ComSoc Industry Initiative and Best Practices

Abstract

This is an analytical report and strategy recommendation for ComSoc's relationship with the Industry.

Priyadarsan Patra (Intel Corp) and Ashutosh Dutta (AT&T)

{ppatra, ashutosh.dutta}@ieee.org

ComSoc Industry Initiative

1 BACKGROUND

Success of IEEE Sections and, in turn, of ComSoc, largely depends on the support of local and regional industries. We cannot expect such support unless these industries understand what is in there for them. Quite often an industry is not aware of what they may gain from association with IEEE/ComSoc. In other words, we must address the real needs of the Industry and help bridge them to the public good and the academia in order to advance common goals and foster and strengthen the symbiotic relationships.

As a matter of fact, Industry is one of the important vertices of the ComSoc Member Relations Golden Pentagon. Specifically, the charter of the IEEE for industry engagement comprises the following:

- Promote and inform the concept of IEEE as a progressive technical information provider to industry and its employees
- Work with industry to establish an understanding of their needs, and to demonstrate how IEEE can help address their needs
- Promote and inform the relevance of IEEE support in developing or changing technologies
- Encourage the establishment of leadership training within the regions and sections

To implement this charter, IEEE has had IROs (Industrial Relationship Office) and the MIRB (Marketing and Industry Relations Board). Within the past few years, both IEEE and the Communication Society have experimented with various ways to reengage with industry. To reengage the Communication Society with industry sectors, we have come up with a strategic framework based on the principles that embrace industry's interests and objectives while integrating IEEE and ComSoc's objectives.

With the above strategic framework in place, we (IEEE) have now taken steps to mobilize the team and implement the steps from the framework. We have developed an Industry-relations volunteer support portal (www.ieee-industry.org) where some of the manuals, industry focused messaging, and promotional fliers/ brochures can be found.

So then why do we need a renewed emphasis on Industry Initiative for ComSoc now? The reason can be found in the sharp decline in industry's share of IEEE Communication Society membership in recent years. Membership at end of October, 2014 stood at 48,541, down 6.4% from October 2013. IEEE membership is also down by 1.2%. Furthermore, interest and active participation from the Industry is steadily diminishing. Yet, there are bright spots, take for example IEEE CEDA which has succeeded by spurring heavy participation of Industry in membership and ~30% industry participation in ExCom. Therefore, we need to rethink our strategy for ComSoc and reengineer our mechanisms to effectively address the needs and interest of the Industry of today and tomorrow.

2 PAST ACTIVITIES

In the past the IRO was set up to facilitate industrial relations. Every Section is enabled to establish and maintain contacts and links with local industries, national societies and other organizations. IRO typically engages to:

- Facilitate development of tools and material to communicate with local industry and community

ComSoc Industry Initiative

- Recruit and promote volunteers from industry in Section and Chapter leadership
- Bridge the gap between IEEE members in local industry and academia by encouraging networking among both sectors.
- Promote seminars and other local events with industry and of industrial relevance
- Establish a rewarding and incentive program for contributing companies to promote IEEE in the region:

    o Company logo on IEEE Section news letters
    o Company logo on IEEE shirts, pens with IEEE logo
    o Appreciation gifts and certificates to be distributed during local events and conferences.
- Trips/visits for IEEE students to major local industrial companies such as; Oil & Gas, electrical & power, Telecom Operators, Media and vice versa.

Moreover, a number of resources and tools were created that should have direct, differential benefits to the Industry. These are summarized below.

2.1 INFORMATION RESOURCES

- ComSoc Tutorials Now, www.comsoc.org/career/tutorial-now

- Journal review, survey and tutorial papers, www.ieee.org/ieeexplore

- IEEE Spectrum & Spectrum Online, http://spectrum.ieee.org/

- IEEE Technology News, www.ieeeTechNews.com

2.2 PROFESSIONAL NETWORKING

- IEEE Consultants Network (IEEE-USA), www.ieeeusa.org/consultants

- IEEE memberNet, www.ieee.org/memberne

2.3 CAREER DEVELOPMENT & CONTINUING EDUCATION

- IEEE Job Site www.ieee.org/jobs

- Career Navigator (IEEE-USA), www.ieeeusa.org/careers

- Salary Benchmarking (IEEE-USA), www.ieeeusa.org/careers/salary

- IEEE eLearning Library (formerly ExpertNow) online tutorials: www.ieee.org/education_careers/education/elearning_library/index.html

