IEEE Computer Society Strategic Plan 9

2018

2018 Planning Committee of the IEEE Computer Society

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I.   Introduction:

This document presents *Strategic Plan SP9 for the IEEE Computer Society—the Community of Technology Leaders.* The Computer Society is the trusted information, networking, and career-development source for *a global community of technology leaders that includes researchers, educators, software engineers, IT professionals, employers, and students.*

The Computer Society Planning Committee develops a new strategic plan every three years. Strategic Plan SP9 is intended to cover the period from 2018 to 2020.

Prior to the formation of SP9, SP8 was developed by the 2014 Planning Committee under the leadership of 2014 President-Elect Tom Conte. The Computer Society 2022 Report, developed under the leadership of 2013 President-Elect Dejan S. Milojicic, has been the technical foundation of SP8 and SP9.

SP9 aims to tackle key challenges that are critical for the future of IEEE Computer Society taking into consideration financial sustainability, the advancement of electronic publication and improvement of satisfaction of member.

1. Operate as the leading professional organization in computing technology.
2. Create a sustainable financial model for the Computer Society.
3. Increase membership and satisfaction of members in Computer Society.
4. Increase diversity across all CS activities.
5. Revitalize volunteer activities considering incentives based on the appreciation.
6. Be the leading society in all aspects related to computing technology for advancing research, innovation, technologies, and professional networking.
7. Organize the leading conferences, meetings and events covering the entire spectrum of Computer Society disciplines.
8. Offer the leading journals, magazines, and online platform contents for both industry and academia.
9. Develop leading educational contents and disseminate to international professionals and non-professional including K-12.
10. Be the leading organization for Computing Technology Standards.
11. Collaborate with other IEEE societies and international sister societies synergistically.

2017 President-Elect Hironori Kasahara served as the Chair of the Planning Committee and directed the SP9 process with advice from 2017 President Jean-Luc Gaudiot and 2016 President Roger Fujii. The SP9 Committee included members of the 2017 Executive Committee.

The SP9 Committee developed strategic goals for the 2018-2020 considering the following factors:

- Strategic goals of SP8 should be adopted as part of SP9.
- Progress toward SP9 goals should be quantitatively measurable as SP8.
- Criteria for success should be expressed in terms of the metrics for each SP9 goal.
- SP9 implementation plans are to be determined by the respective Vice Presidents of Program Boards and by the President for the three-year lifetime of SP9.
- The specific technical topics covered by SP9 should refer the Computer Society 2022 Reports.

The overall operational model for SP9 is depicted in the flowchart in Figure 1, which is gleaned from SP8.

Strategies

All criteria must be based on measurable metrics

Goal Metrics and their Criteria for Success

Action Plan
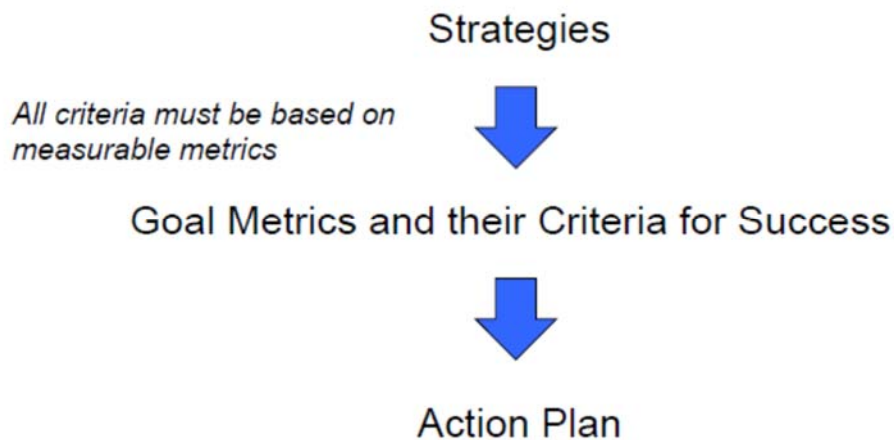
Figure 1: Overall operational model of SP9 development process.

The Committee determined the following SP9 goals:

SP9.1 Be the Leading Society in Computing for Technical and Conference Activities [T&C] (goal leader: Hausi Müller, 2017 VP of T&C)

SP9.2 Be the Leading Society in Computing for Next-Generation Publications (goal leader: Greg Byrd, 2017 VP of Publications)

SP9.3 Support and Deliver High-quality Professional and Educational Training and Certifications (goal leader: Andy Chen, 2017 VP of PEAB)

SP9.4 Define and Oversee New Tactics for Sustainable Membership Numbers (goal leader: Cecilia Metra, 2017 VP of MGA and Forrest Shull, 2018 VP of MGA)

SP9.5 Be the Leading Society in Computing for Research Engineers/Scientists (goal leader: Forrest Shull, 2017 CS Secretary)

SP9.6 Provide a Proactive Approach and Environment to Standards Development (goal leader: Jon Rosdahl, 2017 VP of SAB)

SP9.7: Be the Leading Society in Computing for Ethics (goal leader: Greg Adamson, 2017 IEEE TAB Chair for Ethics in Design)

SP9.8 Evolve the Computer Society's Organizational Structure to Effectively Meet Current and Future Challenges (goal leader: Hironori Kasahara, 2017 President-Elect)

The sections that follow document the sub-goals, their associated metrics, and the criteria for Success for each of the SP9 goals, where appropriate, proposed action plans, milestones, and deliverables are also enunciated.

II.   Strategic Plan (SP9) Goals

A.   SP9.1: Be the Leading Society in Computing for Technical and Conference Activities [T&C]

Computer Society hosts many of the computing world's premier technical conferences. In hundreds of conferences, workshops, symposia, meetings and events, computing's brightest minds share ideas, discover new technologies, and build valuable professional relationships. These innovative forums facilitate the identification, creation, capture and exchange of peer-reviewed engineering, scientific and technological knowledge for the benefit of our members, the profession, and humanity. The goal is to ensure that Computer Society is the leading society in all aspects related to computing for advancing research, innovation, technologies, and professional networking.

1. Goal SP9.1.1: Support Computer Society's sustainable financial model

Computer Society's financial sustainability model aims to mitigate the financial risks of the society due to declining revenues. The goal for the T&C Board is to increase conference revenue to support digital publications including open access and thereby contribute to Computer Society's financial sustainability model. Track characteristic financial measures to perform a variety cost-effective and longitudinal analyses of the T&C conference portfolio. Develop a strategic plan to dedicate resources for conferences that are high-quality and financially successful and reduce resources for conferences that are of lower quality and financially underperforming.

Metric(s) and Criteria for Success:
- Increase conference revenue by $250K per year (in 2019)
- Decrease Technical Committee support by $250K per year (in 2019)
- Increase use of available Computer Society services for conferences that are 100% financially sponsored (+30% by 2020)
- Increase use of available Computer Society services for conferences that are less than 100% financially sponsored (+10% by 2020)
- Increase federation and mergers of Computer Society sponsored conferences (+5% by 2020)

Year 1:
- Increase conference revenue to support digital publications including open access and thereby contribute to Computer Society's financial sustainability model
- Update the T&C Handbooks to raise the Computer Society's Conference Admin Fee Sliding Scale Threshold to $250K for conference budgets approved on or after July 1, 2018 and all conferences occurring in 2019 or later

A.   **SP9.1: Be the Leading Society in Computing for Technical and Conference Activities [T&C](...cont.)**

- Update the T&C Handbooks to remove the Computer Society's Technical Committees (TC) Admin Fee Allocation of 17.5% starting with 2018 conference closings
- Strongly encourage 100% Computer Society sponsored conferences to use available Computer Society services
- Encourage conferences to enlist the help of their Technical Committee(s) to federate/merge with other conferences and/or expand fields of interest to minimize conference expenses and increase conference surplus

Year 2:
- Increase conference revenue to support digital publications including open access and thereby contribute to Computer Society's financial sustainability model
- Accrue financial benefits of raising the Computer Society's Conference Admin Fee Sliding Scale Threshold to $250K for all conferences occurring in 2019 or later
- Accrue financial benefits of removing the Computer Society's Technical Committees (TC) Admin Fee Allocation of 17.5% starting with 2018 conference closings
- Strongly encourage 100% Computer Society sponsored conferences to use available Computer Society services
- Encourage conferences to enlist the help of their Technical Committee(s) to federate/merge with other conferences and/or expand fields of interest to minimize conference expenses and increase conference surplus

Year 3:
- Increase conference revenue to support digital publications including open access and thereby contribute to Computer Society's financial sustainability model
- Assess the impact of raising the Computer Society's Conference Admin Fee Sliding Scale Threshold to $250K for all conferences
- Assess the impact of removing the Computer Society's Technical Committees (TC) Admin Fee Allocation of 17.5% particularly in relation to the Conference Surplus Distribution Model
- Strongly encourage 100% Computer Society sponsored conferences to use available Computer Society services
- Encourage conferences to enlist the help of their Technical Committee(s) to federate/merge with other conferences and/or expand fields of interest to minimize conference expenses and increase conference surplus

A. **SP9.1: Be the Leading Society in Computing for Technical and Conference Activities [T&C](. . .cont.)**

2. *Goal SP9.1.2: Expand the Computer Society's portfolio of high-quality conferences*

Computer Society hosts over 230 financially and technically co-sponsored conferences. The goal is to increase the number and size of high-quality conferences. Track characteristic measures to perform a variety cost-effective and longitudinal analyses of the T&C conference portfolio. Develop a strategic plan to dedicate resources to the most successful high-quality conferences.

