Report to the IEEE Computer Society Technical Activities Board (TAB): Regaining Industry/Government Participation

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Executive Summary

- Requested by Stephanie White to research and suggest ways to regain government/industry/practitioner interest and participation in Computer Society services and activities

Executive Summary

- Three key areas were researched:
  - External perception
    - What does an external observer “see” when reading Computer Society web pages?
  - Current leadership
    - What type of an organization is “seen” by an external observer when reading Computer Society web pages?
  - Value-added (as externally perceived)

Executive Summary

- Findings statement:

  I wish to state that any information explicitly indicating names and affiliations is by no means an attempt to imply these individuals are not qualified to perform the duties of their assignments, nor that they don't have the best interest of the IEEE or Computer Society at the forefront of their thinking. They are listed simply to demonstrate the external view a current or prospective member has when viewing the information.

Executive Summary

- External perception

Conferences:	Academic Representation	Industry/Government
InfoCom - 1985	20%	80%
InfoCom -2004	98%	2%
GlobeCom – 1985	20%	80%
GlobeCom -2004	98%	2%
LCN – 1985	15%	85%
LCN – 2004	99%	1%
Leadership:		
IEEE Board of Directors (11)	7 (64%)	4 (36%)
CS Board of Governors (21)	67%	33%
CS Executive Committee (17)	12 (71%)	5 (29%)
CS TC Chairs (37)**:**	31 (83.8%)	6 (16.2%)

Executive Summary

- External perception
  - Conferences (Computer Society and ComSoc)
    - Focus has shifted from technology deployment to a research publication venue.
    - Computer Society and ComSoc leadership under constant pressure from academic leaders to fund student participation in conferences.
    - Increased student attendance decreases conference cash flow since students attend conferences at a rate ranging from 20% - 50% lower than non-student attendees. This reduces conference surplus with no proportionate decrease in conference cost (e.g. hotel services, meals, proceedings, etc.).
    - Less government/industry/practitioner participation due to the increase in accepted papers dealing with topics of interest to researchers, but of little to no value to practitioners.

Executive Summary

- External perception
  - Leadership has shifted from industry to academia.
    - IEEE Board of Directors:
      - 64% Academic Representation
      - 36% Government/Industry Representation
    - Computer Society Board of Governors:
      - 67% Academic Representation
      - 33% Government/Industry Representation
    - Computer Society Technical Committees:
      - 84% Academic Representation
      - 16% Government/Industry Representation

Executive Summary

- External perception
  - Value-added has diminished from a practitioner's perspective.
    - The Government/Industry/Practitioner's IEEE now appears to be contained at the Chapter Level.
    - During the 1980's and early 1990's, the IEEE/CS/ComSoc played an important role in identifying new technologies and giving him and his team new ideas to try out. [Howard Salwen, Founder and CEO of Proteon]

Executive Summary

- External perception
  - Value-added has diminished from a practitioner's perspective.
    - IEEE, especially Computer Society, has many members employed by major corporations throughout the US and World.
    - The role of technology has shifted from essential to company formation and survival enabling new products and market success.
    - Technology continues to change rapidly and companies struggle to keep up.
    - Companies struggle with roles of technology in research, product development and marketing.
    - Companies are increasingly shorter-term focused, especially in the US.
    - [Ellis Nolley, Founder and CEO of Strategic Growth]

Recommendations

- Accept the IEEE and the Computer Society (CS) have become predominantly academic institutions.
  - Restructure the financial model with the basic premise that academics do not spend money unless available from research grants.
  - The new CS financial model must take into consideration lower conference surpluses due to increased student participation, and increased pressure from CS academic leaders to fund student travel and attendance at conferences.

Recommendations

- Accept the IEEE and the Computer Society (CS) have become predominantly academic institutions.
  - The new CS financial model must take into consideration a reduction in sales of conference proceedings and CS publications (universities typically purchase one copy for all to use), library services (universities typically purchase a group access license so hundreds of students can search the CS libraries basically for free), and a reduction in cash flow from other CS services since industry no longer sees value in these items.

Recommendations

- Accept the IEEE and the Computer Society (CS) have become predominantly academic institutions.
  - The new CS financial model must also consider that academic institutions tend to spend money (regarding IEEE and CS services and conference attendance) at a lesser rate than government/industry except when available from research grants.
  - Lastly, save your marketing dollars; any marketing intended to increase revenue will most likely be ignored by most academic institutions.

Recommendations

- If the IEEE and Computer Society wish to remain predominantly an “Institution of Electrical and Electronics Engineers”, then:
  - Restructure the Computer Society to more closely follow the Hot Chips conference model sponsored by **TCMM** (see: **http://www.hotchips.org/hc17/index.htm**).
  - Initiate an aggressive recruitment of CS/TAB/TC leadership from industry/government, approaching industry/government for direct sponsorship of CS activities.
  - Publish a strong commitment from the CS to offer services that contribute to the success of sponsors from industry/government.

