



Uncategorized

## **MEMS Commercialization Report Card – Part 11: Industry Association, Part 2**

**By Roger H. Grace & Todd Christenson Ph.D.**

### **Introduction**

**This is Part 2 of the two-part series on the topic of industry associations to support the ongoing 2018 MEMS Commercialization Report Card series. In Part 1<sup>[1]</sup>, we addressed the B-grade of this subject and its fall from grace of two grades from B+ the previous year and attempted to provide our rationale for this based on the verbatims from the respondents of the market study.**

We also highlighted two significant US-based industry associations: the Micro, Nano and Emerging Technology Commercialization Education Foundation (MANCEF) and the MEMS and Sensors Industry Group (MSIG). In this article, we will address two German-based associations: the Organic-Electronics Association (OE-A) and IVAM. As a matter of full-disclosure, the co-authors of this article are members of the Board of Directors of MANCEF.

In early Report Card development, it was evident that industry associations were a critical element in the commercialization of MEMS, as well as any other industry. The Center for Association Leadership<sup>[2]</sup> reported that there were 66,985 IRS-recognized trade and professional organizations in the US in 2013. The ones that we are addressing here have a focus on the international microelectronics industry and especially MEMS and sensors. Many other excellent industry associations exist that peripherally address the MEMS and sensors areas including AEA, iNEMI, MEPTEC, and SEMI, however, they will not be addressed here due to a lack of space.

### Report Card Grades

Figure 1 provides the Report Card grades for industry associations from 2001 to present. This topic was introduced after the first appearance of the Report Card in 1998. As one can see, this topic has received favorable grades from its inception.



**Fig. 1: The 2018 MEMS Commercialization Report Card grade for industry association was B- . This was a two-grade level reduction from B+ in 2017 and a three-level grade reduction from the grade of A- in 2016. 2016 and 2010 achieved the best grade levels of A- since the beginning of the tracking of this topic in 2001. Industry association has historically achieved the best grades of all 14 topics evaluated. Standard deviation (SD) was 0.75 being one of the lowest of the 14 topics monitored. Courtesy: Roger Grace Associates**  
 The 2018 grade was B-, two grades lower than the B+ grade in 2017 and three grades lower than the A- of 2016. It is interesting to note that the industry association grade has never fallen to this level since its introduction in 2001.

The Report Card research process collected the opinions of 35 MEMS experts representing the US, Asia, and Europe and created the Report Card based on their assigned grades as well as

their verbatims of the rationale of the grades. Based on verbatims of the market research, we believe that the significant downturn was primarily attributed to the decline in popularity and influence of the MEMS and Sensors Industry Group (MSIG).

### Industry Association Benefits For Successful MEMS Commercialization

Each industry association has unique benefits and resources available to its members. It is our opinion that the most valuable benefits to the MEMS and sensor communities from a commercialization perspective include the following:

- First and foremost is the creation of opportunities for members via various venues to interact with like-minded individuals that share the same passion and goals for the commercialization of technology
- Creation and distribution of roadmaps and marketing reports
- Creation and publishing of specifications
- Conferences/meetings/seminars/workshops
- Educational activities especially now with websites, social media webinars, newsletters, and blogs
- Job banks
- Lobbying governments

The ability of industry associations to adequately provide these benefits to its members is the prime basis for their success.

### Industry Association Profiles

In the following paragraphs, we will provide edited comments from personal and/or email interviews of the managing directors of these organizations. Their responses were edited for brevity.

IVAM e.V. Microtechnology Network (IVAM), is the grandfather of industry associations addressing the MEMS and microtechnology industry. Founded in 1995, it currently has approximately 200 member companies, primarily European with 25% non-German. Small-to-medium enterprises (SMEs) comprise 75% of IVAM membership while 20% comes from government.

Membership dues are based on the number of individuals employed within the organization and range from a minimum of 240 Euros to 3,000 Euros per year. Research institutes and personal members pay a lump fee. IVAM currently receives approximately 10% of its funding from the regional Westphalian German government. Additionally, 20% of funding comes from membership fees and 70% from market research and conferences.