Metric(s) and Criteria for Success:
- Increase portfolio of all high-quality conferences (+15% by 2020)
- Increase portfolio of financially (co-)sponsored conferences (+10% by 2020)
- Increase portfolio of technically co-sponsored conferences (+10% by 2020)
- Define longitudinal measures for T&C portfolio review
- Perform longitudinal T&C portfolio review
- Increase diversity across all technical and conference activities

Year 1:
- Add new high-quality financially (co-)sponsored conferences
- Add new high-quality technically co-sponsored conferences
- Transition technically co-sponsored conferences to become financially (co-)sponsored conferences
- Perform longitudinal T&C portfolio review

Year 2:
- Add new high-quality financially (co-)sponsored conferences
- Add new high-quality technically co-sponsored conferences
- Transition technically co-sponsored conferences to become financially (co-)sponsored conferences
- Perform longitudinal T&C portfolio review

A. **SP9.1: Be the Leading Society in Computing for Technical and Conference Activities [T&C](...cont.)**

Year 3:
- Add new high-quality financially (co-)sponsored conferences
- Add new high-quality technically co-sponsored conferences
- Transition technically co-sponsored conferences to become financially (co-)sponsored conferences
- Perform longitudinal T&C portfolio review

3. *Goal SP9.1.3: Diversify the engagement of Computer Society technical committee members*

Computer Society hosts many of the computing world's premier technical conferences. In hundreds of conferences, workshops, symposia, meetings and events, computing's brightest minds share ideas, discover new technologies, and build valuable professional relationships. These innovative forums facilitate the identification, creation, capture and exchange of peer-reviewed engineering, scientific and technological knowledge for the benefit of our members, the profession, and humanity. The goal is to ensure that Computer Society is the leading society in all aspects related to computing for advancing research, innovation, technologies, and professional networking.

Metric(s) and Criteria for Success:
- Diversify the engagement of TC members to increase member satisfaction
- Increase opportunities for TC members to contribute contents to Computer Society
- Encourage members to curate technical knowledge and resources for specific topics and domains
- Increase diversity across all technical and conference activities

Year 1:
- Recruit TC volunteers to contribute curated contents
- Package related contents for end-users
- Track TC participation

Year 2:
- Recruit TC volunteers to contribute curated contents
- Package related contents for end-users
- Track TC participation

Year 3:
- Recruit TC volunteers to contribute curated contents
- Package related contents for end-users
- Track TC participation

A. **SP9.1: Be the Leading Society in Computing for Technical and Conference Activities [T&C](. . .cont.)**

4. *Goal SP9.1.4: Increase industrial engagement in Computer Society conferences*

Computer Society conferences are continuously challenged in attracting participants from industry. The goal is to develop methods, techniques and incentives to increase industrial engagement that can be applied across the entire Computer Society conference portfolio. Identifying best practices and disseminating the findings to all Computer Society conferences through various avenues including webinars

Metric(s) and Criteria for Success:
- Increase industry participation for selected financially co-sponsored conferences (+10% by 2020)
- Track industry participation for all financially co-sponsored conferences
- Identify best practices and disseminate findings to financially co-sponsored conferences
- Increase diversity across all technical and conference activities

Year 1:
- Identify best practices for industry engagement in financially co-sponsored conferences
- Disseminate best practice findings to financially co-sponsored conferences
- Track industry participation for all financially co-sponsored conferences
- Increase presentations from industry at selected financially co-sponsored conferences

Year 2:
- Track industry participation for all financially co-sponsored conferences
- Increase presentations from industry at selected financially co-sponsored conferences

Year 3:
- Track industry participation for all financially co-sponsored conferences
- Increase presentations from industry at selected financially co-sponsored conferences
- Re-assess best practices for industry engagement in financially co-sponsored conferences

A. **SP9.1: Be the Leading Society in Computing for Technical and Conference Activities [T&C](. . .cont.)**

5. *Goal SP9.1.5: Expand synergy and collaboration between Computer Society's T&C and Pubs boards*

Computer Society recognizes that there is ample opportunity for synergy and collaboration between its Pubs and T&C Boards. The main objective is to facilitate technically and financially successful and sustainable publication and presentation models. One of the key goal is to align high-quality conferences with high-quality transactions or journals. Realize J1C2 or J1C2J3 for selected high-quality conferences. Realize C1J2 by guaranteeing space in each Computer Society transactions for the extended best papers from selected high-quality conferences. Track characteristic technical and financial measures to perform cost-effective and longitudinal analyses of these innovative publication and presentation models

Metric(s) and Criteria for Success:
- Increase number of conferences employing J1C2 publication-presentation model (by 5% by 2020)
- Increase number of conferences employing C1J2 presentation-publication model (by 5% by 2020)
- Track characteristic technical and financial measures to perform longitudinal analyses
- Increase diversity across all technical and conference activities

Year 1:
- Effect alignment of high-quality conferences with high-quality transactions
- Document short-term and long-term financial implications of J1C1
- Define characteristic technical and financial measures to perform longitudinal analyses
- Realize J1C2 publication-presentation model for selected high-quality conferences
- Expand C1J2 by guaranteeing space in CS transactions for selected high quality conferences

Year 2:
- Realize J1C2 publication-presentation model for selected high-quality conferences
- Expand C1J2 by guaranteeing space CS transactions for selected high quality conferences
- Track characteristic technical and financial measures to perform cost-effective and longitudinal analyses

A. **SP9.1: Be the Leading Society in Computing for Technical and Conference Activities [T&C](. . .cont.)**

Year 3:
- Realize J1C2 publication-presentation model for selected high-quality conferences
- Expand C1J2 by guaranteeing space in CS transactions for selected high quality conferences
- Track characteristic technical and financial measures to perform cost-effective and longitudinal analyses

6. *Goal SP9.1.6: Recognize Computer Society volunteers and Technical Committees for leadership*

Computer Society's future critically depends on the leadership of its volunteers, the vitality of its Technical Committees, and the grooming of future leaders. The goal is to recognize outstanding, innovative, synergistic or sustained leadership with Computer Society awards and certificates.

Metric(s) and Criteria for Success:
- Actively groom future T&C leadership including Technical Committee Chairs
- Identify and recognize excellent leadership within T&C and Technical Committees
- Facilitate interaction and generate synergy between grassroots & executive/staff
- Increase diversity across all technical and conference activities

Year 1:
- Actively groom future T&C leadership including Technical Committee Chairs
- Identify and recognize excellent leadership within T&C and Technical Committees
- Facilitate interaction and generate synergy between grassroots & executive/staff

Year 2:
- Actively groom future T&C leadership including Technical Committee Chairs
- Identify and recognize excellent leadership within T&C and Technical Committees
- Facilitate interaction and generate synergy between grassroots & executive/staff

A.   SP9.1: Be the Leading Society in Computing for Technical and Conference Activities [T&C](...cont.)

Year 3:
- Actively groom future T&C leadership including Technical Committee Chairs
- Identify and recognize excellent leadership within T&C and Technical Committees
- Facilitate interaction and generate synergy between grassroots & executive/staff

7. *Goal SP9.1.7: Be the leading society in emerging computing topics, technologies and applications*

Computer Society's future critically depends on embracing emerging topics, technologies and applications. The goal is to recognize opportunities that could have lasting impact and accrue benefits for Computer Society and its members. Develop a strategy to pursue opportunities proactively and expeditiously. Specifically embrace applications to encourage industrial participation. Track characteristic technical and financial measures to perform cost-effective, longitudinal analyses of implemented initiatives.

