients is that it takes a judicious selection of these elements to achieve the necessary outcome at the least number of dollars^{3/4}maximizing ROI. But this takes a great deal of time to do the proper planning and budgeting as well as a great deal of time to employ social media.

Success is best realized by using the synergy of these elements, not by one alone. Also, but difficult to achieve, being able to assess the efficacy of each of the promotional vehicles used in their contribution to achieving the sale. To quote department-store magnate John Wannamaker, "Half the money I spend on advertising is wasted. The trouble is, I do not know which half."

Know More

The topics of marketing and market research will be addressed within the many tracks scheduled for the upcoming MANCEF Commercialization of Emerging Technologies

Conference (COMS) to be held from October 19-22, 2020 in Rockville, MD. For more information, please visit [MANCEF](#).

Summary & Conclusions

The Report Card has given the topic of marketing a grade of B and has done so since 2015. It has been a lengthy and steady climb from the C- level it earned in the first Report Card in 1998. I believe that this is primarily a result of the current maturity of MEMS technology and the recent availability of low-cost/highly-effective networked social media vehicles.

It is important to note that all of the interviewees noted that their use of networked social media has been on the rise because of its highly effective ROI as well as the fact that younger engineers, which are their customers, are entering the industry and have grown up with social media. The big challenge to MEMS and sensor marketers is to better differentiate its product offering from competitors because many MEMS and sensors have become commoditized.

Differentiating features including miniaturization, ultra-low power, and higher performance, especially stability over time and environment, ease in integrating, enhanced functionality, and price still need to be effectively communicated. Additionally, demonstrating value added is also important. As history is to be considered as a compass and not as a map, the Report Card should be used accordingly.

In conclusion, MEMS and sensors marketers must address all of the MARCOM tools that are available to them and evaluate the pros and cons of each including cost, ability to properly convey the message, and the number of targeted potential customers to be reached by each. It has been my experience over the past 35 years as a marketing consultant that a judicious mix of print, electronic, social media, and trade shows need to be judiciously selected and planned for to form a successful integrated marketing communications program. These elements are truly synergistic and need to be utilized accordingly.

REFERENCES

^[1] R. Grace; 2018 MEMS Industry Commercialization Report Card; Sensors Daily; [Episode 6, Part 1](#); March 11, 2020

Links to all previous episodes:

- [Episode 1...Introduction](#)
- [Episode 2...Technology Clusters](#)
- [Episode 3...Infrastructure](#)
- [Episode 4...Design for Manufacturing and Test/Part 1](#)
- [Episode 5... Design for Manufacturing and Test/Part 2](#)
- [Episode 6...Marketing \(Part 1\)](#)

^[2] R. Grace; MEMS and Sensors Marketing: Oxymoron or Opportunity; Commercial Micromanufacturing International; Vol.9, No.4; rgrace@rgrace.com

^[3] R. Grace; MEMS and Sensors Marketing: Oxymoron or Opportunity-Part 2; Commercial Micromanufacturing International; Vol.10, No.2; rgrace@rgrace.com

^[4] R. Grace; MEMS and Sensors Marketing: Oxymoron or Opportunity-Part 3; Commercial Micromanufacturing International; Vol. 10, No.3;

About the Author



Roger H. Grace is president of Roger Grace Associates, a Naples Florida based strategic marketing consulting firm specializing in high technology. His educational background includes a BSEE and MSEE (as a Raytheon Company fellow) from Northeastern University, and the MBA program at Haas Graduate School of Business at U.C. Berkeley. He has specialized in sensors and ICs for over 35 years with a focus on micro electromechanical systems (MEMS). He has authored over 75 technical papers and articles, organized, chaired, and spoken at over 50 international technical conferences.

Roger is frequently quoted as an industry expert in major international technical and business publications on the topic of technology commercialization. He was the co-founder, past president, and currently is the Vice President of the Americas of the Micro, Nano and Emerging Technologies Commercialization Education Foundation (MANCEF), and has served on the Board of Directors of the Florida Manufacturing Extension Partnership from 2008 to 2014. For more details, contact Roger via email at rgrace@rgrace.com and to learn more, visit www.rgrace.com.