- IEEE Mentoring Connection, www.ieee.org/mentoring

- Standards Tutorials www.ieee.org/education_careers/education/standards/tutorials.html

2.4 IEEE TECHNOLOGY NEWS (ITN)

- ITN to Present What's Hot, Interesting, Timely, Newsworthy; Of Interest To Practitioners

- Articles Will Be Condensed; In Layman's Language, Each With A Link To The Article In Xplore
- Online Only – On Website, With Alerts Emailed To Subscribers (Including Mobile Devices & RSS)

We have organized and hosted the Industry Day event each year from 2009-2011 as well as the recent Entrepreneurs Day and the Innovation Day. However, with the exception of the IEEE India Industry Day in Region 10, all the above were only in Region 1.

3 SWOT ANALYSIS

An initiative started by UK&RI Industry Relations in 2005 set out to understand the reasons for the decline of industry membership. The aim was to identify remedies - what we in IEEE should do either nationally, regionally or fundamentally to improve the attractiveness of IEEE to engineers in industry. They joined with the Region 8 industry relations team to influence its objective to 'help move IEEE closer to industry'. In UK&RI we invited leaders from industry/companies to join in a Senior Industry team. Eventually this led to a series of SWOT analyses, all of which was used within the UK &RI and also reported to Region 8 colleagues have them involved in responding to the observations from the SWOT analyses. Much of the following was shared at the IEEE Section Congress (?)

We performed a more recent SWOT analysis in our effort to determine how effective we are in addressing the needs of the industry. We now seek the commitment of IEEE globally to respond to the SWOT analysis.

3.1 STRENGTHS
- Accessible and Affordable to engineers
- Digital Library is a valuable technical source
- More relevant to research engineers than to commercial industry
- Is global initiator and owner of International Standards
- Opportunity to co-operate with other standards bodies to create cohesive international standards
- Forum and global initiator of discussion and debate on relevant issues
- Professional community to excite, motivate and energize action
- US-centricity provides access and awareness of US technology developments

3.2 WEAKNESSES
- Increasingly esoteric publications
- How to track down industry relevant content/journals?
- Insufficient industry relevant publications, particularly extracts
- Too much academic dominance
- Irrelevant to industry. Must rebalance towards industry
- Must increase industrial content into conferences (e.g. product development analyses and results, market research)

- IEEE Copyright requirement is draconian and not acceptable to
- Industry who will not relinquish to IEEE the IPR they have generated and paid for
- US centric

3.3 CHALLENGES AND THREATS

- Industry people are too busy; Industry employees have to be at workplace, not conferences
- Industry requires immediate/short-term returns
- Companies compete with each other. A close relationship with Company A can inhibit a relationship with its competitors
- Need to be fair to all competitors in an industry
- Scalable offerings that can serve all in an industry – a special challenge for emerging future technologies
- IEEE could become irrelevant to industry

We must find and attract excellent speakers on emerging future technologies in face of these challenges:

- Many speakers are needed
- S/C "Distinguished Lecturers" may not be the best fit
- Incenting volunteers
- Corporate competition limits the pool of speakers

3.4 OPPORTUNITIES

- To create professional & vocational qualification and recognition (e.g. in UK: engineering diplomas and certificates)
- Opportunity for individuals and companies to gain international recognition
- To provide industry relevant reviews of articles (c.f. Amazon reviews on books)
- To identify problems and issues to be tackled – need real industry oriented problems
- To provide/facilitate industry experience for students
- To encourage young people into engineering.
- Create IEEE Clubs to involve school children and interest them in EEE. Involve student chapters
- Create IEEE mentoring for professional development
- Proactively promote and make visible IEEE CPDs and educational software
- To create continuity in professional development for non-lifetime jobs of today
- To have IEEE sponsored industry lectures and visits to schools and universities
- To help develop engineers to compete with global competition threats (outsourcing, relocation)
- Recruit for IEEE actively on industry sites
- International nature of IEEE to enable global job opportunities for IEEE members
- Demonstrate that IEEE is special and desirable to join

3.5 CALL TO ACTIONS

- Building pools of capable new employees
- Building employee technical skills

ComSoc Industry Initiative

- Building employee leadership skills
- Building a technological "world view" for the future
- Building employee technical skills – in new areas of interest