Metric(s) and Criteria for Success:
- Provide T&C pro-active support for conferences on emerging topics, technologies and applications
- Provide T&C pro-active support for conferences with no immediate home TC
- Provide T&C pro-active support diversity and agility across T&C activities
- Provide T&C pro-active support for interdisciplinary and inter-society T&C activities
- Track characteristic technical and financial measures to perform longitudinal analyses for T&C activities in emerging topics, technologies and applications
- Track involvement of TCs and STCs in IEEE Future Directions Initiatives
- Increase diversity across all technical and conference activities

Year 1:
- Define T&C pro-active support for conferences on emerging topics, technologies and applications
- Define T&C pro-active support for conferences with no immediate home TC
- Define T&C pro-active support diversity and agility across T&C activities
- Provide T&C pro-active support for interdisciplinary and inter-society T&C activities
- Define characteristic technical and financial measures to perform longitudinal analyses for T&C activities in emerging topics, technologies and applications
- Define pro-active support for aligning TCs and IEEE Future Directions

A. **SP9.1: Be the Leading Society in Computing for Technical and Conference Activities [T&C](...cont.)**

Year 2:
- Provide T&C pro-active support for conferences on emerging topics, technologies and applications
- Provide T&C pro-active support for conferences with no immediate home TC
- Provide T&C pro-active support diversity and agility across T&C activities
- Provide T&C pro-active support for interdisciplinary and inter-society T&C activities
- Track characteristic technical and financial measures to perform longitudinal analyses for T&C activities in emerging topics, technologies and applications
- Provide pro-active support for aligning TCs and IEEE Future Directions

Year 3:
- Provide T&C pro-active support for conferences on emerging topics, technologies and applications
- Provide T&C pro-active support for conferences with no immediate home TC
- Provide T&C pro-active support diversity and agility across T&C activities
- Provide T&C pro-active support for interdisciplinary and inter-society T&C activities
- Track characteristic technical and financial measures to perform longitudinal analyses for T&C activities in emerging topics, technologies and applications
- Assess best practices of pro-active T&C support for emerging topics, technologies and applications
- Provide pro-active support for aligning TCs and IEEE Future Directions

II. Strategic Plan (SP9) Goals (. . . cont.)

B. **SP9.2. Be the Leading Society in Computing for Next-Generation Publications**

1. _Goal SP9.2.1: Increase the readership, authorship, and impact of individual publications_

The Computer Society will increase the technical community served by our existing journal and magazine publications. This means increasing readership, authorship, number of articles, and impact of individual publications. Increased readership, in the form of digital library downloads, is an important source of revenue to offset the cost of publications, especially in the face of declining individual subscriptions. Increase in articles (pages) should be encouraged only if an increase in downloads justifies the cost.

Improved search of digital content and personalized content delivery are important enabling technologies that should increase readership by leading members to relevant and high-quality content.

Publication editorial boards will also be encouraged to make explicit investments in social media and other outreach to increase readership. Best practices will be shared among publications.

Collaborations between top-tier conferences and publications will be expanded, using journal-first (J1C2, M1C2) and other novel publication models. (Also see SP9.1.4 and SP9.7.1)

Metric(s):
- Impact factor
- Number of digital library downloads
- Number of conference-journal/magazine co-publication agreements

Criteria for Success:
- 25% increase in downloads by 2020
- 25% increase in impact factor
- Two new conference-journal/magazine agreements per year

B. **SP9.2. Be the Leading Society in Computing for Next-Generation Publications (. . . cont.)**

Year 1:
- Report on strategies to increase readership (downloads) and submissions across portfolio
- Create plan for improved search and personalized content delivery
  - Goal: capabilities should be available to members who access CS content via institutional subscriptions to IEEE Xplore, as well as subscribers to the CS Digital Library and individual publications.
- Finalize policies that enable collaboration between conferences and publications, including models that encourage mutual financial benefits
- Publicize existing conference/pub collaborations, in order to socialize the benefits and generate interest
- Add two new conference/pub collaborations

Year 2:
- Begin implementation of improved search and personalized content
- Add two new conference/pub collaborations

Year 3:
- End implementation of improved search and personalized content
- Roll out improved search and personalized content to members
- Add two new conference/pub collaborations

2. *Goal SP9.2.2: Expand impact to new fields*

The Computer Society will adjust its publication portfolio to incorporate new and emerging computing technologies. This will primarily be done by adjusting scope and outreach of existing titles. New publications will be considered as appropriate, but will not be the primary goal. Special issues are a good mechanism for assessing the need for a new publication or expansion in scope.

The Computer Society will create digital portals that provide curated content related to new and emerging technology areas. Each portal will provide links to content within CS publications and conferences, and potentially content from other IEEE societies. The portal content will be updated frequently, and the selection of content will be automated as much as possible to minimize volunteer and staff hours. The policies and procedures regarding portals will be developed in conjunction with the Technical and Conference Activities Board.

B.   SP9.2. Be the Leading Society in Computing for Next-Generation Publications (. . . cont.)

Metric(s):
- Number of new columns or other features devoted to emerging topics
- Number of special issues devoted to emerging topics

Criteria for Success:
- One special issue per year in each publication devoted to new area of relevance to that publication
- Two new magazine columns or departments devoted to new areas

Year 1:
- Review of scope for 1/3 of publication portfolio
- Implement digital portal platform, with ability to customize to new technology areas
- Establish procedures for the creation, curation, maintenance, and decommissioning of digital portals

Year 2:
- Review of scope for 1/3 of publication portfolio

Year 3:
- Review of scope for 1/3 of publication portfolio

3.   Goal SP9.2.3: Raise quality of publications by using new technologies

The Computer Society will invest in new technologies to enhance the content delivered by publications. Additional content, such as multimedia (video, audio, presentations), data, algorithms, and software packages, may be associated with and integrated with articles. Procedures and policies for peer review of such materials will be developed.

Metric(s):
- Number of articles that include enhanced content

Criteria for Success:
- 10% of new articles published in 2020 have enhanced content

B. **SP9.2. Be the Leading Society in Computing for Next-Generation Publications (. . . cont.)**

Year 1:
- Report on mechanisms for delivering enhanced content with published articles (e.g., Code Ocean, data portal)
- Establish policies regarding peer review of enhanced content
- Implement mechanisms to integrate enhanced content with published articles in CS Digital Library

Year 2:
- Implement mechanisms to integrate enhanced content with published articles for all digital delivery channels (e.g., myCS)
- Encourage authors to include enhanced content with submissions

Year 3:
- Assess the availability and use of enhanced content with published articles

4. *Goal SP9.2.4: Enhance the reach to new geographic and demographic markets*

The Computer Society must continue expanding its global reach, and its publications must support a diverse and global technical community. Without sacrificing quality, publications should encourage authors and readers from all parts of the world and from non-traditional contributors. Publications should also take steps to highlight the geographical diversity of contributors, in order to encourage worldwide submissions and readership.

Additional efforts will be made to increase readership, authorship, and participation from industry members. (Also see SP9.5.4)

Metric(s):
- Number of submissions from Regions 8-10
- Number of authors from Regions 8-10
- Number of features that encourage and/or highlight contributions from Regions 8-10

Criteria for Success:
- 25% increase in submissions from Regions 8-10
- 25% increase in authors from Regions 8-10
- Three features that encourage and/or highlight contributions from Regions 8-10 each year

B. **SP9.2. Be the Leading Society in Computing for Next-Generation Publications (. . . cont.)**

Year 1:
- Report on strategies to increase geographic and demographic diversity

Year 2:
- Implement strategies and measure impact

Year 3:
- Implement strategies and measure impact

5. *Goal SP9.2.5: Improve the financial sustainability of the publications portfolio*

The financial contribution of publications has decreased in recent years. Revenue has decreased, and expenses have been difficult to manage. Many changes have occurred in the publications landscape – e.g., increased digital access, open access journals, and decreasing individual subscriptions. While communities still desire to have their own publications, there is a sense that overall readership is not increasing; the viability of specialized journals with a limited audience is called into question.

The Computer Society has taken many steps to reduce expenses and improve the accessibility for authors, including the move to digital-only publication for most titles. However, we have also initiated or participated in several new journals, and the financial impact has been negative.