The organization's executive director is Dr. Thomas R. Dietrich who has held this position since 2014. IVAM has eight full-time employees, two student employees, and one intern. The following are edited comments from a recent interchange with Dr. Dietrich...

**“IVAM’s role is to observe the microtechnology industry and watch out for emerging technologies and application trends and analyze economic and political framework conditions. These insights are used to determine the strategy and activities of IVAM to advise its members. It organizes a diverse range of events in the form of joint pavilions at international trade shows, trade show presentation forums, conferences, workshops, B2B events, and networking events.”**

**“Being an international microtechnology business and technology marketing expert, IVAM connects professionals in the high-tech industries and supports them in bringing innovative technologies and products to market and enabling them to create a competitive edge in the international market. An interesting service that IVAM provides to its members are its focus groups. Their goal is to provide a platform for its members and interested third parties to share their experiences on current events and activities as well as to facilitate coordination of joint activities. Current focus groups are medical technology, technology marketing, microfluidics, innovation management, wearable electronics, and hybrid organic electronics.”**

**“IVAM’s greatest success as a network is that it has been operating successfully in the market for 25 years. We could only succeed in this by reacting flexibly and changeably to trends and adapting to new challenges. One example is our financial independence after an initial phase as a funded initiative. The implementation of new topics, such as advanced materials and the opening-up of new markets, is part of this. In recent years, the main focus has been on digitalization issues and the progress of our internationalization strategy. This will remain a focus in the coming years.”**

**IVAM publishes a newsletter and a digital high-tech magazine called inno with a readership of over 6,000. It also hosts a blog. Editorial focus is to show how technologies can be used to solve problems. Its annual conference typically hosts approximately 150 attendees.**

**IVAM also publishes market studies on current topics of interest. Most noteworthy, IVAM recently undertook a poll of its members to understand and report on the impact of Covid-19 on the microelectronics industry and has made it available to the public<sup>[3]</sup>.**

**The Organic and Printed Electronics Industry Association (OE-A) was founded in 2004 and is located in Frankfurt, Germany. The OE-A is a working group within VDMA, the largest industry Association in Europe. OE-A has over 200 members from over 30 countries worldwide and its managing director is Dr. Klaus Hecker. Cost of membership ranges from 1,300 Euros to 13,750 Euros.**

**OE-A members include both established companies and start-ups in the field of flexible, organic, and printed electronics including component and materials suppliers, equipment and tool suppliers, producers and system integrators, end-users, and research institutes and universities. The following are edited comments from recent interchanges with Dr. Hecker.**

**“The vision of OE-A is to build a bridge between science and applications to grow an industry of electronics beyond the classic silicon approach. OE-A enables and fosters collaboration by all participants along the value chain, from research to the integration into final end-products by coordinating, harmonizing and facilitating their activities.”**

**“To promote communication and business among its members, OE-A organizes networking opportunities for members, workshops, conferences, and trade fairs. It also collaborates with related associations in the area of emerging electronics.”**

**“We have seven working groups including roadmaps, hybrid systems, sustainability, women in printed electronics, education, encapsulation, and a demonstrator. In March 2020, we published our eighth edition of the OE-A Roadmap for Organic and Printed Electronics 2020<sup>[4]</sup>.”**

**“OE-A offers many activities to further strengthen the development of the flexible, organic, and printed electronics industry. Additionally, its members are supported in meaningful ways and provided with numerous exclusive benefits including advocacy and funding, standardization, market and technology information, and an international networking and communication platform.”**

**“Some of our membership benefits include the hosting of webinar series on various topics, developing and publishing market reports including a business climate survey, providing lobbying with government lawmakers in particular the European Commission with support in the definition of funding programs and consultation, and providing a job opportunity bank via a database for students.”**

**OE-A has also undertaken and published a market study for its worldwide membership that addressed the impact of Covid-19 on the worldwide printed electronics industry. This is another excellent example of how an industry association can address the needs of its membership.**

**LOPEC is the annual OE-A exhibition and conference drawing over 2,500 attendees, 160+ exhibitors, and over 200 presentations.**