Engage deep

- Better service to their IEEE-member employees
- Better access to IEEE-nonmember employees

Synergy between corporate and employee interests

- "Good projects" lead to corporate success
- "Good projects" lead to employee success
- "Good projects" often feature **emerging future technologies** that will enter a corporation's product space or offer new efficiencies to its operation. These examples of emerging future technologies present unique opportunity for IEEE:
  - "Smart grid"***** entering the power and energy space
  - "Computational biology" entering the pharmaceutical space
  - "Cloud computing"***** impacting the operation of many compute-reliant businesses
  - "SDN/NFV" impacting enterprise and operator's networks
 - Sensors for IoT, and Medical IoT

Importance of Startups market

Start-ups are an important component of the Industry and research data showing them as the drivers of net job gains during a depressed economy. Services Most Important to start-ups, as estimated by respondents of the 2014 survey, are given below and represent a subspace of opportunity for ComSoc:

- Access to software programmers/engineers (37.4%)

- Marketing/business development (35.5%)

- Patent development/Intellectual property protection & Standards (32.8%)

- Access to application developers (32.4%)

3.6 ANALYSIS OF COMSOC MEMBER SURVEY 2014

Importance and Satisfaction with Benefits
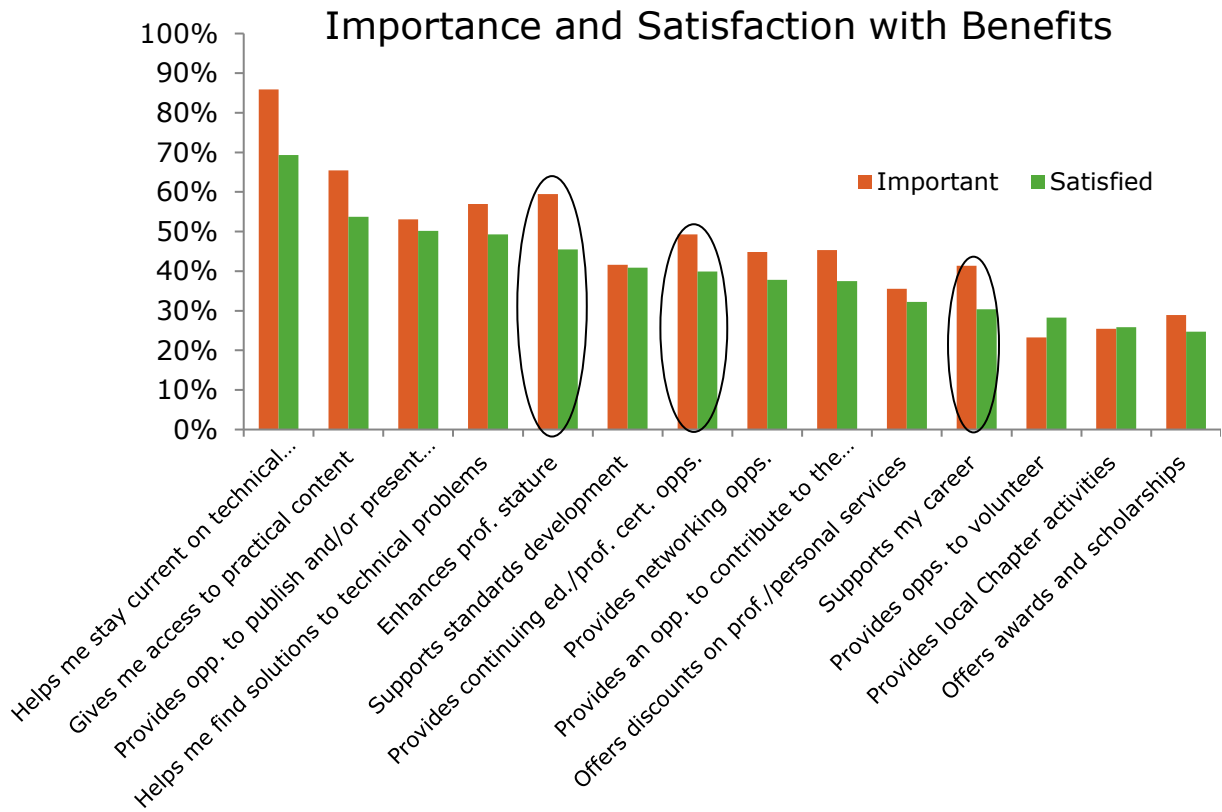
We have identified 3 different areas (see figure above), namely, 1) Supports my career, 2) Provides continuing education/proficiency, certification opportunities, and 3) Enhances professional stature, as major gaps that our society should address.