In order to maintain high quality publications in a financially sustainable manner, the Computer Society must strive to increase publications revenue and decrease expenses. While we continue to promote content to increase readership and downloads, we must also take more explicit steps, including: changes in overlength page charge policies, reduction in financial co-sponsorships, and potentially eliminating some publications. These steps must be considered carefully and strategically, and we must strive to support and sustain the communities that are invested in the publications.

Metric(s):
- Net revenue from publications

Criteria for Success:
- At least 25% improvement in net revenue by 2020, relative to 2017

B. **SP9.2. Be the Leading Society in Computing for Next-Generation Publications (. . . cont.)**

Year 1:
- Implement changes in co-sponsored publications recommended by Portfolio Review Committee
- Consider additional changes in magazine portfolio
- Monitor effects of over length page charges on revenue, submissions, and volunteer participation

Year 2:
- Investigate and develop new sources of revenue for existing publications

Year 3:
- Based on financial impact of Year 1 actions, recommend additional reductions in expenses, if necessary to meet financial goals

II. Strategic Plan (SP9) Goals (. . . cont.)

C. **SP9.3: Support and Deliver High-Quality Professional Educational Training and Certifications**

The Computer Society is uniquely positioned to be the leading provider for continuing education and professional training programs for our members and the technical communities we serve. In recent years, the Computer Society educational program has developed an impressive library of self-paced e-learning courses that address Software Engineering Knowledge Areas, Multicore Methods & Practices, Cloud Computing, IOT/Embedded Systems, Software Security and Cyber Security. This library of courses have the potential to generate significant recurring revenues in the U.S and globally. We need to work with other professional organizations, training partners and academic institutions to generate awareness and interest in our growing educational portfolio. We also strive to work closely with other program boards within the IEEE CS to promote our training and certification products and services. We need to continue to expand and grow our library to keep it in alignment with developments in technology and computing.

In the Board of Governors meeting held in February 2017, the Future of Education AdHoc committee recommended that the Computer Society strive for the following:
- To be recognized by students, instructors and professionals as a producer of high quality, current and relevant educational materials
- To establish an IEEE CS Collaboration Framework with Academia, Industry, Government and Professional Organizations
- Increased recognition and acceptance of IEEE CS training and certifications by global academia communities
- Increased recognition and adoption of CS training and certifications by industry

With our prominent worldwide brand name recognition, our certifications open the doors to international employment opportunities. There is tremendous revenue potential globally for these certifications provided that the appropriate marketing strategies and required resources and dedicated to the task. Training, especially online training faces fierce competition offered by organizations and companies across all regions of Computer Society. It is vitally important that we highlight the advantage of our wealth of IP and our extensive access to recognized experts and the applied competency based educational programs that we offer. The Computer Society has the opportunity to also establish itself as an authoritative producer, deliverer, and/or reviewer and approver for curated educational and training materials.

C. **SP9.3: Support and Deliver High-Quality Professional Educational Training and Certifications (. . . cont.)**

It is important to highlight that our programs are not intended to compete or displace any type of formal education, but to help professionals continue to develop and enhance their education and career development. Our educational activities also include an emphasis on curricula development and accreditation. In the coming year, Computer Society will focus on enhancing the curricula for traditional computing disciplines as well as for emerging fields most desirable to our members. We will develop these curriculum guidelines by collaborating and working closely with our stakeholders (instructors, students, employers, etc.).

1. *Goal SP9.3.1: Recognized by students, instructors and professional as an authoritative producer of educational materials*

The Computer Society should aim to be an authoritative producer itself of educational materials, an authoritative deliverer where students, instructors and professionals seek out educational materials or a recognized authority that provides a stamp of approval of educational material developed or delivered by others. Being authoritative can be achieved via different mechanisms:

- Developing content in some of the rapidly evolving computing disciplines such as: Data Sciences, Artificial Intelligence, Machine Learning , Cyber Security and IOT Applications
- Developing applied competency and skill based quality educational content, which only the CS can create through leveraging our pioneering researchers and experts. Our programs will serve as historical treasures for future generations
- Call for participation to create or acquire professional education assets such as webinars and tutorials for IEEE CS' sponsored Conferences and CS Chapters.
- Leverage IEEE platform for professional education and training
- Leverage Marketing & Sales for professional education and training
- Distinguished status of IEEE CS educational material contributors
- State of the art content and practical, applied nature of the educational material. Education that can go directly to work.
- Number of languages in which the educational material can be made available
- Stamp of approval for educational materials developed by recognized bodies or standards-setting organization
- Number of institutions adopting or including the educational material in their courses and training sessions

C. **SP9.3: Support and Deliver High-Quality Professional Educational Training and Certifications (. . . cont.)**

Metric(s):
- Number of new products and services that offer to learners/students/professionals.
- Number of learners/students/professionals using the educational material for their education and training

Criteria for Success:
- A 10% increase in year over year the number of new products and services that offer to learners/students/professionals.
- At the end of the third year, number of new products and services that offer to learners/students/professionals will achieve a total increase of 36% over 2017.
- A 10% increase in year over year the number of learners/students/professionals using the educational material for their education and training.
- At the end of the third year, number of learners/students/professionals using the educational material for their education and training will achieve a total increase of 36% over 2017.

Year 1:
- New sales model to sell the contents to professionals outside Computer Society including like collaboration with Amazon.
- Seek sponsorship from Intel to produce video contents to intelligibly introducing the latest computer-related technologies to younger generations, including children, so that they can realize their technological dreams
- Develop specialized certificates with a global professional organization such as IIBA for their members.
- Identify and implement professional education assets such as webinars and tutorials for IEEE CS' sponsored Conferences and CS Chapters.
- Evaluate IEEE EA's IEEE Learning Network (ILN) solution for suitability of migrating existing Learning Management System (LMS)
- Recruit educational material contributors in Region 10

Year 2:
- Develop specialized certificates with corporations such as Intel and Cisco.
- Expand our offering of specialized certificates with other global professional organization such as DAMA, Business Guild
- Localization of IEEE CS training and certificate in Chinese and Japanese

C. **SP9.3: Support and Deliver High-Quality Professional Educational Training and Certifications (. . . cont.)**

Year 3:
- Develop new strategy and approach for IEEE CS online training and certification

2. Goal SP9.3.2: Recognition and acceptance of IEEE CS training and certifications by global academia communities

The Computer Society Certifications are recognized globally by academic institutions and major industries. In (Russia) HSE encourages and promotes IEEE CS certifications to their software engineering students; those that pass our certifications are given priority for their Master program. SIT University (Singapore) has integrated our certification content into their software engineering program. And, Edith Cowan University (ECU) in Australia offers scholarships for any IEEE CS certificate holders who wish to pursue a degree program at ECU.

Metric(s):
- Revenue from generated from institutions adopting or including the educational material in their courses and training sessions
- Number of students in the technical institutes that are enrolled in the IEEE CS training and certifications as part of their regular curriculum.
- Revenue generated from co-branding certification with training and educational partners.

Criteria for Success:
- A 20% increase in year over year, revenue from institutions adopting or including the educational material in their courses and training sessions
- At the end of the third year, revenue from institutions adopting or including the educational material in their courses and training sessions will achieve a total increase of 78% over 2017 revenue.
- A 10% increase in year over year the number of students in the technical institutes that are enrolled in the IEEE CS training and certifications as part of their regular curriculum.
- At the end of the third year, number of students in the technical institutes that are enrolled in the IEEE CS training and certifications as part of their regular curriculum will achieve a total increase of 36% over 2017.

Year 1:
- New sales model to sell the contents to professionals outside Computer Society including like collaboration with Amazon.
- Expand the offering of EEE CS certificates as part of the base curriculum of academic institutes such as National Taiwan University.

C. **SP9.3: Support and Deliver High-Quality Professional Educational Training and Certifications (. . . cont.)**

- Continue CC2020 curriculum guideline efforts with ACM.
- Co-brand Software Engineering certification with training and certification partner such as Proxor
- Recruit academic institutes as our global partners in Region 10

Year 2:
- Continue to grow our global partners with technical institutes.
- Expand the offering of EEE CS certificates as part of the base curriculum of academic institutes in other countries such as Thailand, Singapore and Malaysia.
- Offer industry trainings through technical institutes.
- Develop EITBoK based training and certificates.
- Recruit academic institutes as our global partners in other region.
- Continue CC2020 curriculum guideline efforts with ACM.

Year 3:
- Offer EITBoK training and certificates as part of the base curriculum of academic institutes.
- Approval of CC2020 guideline report.