## **Summary**

**In this second of the two-part series of articles on industry associations as part of the 2019 MEMS Industry Report Card, we have provided additional reportage and repartee on the topic of industry associations including a recap of the report card grade of B- and its rationale, plus the reemphasizing of the benefits of industry association membership. Certainly, one of the most important of these is the ability to share knowledge and information with other like-minded colleagues in venues that are most effective and enjoyable for this purpose. The goal is to find the best commercialization technology.**

**We believe that membership in industry associations is of great value, especially when the goals, services, and benefits of the association are closely aligned with the needs of the membership. Most noteworthy examples of this are the two market studies previously addressed above where both OE-A and IVAM queried its membership of the impact of Covid-19 on their business and developed and distributed a report on their findings to their members. This kind of service is especially valuable for small and mid-size organizations who typically have limited marketing budgets.**

Only a few of the microsensor and microelectronic industry associations have been highlighted in this series with more expected to emerge regionally in today's rapidly advancing "more than Moore" sensor-based industrial environment. The latest MEMS Commercialization Report Card results reflect the need to increase and improve industry association activity. Critically important to this activity is the need for networking, a prime benefit provided by industry associations, that is today being squarely challenged in the new socially-distanced environment. The net result is a tremendous challenge for associations to provide more efficient means by which to help their members grow their businesses, collaborate, maintain supply chains, and be aware of and participate in technology roadmaps and standards.

For industry associations to survive and to ultimately flourish, they need to be sensitive to maximizing the customer and, in this case, member experience. Increased emphasis on helping entrepreneurs has been an area where industry associations such as MANCEF can help new companies be successful and provide dramatic improvement to commercialization rates. This area of focus is expected to continue to receive more emphasis as new exponential technologies continue to disrupt established industry. Such mentoring and service is part of the crucial role which industry associations are compelled to provide as part of a collective voice in leading advancement of the MEMS and sensor industry of the future.

For those who wish to participate in the 2019 Report Card market research study, please **contact Roger Grace via email**. Thank you for your interest.

## REFERENCES

[1] R. Grace, A. Oliver; Industry Associations, Part1, 2019 MEMS Commercialization Report Card; Sensors Daily; May 20, 2020;

**<https://www.sensorsdaily.com/index.php/mems-commercialization-report-card-part-10-industry-association-part-1/>**

[2] Center for Association Leadership, The Power of Associations, 2015

[3] IVAM, Market Study on the Impact of Covid-19 on the Microelectronics Industry, **[https://www.ivam.de/research/executive\\_panel/mikrotechnik\\_branche\\_erwartet\\_derzeit\\_keine\\_n\\_langfristigen\\_schaden\\_durch\\_covid\\_19](https://www.ivam.de/research/executive_panel/mikrotechnik_branche_erwartet_derzeit_keine_n_langfristigen_schaden_durch_covid_19)**; **[www.ivam.de/corona-krise](http://www.ivam.de/corona-krise)**

[4] White Paper: OE-A Roadmap for Organic and Printed Electronics-2020, 8th. Edition, 114 pp., **[www.oe-a.org/roadmap](http://www.oe-a.org/roadmap)**

About the Authors



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Todd Christenson develops and commercializes processes and devices within the microsystem industry and is a passionate evangelist of emerging technology commercialization broadly. He currently serves as president of MANCEF, an organization focused on helping people bring new technology to the marketplace.

He is Chairman-emeritus and CTO of HT MicroAnalytical, Inc., a company he co-founded in 2003, which designs and manufactures metal-based MEMS. Previously, he was on staff at Sandia National Laboratories working on MEMS and advanced semiconductor technology.

Todd received a Ph.D. in Electrical Engineering from the University of Wisconsin-Madison where he carried out research on semiconductor devices and integrated sensors at the Wisconsin Center for Applied Microelectronics laboratory. He has authored several book chapters on MEMS and micro actuators, written over 150 research publications, and has been granted 48 patents related to the areas of microfabrication and microsensors. [toddchristenson@mancef.org](mailto:toddchristenson@mancef.org)





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**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).**

**Roger has authored over 75 technical papers and articles, organized, chaired, and spoken at over 50 international technical conferences. He 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 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](mailto:rgrace@rgrace.com) and to learn more, visit**