4 CURRENT PLAN OF ACTION

We must plan to enhance collaboration between industry and IEEE by connecting stakeholders, professionals and solution providers in a unique opportunity for fostering business relationships and thereby advancing technology.

4.1 INDUSTRY DAY EVENTS

IEEE Industry Day and Summit events provide a forum for industry and academic leaders along with technology providers to openly discuss relevant issues and potential solutions using emerging technologies. Such conferences provide unique opportunities to develop partnerships to connect solution providers with end-users and funding agencies. Participants learn how experts apply leading edge technology to implement solutions and create business opportunities. Targeted groups are to be provided with opportunities to present their company, university, or agency needs or available technologies, to network with potential partners or employers, and to develop meaningful partnerships.

4.2 PROVIDING IEEE AS A RECRUITMENT VEHICLE

IEEE and its many local sections and societies give employees the environment they need to develop their technical skills further because they are among some of the top technical leaders in industry today. IEEE has many student branches located around the world. When many young

technical professionals graduate, they join IEEE programs designed to help them look for work with quality organizations like yours. IEEE Job Fairs are a great way to find and recruit these candidates before your competitors do.

A company can recruit through the IEEE Job Site, post job listings and search through senior-level managers, top engineers and technology experts in every sector. Companies will find pre-qualified candidates with resumes that match your organizational needs and make job offers to these top-notch candidates before your competitors even know about them. IEEE provides global networks and opportunities that would benefit any technical professional, no matter where they are located.

5 SHORT TERM MILESTONES

- Planned Webinars around Industry Day Tools with Chapter Chairs and Section Chairs.
- The India Council Communication Society and Bangalore Section have started taking many initiatives to engage with the industry supported with related activities in the area of Software Define Networking, Big Data, and Smart Devices. They organized TechTalks at academic institutions by industry experts. There are also efforts underway to include industry professionals as part of the section executive committee. The India council is also increasingly focusing on ComSoc sponsored conferences across India.
- In order to further strengthen the industry relationship, a few IEEE leader representatives recently visited India and made contacts with many key industry leaders at Hyderabad and Mumbai.
- In order to engage industry members with high value technology, the IEEE Communication Society plans to a have high impact one day summit in emerging technology areas (e.g. SDN/NFV, 5G, IoT, and Cybersecurity). Currently, a high impact 5G Summit is being planned at Princeton University on May 26, 2015.

5.1 STARTUP ACTION POINTS

- Create a Protocol for Start-up of the month (e.g., logistics)

- Propose a Committee of volunteers focused on Startup/Entrepreneur

- Organize Startup Workshop at chapter level

- Actively participate in Startup Event in New York (Tech Day), and California, Boston & England

- Get Involved in New Jersey Technology Council to get a list of startups

- eNEWS – Industry News on Startup

- Observe at what other societies are doing

- Computer Society is starting startup conference

- Have reached out to PES regarding their way of industry engagement

5.2 PLAN FOR CHAPTER AND SECTION TRAINING

- We have a framework for Industry Engagement that was shared with the chapter chairs

during Globecom 2014, we will conduct webinars to engage the chapter chairs for implementation

5.3 INTEGRATE IEEE AND COMSOC OBJECTIVES

We need to integrate the three common objectives by partnering to leverage a common effort 'umbrella':

Member Development

- Increasing technical proficiency opportunities

- Improving 'soft' and leadership skills

- Providing professional recognition

- Encouraging service to the public

Market Development

- Expanding IEEE brand awareness in technical fields of interest

- Recruiting and retaining members

Volunteer Development

- Recruiting and retaining talented individuals to lead IEEE

- Fulfilling IEEE's mission to the public

5.4 IMPLEMENTATION OF THE IDEAS

Some of the plans have been implemented and others will be implemented by chapter chairs and various sub-committees formed out of MALs.

6 LONG TERM OBJECTIVES

The sorts of questions we should be asking ourselves are:
- How does IEEE contribute to shareholder value?

- How are you ensuring a pipeline of engineers to enter into the Industry?

- How does IEEE improve employee skills?

- How does collaboration with IEEE advance the mission, goals, and values of the industry?