3. Goal SP9.3.3: Recognition and adoption of CS training and certifications by industry

Many corporations recognize the benefits of CS certifications and recommend them to their employees. Many employees from Northrop Grumman, Siemens, and Infosys have successfully completed IEEE CS certifications. Intel is currently sponsoring an award for top scoring candidates on IEEE CS certification exams.

Metric(s):
- Revenue generated from government agencies and professional organization and corporation's utilization IEEE CS training and certification products.
- Number of professionals/practitioners enroll in the IEEE CS training and certifications as part of their professional training.

Criteria for Success:
- A 20% increase in year over year revenue from government agencies and professional organization and corporations utilization IEEE CS training and certification products.
- At the end of the third year, revenue from government agencies and professional organization and corporation's utilization of IEEE CS training and certification products will achieve a total increase of 78% over 2017 revenue.

C. SP9.3: Support and Deliver High-Quality Professional Educational Training and Certifications (. . . cont.)

- A 10% increase in year over year the number of professionals/practitioners enrolled in the IEEE CS training and certifications as part of their professional training.

Year 1:
- Re-design TechLeader Training Partner Program (T2P2) to address industry needs and increase revenue.
- Develop Short videos contents like future perspectives by CTOs or VPs of customer companies like automobile, medical, IoT, etc companies on CS web sites or e-magazines targeting senior managers that cannot come to the events.
- Develop specialized certificates with corporations such as Intel and Cisco.
- Expand the reversed boot camp to industry associations and government agencies based on the result of the pilot with III (Institute of Industry Information).
- Collaborate with corporation such as Wistron to offer IEEE CS training and certification to their employees worldwide.

Year 2:
- Expand specialized certificates with industry and corporations.
- Collaborate with corporation such as Wistron to offer IEEE CS training and certification to their clients worldwide.
- Expand the reversed boot camp to industry associations and government agencies in the other regions.

Year 3:
- Expand the reversed boot camp to industry associations and government agencies globally.

4. *Goal SP9.3.4: Establish an IEEE CS collaboration framework with academia, industry, government and professional organizations*

The IEEE CS Collaboration Framework was endorsed by the ExCom and Board of Governors in 2016. Since then, it has garnished international attention both in North America and Asia. To-date, Information Technology Promotional Agency (IPA), Institute of Industry Information (III), National Taiwan University (NTU), Wistron ITS, Edith Gowen University, Chiang Mai University, Singapore Technical University had signed the MoU and join our global partnership programs.

Metric(s):
- Membership of IEEE CS Global Partnership Program

C.   SP9.3: Support and Deliver High-Quality Professional Educational Training and Certifications (. . . cont.)

Criteria for Success:
- A 10% increase in year over year the membership of IEEE CS Global Partner Program.
- At the end of the third year, the membership of IEEE CS Global Partner Program will achieve a total increase of 36% over 2017.

Year 1:
- Implement the initiatives identified in the MoUs with our global partners.
- Establish MoU with the United Nations

Year 2:
- Implement the initiatives identified in the MoUs with our global partners.
- Recruit global partners in the other regions

Year 3:
- Implement a IEEE CS global educational partners summit/conference

II. Strategic Plan (SP9) Goals (. . . cont.)

D.   SP9.4: Define and oversee new tactics for sustainable membership numbers

The Computer Society is a volunteer organization. It depends on its membership for disseminating knowledge and participating in activities and programs in the field of computer engineering, computer science, information technology, information systems, systems engineering, hardware and software engineering. As a result, membership and its inclusivity are the essential components of the Computer Society.

1.   Goal SP9.4.1: Increase existing member retention rates

Although the Computer Society has a retention rate comparable to other professional organizations, retention rate is still not satisfactory, especially retention rate after the first year membership. Additionally, IEEE had discovered that members who obtain Senior Membership status tend to renew at a higher rate than regular members. As a result, the Computer Society plans to focus on increasing member retention rates and increasing the number of members applying for Senior Member status.

Metric(s):
- Member retention rates

Criteria for Success:

Reach a retention rate of at least:
- for new young professionals: 35% (new category - no existing baseline)
- for new members: 45% (2016 baseline: 33%)
- for higher grade members: 80% (2016 baseline: 78%)
- for affiliates: 77% (2016 baseline: 75%)

Promote to Senior Membership at least 450 members per year (2016 baseline: 420 were elevated)

Year 1:
- Identify how demographic and interest information can be captured during renewal and develop approaches to increase the number of applications for promotion to Senior Member. Develop approaches to identify what members' expectations are.

D. **SP9.4: Define and Oversee New Tactics for Sustainable Membership Numbers (. . . cont.)**

Year 2:
- Develop approaches to meet member's expectations and enhance member's satisfaction.

Year 3:
- Enhance the value of membership through engagement activities

2. Goal SP9.4.2: Recruit 12,000 new members into the Society

To help the Computer Society continue to grow, new members must be brought in to offset those who do not renew for myriad reasons. In addition to bringing in members to retain current membership levels, the Computer Society needs to grow its membership base to increase its technical representativeness, as well as to ensure volunteer contributions to conferences, journals, and volunteers.

Metric(s):
- Number of new members (new to Society, but working within our field of interest)

Criteria for Success:

Recruit 4,000 new members annually, out of which:
- 10% are from Region 9 (2016 baseline: 6%)
- 30% are from Region 10 (2016 baseline: 30%)

Year 1:
- Activate enhanced communication strategies with university schools and departments to recruit student members

Year 2:
- Enhance services of interest to members that are offered as part of their membership fee

Year 3:
- Work with conferences/chapters to find incentives for non-IEEE member recruitment activities

D. **SP9.4:** **Define and Oversee New Tactics for Sustainable Membership Numbers (. . . cont.)**

3. *Goal SP9.4.3: Increase the value and effectiveness of member communication and engagement*

In order to maintain the Computer Society membership base, individuals must see value from the organization. The Computer Society must focus on enhanced communications to and engagement of all of its members.

Metric(s):
- Member engagements with communications.
- Number of chapter activities per chapter

Criteria for Success:
- High communication traffic on the "INTERFACE" communication platform (introduced in 2017) and on social media.
- 30 new professional and/or student chapters created annually (2016 baseline: 35).

Year 1:
- Identify new and innovative solutions to improve the presence of Computer Society Chapter activities in social media (Facebook, Twitter, LinkedIn and the Chinese social media). Develop an action plan to identify suitable female members prepared to act as speakers in the DVP. Implement a reward membership program.

Year 2:
- Measure the success of the solutions defined above and define enhancements as necessary. In association with chapters and STCs, identify ways to record speakers and use the content in other forums (like magazines) and in recruiting.

Year 3:
- Implement new chapter support and enhancement programs.

D. **SP9.4: Define and Oversee New Tactics for Sustainable Membership Numbers (. . . cont.)**

4. *Goal SP9.4.4: Better understand and increase the perceived value proposition of the membership offer*

The Computer Society must understand the perceived value of its programs and activities to its membership, especially how its members perceive and engage with the Computer Society.

Metric(s):
- Member renewal rate (longitudinal metric tracked over time). Number of new members (longitudinal metric tracked over time)

Criteria for Success:
- Meet membership retention rate as defined in SP9.4.1

Year 1:
- Create a strategy to measure ongoing membership satisfaction trends. Run at least one new membership campaign per quarter. Define an action plan to identify member needs. Implement a reward program to recognize members' voluntary work.

Year 2:
- Define an action plan of campaign that focus on the value proposition of the Society and member needs. Create a working group to identify services that can be provided to members (as part of their membership) to increase the perceived value of their membership.

Year 3:
- Define a set of longitudinal membership key performance indicators (e.g., retention of first year member grade, higher grade, affiliate membership, student conversion to professional membership, chapter involvement, access to our online resources, etc.).

II.   Strategic Plan (SP9) Goals (. . . cont.)

E.   SP9.5: Be the Leading Society in Computing for Research Engineers/ Scientists

By "research engineers and scientists" we mean the full range of professionals performing research in computer science. This includes the "traditional" tenure-track researchers in academia but also includes professionals working in government, industry, non-profits, university-associated research labs, and many other related research models. The research ecosystem has been changing and broadening and the Computer Society requires both better awareness and better outreach to non-traditional types of professionals.

Being the leading society for this type of professional requires improvement in two dimensions:

1. Better engage researchers outside academia

There is a perception that the Computer Society focuses primarily on members in academia. Academics represent the majority of attendees at many conferences, and represent the bulk of the authors in our journals and magazines. However, academics represent only a portion of our membership, most likely less than half[1]. Research engineers and scientists outside of universities also have a critical role to play in the research ecosystem and have been responsible for critical advances in technology, and critical support roles related to technology-related national and international priorities. While they represent an important set of our members, The Computer Society needs to broaden our views to make sure we are serving – and involving - the whole community and increasing our impact appropriately in the process.