Recommendations

- If the IEEE and Computer Society wish to remain predominantly an “Institution of Electrical and Electronics Engineers”, then:
  - In all conferences the CS sponsors, add a mandatory "Industrial track with 1 or 2 sessions"--too often industry solves problems that are pieces of engineering work and don't get due credit from academics--this way, we may increase motivation for submission and participation by industry.
  - Include more interdisciplinary activities (wide breadth) so industry/practitioners gain a maximum amount of knowledge per their investment.
  - Poster Sessions/Presentations from industry.

Recommendations

- If the IEEE and Computer Society wish to remain predominantly an “Institution of Electrical and Electronics Engineers”, then:
  - Organize conferences jointly with various federal/state/local government agencies in selected locations. Government agencies are often big buyers of technology, and their presence would indirectly make it attractive for industry representatives to network at such events.

Recommendations

- If the IEEE and Computer Society wish to remain predominantly an “Institution of Electrical and Electronics Engineers”, then:
  - Partner with universities to offer continuing/professional education courses that are branded/approved by IEEE. IEEE members should get some discount (e.g., 10-20%) for these course-- in turn, IEEE can offer its influence to increase attendance in the courses. This also fits well with current “career growth” activities sponsored by the IEEE.

    [http://www.ieee.org/organizations/eab/icet/]

Recommendations

- If the IEEE and Computer Society wish to remain predominantly an “Institution of Electrical and Electronics Engineers”, then:
  - Engage local chapters and sections worldwide to advertise and solicit local member input and participation regarding upcoming conferences and TC activities.

Conclusion

- It is my conclusion that the CS (and IEEE/ComSoc) has experienced a loss of government/industry/practitioner participation due partly to the perception that the IEEE/CS/ComSoc have become academic institutions. This can be seen in not only the representation in leadership (i.e. academic as opposed to government/industry), but also in Technical Committee/Technical Council leadership.
- Moreover, as government/industry has morphed into not only a global community, but also into a more product-centric focus, the value offered by IEEE/CS/ComSoc as perceived by government/industry has not kept pace with these changes.

Conclusion

- Increased academic participation is really not surprising considering academic volunteers are typically rewarded by their educational institutions for their volunteer efforts through tenure and advanced professorial positions. Since government/industry no longer values IEEE/CS/ComSoc activities, volunteerism is no longer rewarded as in the past.

Conclusion

- Further Research - Historical Perspective:
  - I believe the Computer Society should look back on its leadership over the past twenty-five years to establish a trend regarding government/industry/practitioner exodus.
  - This can then be correlated to business trends and Computer Society services to establish how and why government/industry/practitioners perceived less value in the Computer Society

Conclusion

- Further Research - Service Perspective:
  - The Computer Society should perform detailed surveys of conference content and attendees, current services, and prospective members to understand the value-added problem.
  - Use of a ***researcher-practitioner-user*** model could show current trends.
  - I do not believe aggressive marketing is a viable solution without first considering the perceived value IEEE/CS/ComSoc offers to government/industry/practitioners.

Acknowledgements

- Mr. Howard Salwen: Founded Proteon, Inc. in 1972 and was Chairman of its Board of Directors until it merged with Netrix Corp. in December of 1999. Proteon, also known as OpenRoute Networks, Inc. and NxNetworks, Inc. manufactured hardware and software for computer network communications. He has also served as Chairman of the Board of UltraNet Communications, Inc. UltraNet was acquired by RCN Corp. Mr. Salwen is a member of the Board of Directors of the Massachusetts Telecommunication Council and was its Chairman in 1996. He also serves on the Oversight Committees of The Museum of Science and the Fleet Boston Celebrity Series. Mr. Salwen is currently a Member-at-Large of the TCCC and is a member of the Standing Committee of the LCN conference.

Acknowledgements

- Mr. Ellis Nolley: Heads a strategic planning firm and positions technology businesses to target markets. Dynamic, results-focused business leader and developer with an M.S. Degree in Mathematics and over 20 years of broad-based experience in strategic planning, business development, marketing, product management and product development of information systems. Mr. Nolley served as Chair of the Twin Cities IEEE, Vice-Chair of Market Requirements & Ambassador for the ATM Forum, and General Chair of the IEEE Local Computer Network Conference. Noted speaker on market changes and technological trends in the information industry. Mr. Nolley is currently the Strategic Planning Chair of the TCCC and is very active in the IEEE Twin Cities Section.

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- Dr. Archan Misra: Currently employed as a Research Staff Member with the Pervasive Security and Networking Department at the IBM TJ Watson Research Center, Hawthorne, NY. Prior to joining IBM in March 2001, Archan spent 3 1/2 years at Telcordia Technologies (formerly called Bellcore), where he participated in several initiatives in the areas of mobility management protocols for IP-based cellular networks, congestion control, QoS architectures and autoconfiguration of heterogeneous networks. Dr. Misra is currently the Un-tethered Network Technology Chair for the TCCC.


Thank you!