- How do we use an industry perspective in packaging engagement opportunities with IEEE?

- How would industry measure success?

Some of the recommendations and actions are:

ComSoc Industry Initiative

- The IEEE Communication Society is exploring potential ways to increase membership, for example by instituting a Member-Get-a-Member (MGM) Program.
- ComSoc has introduced new courses in emerging areas such as 5G, Big Data, and Mobility.
- MIRB plans to hold virtual job fairs at many IEEE sponsored conferences. MIRB also plans to sign an MOU with an interested Industry partner to create an award sponsored by a specific industry.
- The IEEE Communication Society plans to hold "Future Skillset Workshops" at a number of universities. This is an opportunity for collaboration among industry, the academic community, and IEEE.
- According to the 2014 member survey results compiled by ComSoc's Director of Marketing 30.8 percent of ComSoc members are/have been engaged in a startup, and 30.5 percent plan to hire within the next 12 months. Hence, it is very important that the IEEE Communication Society reach out to the start-up community. There are a few proposals that are being considered such as to name a start-up of the month, and publishing industry news on the startup.
- The industry relation committee plans to liaise with ICEC (Industry Content and Exhibition Committee) and collect feedback for implementing industry content appropriately into a pilot set of conferences.

7   IMPLEMENTATION PLANS

The implementation plan consists of several components as outlined in the list below.

Tools & Resources

- Developing an Industry-relations Volunteer support portal, and manual

- Developing Industry-focused messaging, and promotional fliers / brochures

Peer-to-Peer Collaboration

- Creating a committee charter

- Dedicated e-mail alias, "Industry Relations Alert-All"

- Assembling the industry relations Volunteer team worldwide

- Establishing virtual collaboration tools, and scheduling periodic webcasts

Reporting / Evaluation

- Developing a strategy / operations progress report, and disseminating periodically to the entire Industry-relations team worldwide

Marketing to Industry

- Partner with Industry on their Corporate Social Responsibility mandate. Allow Industry to leverage the IEEE Humanitarian Technology Network (HTN) as a multimedia, interactive repository of IEEE member humanitarian efforts around the world. HTN facilitates communication between IEEE members who are involved in these remarkable humanitarian accomplishments and interested organizations, foundations and the public (see www.ieeehtn.org)

ComSoc Industry Initiative

- IEEE as a friend in a company's global brand development efforts: Gaining a competitive edge on innovation and developing your organization's brand is easier when you are involved with a global community like IEEE. By using IEEE's many marketing, advertising and sponsorship activities, promoting advancements globally couldn't be easier. Developing a relationship with IEEE helps build global awareness about the quality and advancements of your organization. IEEE offers various opportunities and platforms for technical organizations to communicate and market themselves through various conferences and events worldwide.
- Market to company to broadcast their message through IEEE.tv and IEEE Spectrum Radio.

Section Level actions: The following actions should be driven at section-level in every region.

Industry visits (One company at a time)
Conducted by the Regional Director (or VP?) in conjunction with Section representatives to learn of industry's needs as well as to describe COMSOC programs and benefits. Create rapport through employee who is also ComSoc member.

Industry Breakfasts/Luncheons
Similar to Industry Visits except many different companies are "hosted" at one time by ComSoc at suitable meeting location for a breakfast or luncheon.

Industry Advisory Group
A group comprised of 5-7 top management persons from local companies to advise the section of programs and activities for the section to consider.

Industry Appreciation Awards
A Section can utilize this award to recognize companies and universities in their area for their outstanding support and contributions to the Section.

Industry Letters
Sections can help its officers receive recognition at work by having the Regional Director (or VP?) send letters to their employers commending the officers for their accomplishments in COMSOC.

Industry Day
A program to encourage companies to permit COMSOC student members to be with one of their engineers for a day to observe engineers in the field.

Industry Support Opportunities
List and circulate what some companies do to help promote COMSOC activities.

VIP Subscriptions
Complimentary subscriptions to ComSoc magazine(s) available for corporate management who are non-COMSOC members.

Visit Reports
Reports issued on meetings with industry summarizing their needs.

Section Guests
Invite on ore more industry leaders to be a guest of the section at each meeting. Assign an executive committee member to be an escort.

Managers Night
Invite several engineering managers to a section meeting.