2. Better engaging researchers with related degrees or job activities

The Computer Society has traditionally focused on members with computer science degrees and backgrounds. In our very interconnected field, however, that represents just one perspective. In many contexts, important capability comes not just from the software itself but from software's interaction with other elements of the system. Increasingly, there is a need for outreach to and engagement of professionals from a variety of different backgrounds and perspectives, including system engineers and computer engineers.

To progress on both dimensions, we formulate the following goals:

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[1] The most recent data from the Computer Society's demographics database shows that 23% of members have job titles of Dean, Professor, or Instructor. In the same data, 18% listed their job function as education or teaching. In a member survey conducted in 2017, 20% of respondents described their principal job function as "Academic (research and teaching)." While the categories used are certainly not precise, these data seem to provide a reasonably consistent view of academics in our membership.

E. **SP9.5: Be the Leading Society in Computing for Research Engineers/ Scientists (. . . cont.)**

1. *Goal SP9.5.1: Maintain an independent sounding board to advise the Society about services and products to engage researchers, and measure its impact.*

In 2017, the Computer Society began a Research Advisory Board (RAB) to broadly represent the viewpoints of academic, industry, and government-lab researchers to advise Society leadership on best ways to engage the research community. The Computer Society should continue this experiment and monitor its impact so as to understand whether it is successful in helping the Society reach new audiences.

Metric(s):
- Number of meetings of the RAB per year
- Actionable information to the CS

Criteria for Success:
- The number of RAB meetings at least maintains the pace set in 2017
- RAB has provided at least four items per year of actionable information to the CS about the needs of the research community, which has allowed the CS to offer products and services capable of meeting those needs

Year 1:
- RAB serves as sounding board to evaluate products and services based on their value and attractiveness to researchers.
- RAB creates a vision for the research society of the future and submits to the BOG for approval

Year 2:
- RAB recommends a roadmap aimed at moving society products toward the new vision
- As the "point accumulation system" is rolled out, ensure that RAB members are surveyed regarding what kind of recognition and rewards they would find valuable

Year 3:
- RAB recommends new approaches to the Membership Development and Products and Services staffs for
  - o scholarly communications
  - o technical community enrichment
  - o development and deployment of connective technologies

E. SP9.5: Be the Leading Society in Computing for Research Engineers/ Scientists (. . . cont.)

2. *Goal SP9.5.2: Ensure that non-academic research scientists and engineers are represented in the upper ranks of volunteers and decision makers in the Society.*

The Research Advisory Board is important, but it is also necessary to represent their perspectives directly in decision-making, ensuring the representation of professionals from outside of academia at all levels of volunteers. This has been and continues to be difficult for a variety of reasons: For example, non-academic researchers tend to have less flexibility in their job duties, and participation in such activities may be less appreciated or rewarded by their institutions. Without understanding and attempting to mitigate such issues we will be unlikely to make progress.

Metric(s):
- % of Board of Governors and Executive Committee members from outside of academia

Criteria for Success:
- Appropriate levels of representation in high levels of the volunteer hierarchy allow better recruitment and better targeted products and services. Target value of 40% of BoG and ExCom members coming from outside of academia to align with Society membership

Year 1:
- Create an ad hoc to identify existing leadership who fit the criteria in the current year and preceding three years. Survey them regarding their participation: How do they make time for Society volunteer activities? How important are these activities for their professional advancement? What could be done to better reach out and engage their peers?
- Also elicit their feedback on the "point accumulation system" and what services and recognition they would find valuable.
- Use the data from these years to create a baseline of targeted professional involvement, against which improvement can be measured

Year 2:
- The ad hoc, together with MGA, works to produce a short list of desirable "recruits" from industry, government, and non-profit organizations who could help reach new communities and amplify the Society message if they were engaged.
- Targeted outreach is undertaken to both these individuals and their organizational leadership.

Year 3: N/A

E.   **SP9.5: Be the Leading Society in Computing for Research Engineers/ Scientists (. . . cont.)**

3.   *Goal SP9.5.3: Increase the number of non-academic participants at Computer Society conferences.*

Computer Society-sponsored technical conferences remain one of our most visible venues for interaction with professionals in our field. However, for many conferences, attendance remains dominated by academic researchers. Recently, several conferences have put a particular focus on attracting more research scientists and engineers from industry and government through activities such as offering industry-experience tracks to show case more industry-related content. However, it is not clear that these initiatives have been in contact with each other and benefitted from understanding what is working and what is not, and sharing best practices.

Also, an important way to improve the engagement of targeted professionals is to improve the representation of such professionals on the planning committees and conference PCs and in the Technical Communities that oversee the conferences.

Metric(s):
- More attendance from targeted professionals
- More sponsorship from industry, government, and non-profit organizations

Criteria for Success:
- Overall attendance and sponsorship at conferences increased as new communities are engaged:
  - Attendance: Achieve an increase of 15% over the baseline established in year 1
  - Sponsorship: At least 3 sponsored events per year

Year 1:
- Ensure that our largest conferences are able to measure participation by targeted professionals, and sponsorship
- Hold an experience exchange session at an annual T&C meeting to share best practices regarding recruitment of targeted professionals

Year 2:
- Ensure that our largest conferences are recruiting targeted professionals to PCs and that this is tied to the "point accumulation system" to reward such volunteers
- Continue experience exchange and use measures to determine whether proposed best practices are having an effect.

Year 3:
- Determine whether successful best practices can be rolled out more widely
- Ensure that best practices are represented in the "point accumulation system" as contributing to desired rewards

E.   SP9.5:   Be the Leading Society in Computing for Research Engineers/ Scientists (. . . cont.)

4. *Goal SP9.5.4: Increase the number of channels for quality industry experience reports in Computer Society publications.*

Providing more representative content in our periodicals for the targeted population is another area where we should be able to obtain additional benefits while increasing Society impact. Increasing the channels available for high-quality industry experience reports would be an important way to do this. High-quality experience reports would likely be of wider impact than just to industry professionals.   Academic researchers also need better access to information regarding the state of the practice. Additionally, introducing industry and government researchers to more relevant information and publishing opportunities we can introduce them to the larger spectrum of research content offered by the Society.

For this to be successful, it is important to involve the targeted population upfront, as reviewers, and not just view them as passive consumers of the information. The proposed "point accumulation system" may be able to help attract volunteer reviewers in this regard.

It will be particularly important to conduct outreach to system engineers, computer engineers, and other engineering fields who can contribute useful experience reports of software and computers being used in conjunction with other components to provide innovative capabilities for users.

Metric(s):
- Number of peer-reviewed experience report opportunities
- Downloads of experience report content

Criteria for Success:
- Attraction of new authors and readers for Society content
    - Authorship: Achieve an increase of 15% over the baseline established in year 1
    - Readership: Achieve an increase in terms of downloads of 5% by year 3, above and beyond the historical rate of increase
- Ability to attract advertising from companies whose personnel are represented as authors

E.   SP9.5:   Be the Leading Society in Computing for Research Engineers/ Scientists (. . . cont.)

Year 1:
- Ensure that our largest magazines are able to measure authorship by targeted professionals, and estimate any ad revenue resulting.
- Poll transactions to see if there is any interest in related initiatives on the transactions side
- Hold an experience exchange session at an annual Pubs board meeting to share best practices regarding attracting good-quality experience reports

Year 2:
- Ensure that appropriate periodicals are recruiting targeted professionals as reviewers and that this is tied to "point accumulation system"
- Continue experience exchange and use measures to determine whether proposed best practices are having an effect.

Year 3:
- Determine whether successful best practices can be rolled out more widely
- Ensure that best practices are represented in the "point accumulation system" as contributing to desired rewards

5. *Goal SP9.5.5: Rejuvenate industry-focused events to continue to meet the needs of professionals outside of academia.*

In the last several years, the Society had some initial success with "Rock Star" events on a variety of technical topics. This was a series of events targeted especially for industry and consequently had a very different format and content than a typical Society conference. Although this model eventually proved unable to scale as needed, it was useful to have an offering that was aimed directly at this segment of our membership.

Widening the appeal of existing products and services to better represent industry, government, and non-profit researchers may yield some benefits, but these targeted professionals should also be able to find self-sustaining offerings that are tailored to their needs.