8   INDUSTRY OUTREACH BOARD P&Ps

8.1 Scope (from Bylaws, *verbatim*)

This Board is responsible for assuring a comprehensive and cost-effective outreach program of Society products and services to industry and governmental communities. It is also responsible for developing liaisons with communications and networking related enterprises to promote ComSoc products and services and for attracting industry and government leaders into ComSoc's volunteer community.

Members include a representative from each of the following: the Technical Committees Board, the Educational Services Board, the PUB-C, the CON-C, the Standardization Programs Development Board, the Industry Communities Board, and the MGA-C. In addition, up to four Members-at-Large may be appointed by the Director to represent external industrial and governmental interests.

8.2 Objectives

The Board shall establish policies and set strategic directions for all of ComSoc's outreach to industry and governmental communities. The board shall engage with chapters and with the Industry Communities Board to identify and confirm products and services of interest to industry and governmental communities and, following the offering of such products and services, shall coordinate with ComSoc marketing and membership to continue engaging consumers via membership and/or additional offerings of products and services. The Board shall also address the needs of non-member professionals when expanding and enhancing current offerings and initiating new ones, to the extent that these professionals can be viewed as potential new ComSoc members or consumers of additional ComSoc offerings.

The Industry Outreach Board shall identify and manage mutually beneficial relationships with related industry associations, which are defined as national or international industry and trade associations within ComSoc's scope (e.g., communications and networking) with the main focus of providing business value to members. The typical members of such a related industry association are companies or practitioners who normally would not participate in academic conferences, publish in archival journals, or consider themselves researchers. Examples of Related Industry Associations include, but are not limited to, the Pacific Telecommunications Council (PTC) and the OpenFog Consortium (OpenFog.)

8.3 Organizational Structure

The Board reports to the Industry and Standards Activities Council.

Board membership and term limits shall be as defined in the ComSoc Bylaws.

Terms of all Board members may be renewed for one or two additional years, based on mutual agreement of the Industry Outreach Director and the Vice President for Industry and Standards Activities.

A member of this Board who serves as representative of another Board is appointed in consultation with that Board's Chair/Director. Members are appointed to their position drawing upon a field of candidates from the membership at large, with special attention given to individuals who have special expertise, have previously served in related capacities, or have held positions of responsibility within the Society.

8.4 Activities and Responsibilities

8.4.1 Director
Duties of the Director include, but are not limited to, the following:

• Chairing the Board

• Representing the Board on the Board of Governors and on the Industry and Standards Activities Council

• Providing guidance and direction to Board members in the conduct of their responsibilities

• Coordinating with ComSoc Staff in the conduct of his/her responsibilities

• Appointing a Board Vice Chair chosen among the Board voting members

• As per the Bylaws, may appoint additional non-voting members as needed

• May assume leadership for specific projects, as delegated by the Board

8.4.2 Board
Responsibilities of the Board shall be as specified in the Bylaws and the Industry and Standards Activities Council P&Ps.

8.5 Transaction of Business
All Board business shall be conducted in compliance with Clause 2.0 of ComSoc's P&Ps.

8.5.1 Meetings
The Board shall hold at least two in-person regular meetings per year at ICC and GLOBECOM (with the possibility of remote participation by dial-in). Other meetings (in-person or by teleconference) may be called on an as-needed basis.

Regular and special Board meetings (in-person or teleconference) shall be called on as specified in the Bylaws and in Clause 2.0 of ComSoc's P&Ps.

8.5.2 Other
It is expected that, whenever possible, target completion dates shall be set, and that the responsible individual shall prepare periodic update reports to the Director and (where appropriate) the VP of Industry and Standards Activities. As needed, progress will be reported to the Operating Committee (OpCom) or Board of Governors (BoG) when they meet. Such reports shall be presented by the Director or by the VP of Industry and Standards Activities.

For specific activities of sustained interest, the Board may decide to create dedicated Working Groups that work on specific topics and report to the Board. The Working Group chairs shall be chosen from among the voting members of the Board.

The Director and the Board must work with and keep headquarters staff informed of their activities; particularly, the Society Executive Director or his/her designated proxy. Each report prepared by members for Board of Governors meetings shall be copied to headquarters staff.

8.6 Activities and Programs Managed by the Board

The activities, programs, and related policies managed by the Board shall be defined by the Board.

8.7 Approval of P&Ps

All changes to these Board P&Ps shall be approved by the Board and by the Industry and Standards Activities Council before taking effect.