At the time of writing, the Society is rolling out a new series of "Edge" events that build on lessons learned from the Rock Stars series. These events need to be examined as to whether they are being successful at reaching the targeted processional, then strengthened and expanded as appropriate.

E. **SP9.5: Be the Leading Society in Computing for Research Engineers/ Scientists (. . . cont.)**

Metric(s):
- Number of self-sustaining events / periodicals aimed at the targeted population
- Number of attendees / readers of these offerings

Criteria for Success:
- Members of the targeted professional population find offerings from the Computer Society that fulfill their professional needs– by year 3, at least 500 attendees of new events aimed at software professionals

- New professionals are reached through Society offerings– at least 50% of event attendees are not current members.

Year 1:
- Understand successes and challenges of "Edge" and similar events, through analysis of new or existing feedback surveys and surveys of likely professionals who are *not* participating. Are these events able to reach the targeted population?

- Ensure that "Edge" and other events are integrated with the "point accumulation system." Design appropriate ways for attendees and speakers' organizations to get credit for participating. Come up with requirements for additional integration, e.g. Could attendees gain points for interacting with sponsor booths or online offerings?

Year 2:
- Pilot at least one new type of event aimed at better serving the targeted population; collect measures and monitor Success.
- Make appropriate changes to "Edge" and other existing events based on the customer feedback.

Year 3:
- Continued evolution of non-academic focused events.

II. Strategic Plan (SP9) Goals (. . . cont.)

F. **SP9.6: Provide a Proactive Approach and Environment to Enable the Continued Development of High Quality, Market Relevant Standards**

Recognizing that it is the volunteers that develop standards, the Computer Society will facilitate implementation of a proactive approach and environment to Standards development. This support is in organization, governance, staff and tools for the development of standards by the volunteers in the working groups.

1. *Goal SP9.6.1: Coordinate with Publication and Education to produce revenue generating derivative products.*

Metric(s) and Criteria for Success:
- Creation of content based on standards such as seminar reports, workshop presentations and webinars.

Year 1:
- Identify target technologies that Education and Publication can work with the CS Sponsors.

Year 2:
- Create initial derivative work products (at least one).

Year 3:
- Add to the number of derivative work products (at least two).

2. *Goal SP9.6.2: Include Open Source and reference implementation options for Standards*

Metrics(s) and Criterial for Success:
- Include Open Source generated materials into Standards.

Year 1:
- Identification of the process required for inclusion of Open Source material that can be referenced by or included in new Standards.

Year 2:
- Encourage development of Open Source materials that can be referenced by or included in new Standards.

Year 3:
- Referenced Open Source material is included in Standards

F.   **SP9.6:   Provide a Proactive Approach and Environment to Enable the Continued Development of High Quality, Market Relevant Standards (cont.)**

3. *Goal SP9.6.3: Encourage the standardization of new technologies presented in technical conferences*

Metric(s) and Criteria for Success:
- Increase the number of CS Technical Committees that are fully engaged in Standards related activities

Year 1:
- Identify the CS Technical Committees and Standards Sponsors to start engagement

Year 2:
- Initially identified CS TC and Sponsors hold seminars, workshops or webinars.

Year 3:
- Increase the number of TC and Sponsors jointly holding events or producing reports.

II. Strategic Plan (SP9) Goals (. . . cont.)

G.   SP9.7: Be the Leading Society in Computing for Ethics

Computer Society is engaged in the development of technologies which relate to society in many ways, and have a wide range of ethical implications. From complex algorithms which determine the life opportunities of people, to the code in self-driving vehicles, medical devices and autonomous weapons, an ethical perspective is important in tasks across the membership. The goal is to ensure that Computer Society is the leading society in all aspects related to ethics in computing.

1.   *Goal SP9.7.1: Reflect ethics across the Computer Society's portfolio of conferences* Computer Society hosts over 230 financially and technically co-sponsored conferences. The goal is to reflect ethics among these conferences, including in all society flagship conferences and through support for a flagship IEEE ethics conference.

Metric(s) and Criteria for Success:
- Have 500 conference attendees participate in sessions on ethics at sponsored conferences by 2020

Year 1:
- Trial an ethics-related panel in a flagship conference

Year 2:
- Include ethics-related panels in each flagship conference

Year 3:
- Co-sponsor an IEEE Ethics flagship conference

2. *Goal SP9.7.2: To be the leading society in Computing for ethics in publications* The Computer Society is a leading publisher in computing. The goal is to reflect ethics in these publications, including in a society flagship publication and through support for a flagship IEEE transactions on ethics.

Metric(s) and Criteria for Success: 10
- Annual number of articles, including non-peer reviewed, in Society sponsored publications to be 10 in 2020

Year 1:
- Consider a column on ethics in a publication

Year 2:
        N/A
Year 3:
- Consider sponsorship for an *IEEE Transactions on Ethics*

H.   SP9.7: Be the Leading Society in Computing for Ethics (. . . cont.)

3. _Goal SP9.7.3: Support and deliver high-quality professional ethical training and certifications_

The Computer Society is uniquely positioned to be the leading provider for continuing education and professional training programs for our members and the technical communities we serve. The goal is to significantly contribute to IEEE-wide ethics education, and to encourage the extension of that content into broader global training.

Metric(s) and Criteria for Success:
- Collaborate to deliver broader global ethics training courses in 2020

Year 1:
- Collaborate in the development of IEEE Code of Ethics training relevant to Society members [aligned to a Board of Directors initiative scheduled for 2018]

Year 2:
- Undertake activities to promote Code of Ethics training to members.

Year 3:
- Promote the training program content beyond IEEE.

4. _Goal SP9.7.4: Development of high quality, market relevant standards in ethics_

Recognizing that it is the volunteers that develop standards, the Computer Society will facilitate implementation of a proactive approach and environment to Ethics Standards development. This support is in organization, governance, staff and tools for the development of standards by the volunteers in the working groups.

Metric(s) and Criteria for Success: 5
- Development of five standards by 2020.

Year 1:
- Continue to develop engagement with the P7000 standards series.

Year 2:
- Collaborate with other societies in examining opportunities for further standards [aligned to SSIT plans in the next two years]

Year 3:
- Complete development of five standards.

II. Strategic Plan (SP9) Goals (. . . cont.)

H. **SP9.8: Evolve the Computer Society's Organizational Structure to Effectively Meet Current and Future Challenges**

Computer Society needs to evolve to meet current and future challenges effectively considering collaboration among multiple SP9 goals and with other societies in IEEE.

*1. _Goal SP9.8.1: Stronger relationship between conferences and publications_*

Publications have been one of the most important activities in Computer Society. However, currently we should think about new movements like on-line free journal. In the next three years, Computer Society will be challenged to find ways to give members valuable contents through Journals. Also, conferences are one of the most important activities for current and future Computer Society. They need also value added features to be leading conferences for the Next-Generation.

As a challenge for the next generation, this goal tries to publish short special issues in Transactions related with CS prestigious conferences, which are delivered in about six months after the conferences every year inviting the PC chairs as guest editors as an example of the collaboration of Journals and Conferences, with SP9.1 Conferences and SP9.2 Publications. This challenge will allow us to have high quality papers for both Transactions and Conferences.

Metric(s):
- Number of regular special issues in Transactions related with CS Conferences

Criteria for Success:
- More than 50% of Transactions publish or plan Special Issues of the CS Conferences

Year 1:
- Two or three transactions make plans for publishing short special issues within 6 months after selected CS conferences.

Year 2:
- Publish the special issues planned in Year 1 and plan two or three special issues.

H. SP9.8: Evolve the Computer Society's Organizational Structure to Effectively Meet Current and Future Challenges (. . . cont.)

Year 3:
- Publish the special issues planned in Year 2 and plan more than 50 % of Transactions publish short special issues within 6 months after for selected CS Conferences.

2. SP9.8.2 Development of leading educational contents with pioneer researchers

Technical Contents are most important factor for Computer Society as the leading Society. Developing the world's best educational video contents, which only the CS can create with our pioneer researchers and will be historical treasures for future generations with SP9.3: Education, 9.4 Membership, and 9.5 Research Engineers including collaboration with STCs.

Metric(s):
- Number of video contents developed and how many copies were sold to CS members and Non-CS members.

Criteria for Success:
- Satisfaction in the targeted technical area was improved more than 10% and revenue in the targeted technical area of Education increased more than 10%.

Year 1:
- Develop more than one leading educational video content with CS pioneer researchers to be sold and archived by the Computer Society.

Year 2:
- Developing effective sales methods with proper pricing of the world leading educational contents to CS members and Non-CS members considering collaboration with internet commerce companies.

Year 3:
- Increase revenues in the targeted technical area of Education by more than 10% and develop more than one leading content.

H. **SP9.8: Evolve the Computer Society's Organizational Structure to Effectively Meet Current and Future Challenges (. . . cont.)**

3. Goal SP9.8.3: Attractive content for members in industry

The Computer Society has offered attractive events to relatively young practitioners in industry. CS will need to develop content targeting senior managers that cannot come to the events. They usually have short time to catch up new technical trends. Start a challenge to provide short video content like future perspectives by CTOs or VPs of customer companies like automobile, medical, IoT, etc. through CS web sites or e-magazines. It needs collaboration of SP9.5 Research Engineers, 9.2 Publications, 9.3 Education, and 9.4 Membership.

Metric(s):
- Numbers of short video content developed and how many percentages of industry members are increased.

Criteria for Success:
- More than six attractive content for industry members in a year are available through CS sites and more than a 5% industry member increase.

Year 1:
- Develop more than two short video content of end-product development companies that industry senior managers would like to watch through CS website and observe access counts with developing advertisement methods.

Year 2:
- Develop more than four content with best advisement method. Try a system where previews of the content from CS web sites will be shown to everyone and their full content will be shown to CS members.

Year 3:
- Develop more than six content with the system of Year 2 and have more than 5% of membership increase from industry.

H.   SP9.8: Evolve the Computer Society's Organizational Structure to Effectively Meet Current and Future Challenges (. . . cont.)

4. *Goal SP9.8.4:   Increase future computer scientists and practitioners through developments of video content for non-specialists including K12*

Increasing future computer scientists and practitioners is an important role of the Computer Society. As an approach, develop video content to intelligibly introducing the latest computer-related technologies to Non-specialists including K12, so that they can realize their technological dreams with SP9.3 Education, SP9.4 Membership, and SP9.7 Organization.

Metric(s):
- Numbers of video contents developed and how many accesses were counted.

Criteria for Success:
- More than 10% increase of accesses to CS sites by Non-specialists

Year 1:
- Develop a video to introduce future world realized by computer related technologies to Non-specialists including K12 in English so that they yearn for the computer technologies. Think to have support from Foundations and/or companies introduced in the video though discussion in IAB (Industry Advisory Board).

Year 2:
- The developed content will be tried out and shown in the ISEF (High School Sci. & Tech Challenge) Award Ceremony at the CS award presentation and have feedback from the World Top High School Students participated in ISEF. Developing a method to give the information of videos to K12 including schools and local governments. Translate the videos into a few languages with the improvement of English version through comments from the English Speaking Community.

Year 3:
- Increase by more than 10% access from K12 in English Speaking Countries.
- Translate the contents into major languages as much as possible with improvement considering the comments obtained in Year 2. Increase more than 10% accesses from K12 in the translated language countries in Year 2.

H. SP9.8: Evolve the Computer Society's Organizational Structure to Effectively Meet Current and Future Challenges (. . . cont.)

5. Goal SP9.8.5: Improve CS member's satisfaction

Improvement of CS member's satisfaction is a key issue for Computer Society to increase membership.   For this purpose, the following factors needs to be considered.

Express appreciation to volunteers with all over SP9:   Point accumulation system:

Volunteers like VP, Secretary, BoG, EIC, Editors, Reviewers, TC Chair, Conf. Chair, PC Chair, PC, Chapter Chair and so on, can accumulate points and will have honors for a year and in the whole life, e.g. Platinum/Gold Premier member, Distinguished Reviewers, Distinguished   TC leader, Life time honorary volunteer, and so on (names should be discussed).

Also, Premier registration desk at conferences, Premier seating in conference plenary sessions and so on will be offered for the Premier members. This system will allow us to prompt and high quality publication with qualified reviewers, improve retention rate, etc. If CS members can accumulate CS points for activities in IEEE other societies, CS membership will be increased.

Metric(s):
- Average review period in Journals and membership retention rate and membership increase.

Criteria for Success:
- More than 5% increase of membership and more than 5% increase of membership retention rate.

Year 1:
- Try pointing system for journals reviewing process including EiCs, Associate Editors, reviewers, and so on. Observe acceptance rates of reviewers and reviewing period. Also, apply CS conferences including TC Chairs. General Chairs, PC Chairs, PC members, reviewers, CS leadership positions including ExCom, BoG members.

Year 2:
- Try to Point accumulation to other CS important positions like International Chapter Chairs including students Chapters. Start Premier Status awarding with Premier Registration desk and Premier Seating.

H. **SP9.8: Evolve the Computer Society's Organizational Structure to Effectively Meet Current and Future Challenges (. . . cont.)**

Year 3:
- Try to expand the point system in extent of low required expenses. Having more than 5% shorter Journals average reviewing period and more than 5% increase of membership and more than 5% of membership retention rate.

6. *Goal SP9.8.6: Cooperating with other IEEE societies and sister societies in a timely and efficient manner*

Many other societies have emergent applications like robotics, self-driving-car, space, smart city, bio etc. Collaboration will allow us to create useful technologies and value added product efficiently.

Joint special issues in magazines for each emerging topic asking both societies' leading researchers to introduce the latest technologies and prepare contact paths for collaboration with SP9.2 Publication.

Also, if the previous CS points can be accumulated by activities in IEEE other societies or sister societies, other societies' members will join CS. It also will naturally drives the collaboration with SP9.4 Membership and 9.5 Research Engineer.

Metric(s):
- Numbers of societies' collaborative publications and percentages increase of CS membership who are also members of the related societies.

Criteria for Success:
- 10% increase of the joint publications and more 5% increase of CS membership who are also members of the related societies

Year 1:
- Develop more than one joint short special issue in *Computer* magazine.

Year 2:
- Propose effective joint special issue development methods and other collaboration methods with other IEEE Societies. Publish more than two joint short special issues in CS magazines. Plan to increase more than 3% of CS membership who are also members of the related societies.

Year 3:
- Publish more than four joint short special issues in CS magazines. More than 5% of CS membership who are also members of the related societies.

H.   SP9.8: Evolve the Computer Society's Organizational Structure to Effectively Meet Current and Future Challenges (. . . cont.)

7. *Goal SP9.8.7: Sustainable governance*

The CS has been facing financial challenges. The CS governance should change into a sustainable structure. In SP9, the CS will start to move into a sustainable structure approved in the BoG meeting in Nov. 2017 including BoG size, program board meetings, presidential term and so on.

For example, it includes reduction of the size of BoG with the decrease of the CS members, change of in-person program board meetings into online to reduce the expense, reduction of a number of in-person BoG meetings with increase of online BoG meetings to reduce the expense and make prompt decisions, simplification of the award ceremony keeping the great respect to the award winners to reduce the expense and extension of the term of the CS President from one year to two years to allow the president to make decision for longer terms with deeper experience.

Metric(s):

- Size of BoG, a number of in-person meetings and expense reduction
- Numbers of in-person and on-line program board meetings and expense reduction
- Numbers of in-person and on-line BoG meetings and expense
- Expense of award ceremony
- Presidential term

Criteria for Success:

- Size of BoG will be from 21 to 18 and 3% expense reduction
- Zero in-person program board meetings using CS budget and reduction of travel expenses of the members for the previous in-person meetings.
- Reduction of in-person BoG meetings from three to two and reduction of 20% travel expenses for BoG meeting.
- Reduction of the expense for event planning and operation companies for Award Ceremony into less than 30 %.
- The term of president is changed from one year into two years.

H.   SP9.8: Evolve the Computer Society's Organizational Structure to Effectively Meet Current and Future Challenges (. . . cont.)

Year 1:

- Modify related Constitution and Bylaws to change the size of BoG from 21 to 18 and start election for new 6 members.
- Change in-person program board meetings into on-line as much as possible though cancellation fees for hotel rooms and air fare should be paid from governance. Also, the program board budget will be reduced by the amount for the previously planned in-person meetings.
- The BoG meeting in November is changed into online. Propose simplified method for the Award Ceremony and perform a little simpler Award Ceremony but with a new unforgettable operation plan. Presentations of some of the awards will be moved into IEEE CS Conferences.

- Propose the implementation method to change smoothly into the two years presidential term and discuss modification of the Constitution and Bylaws.

Year 2:

- The election for six new BoG members will be performed.
- The all program board meetings using CS budget are on-line.
- Nov. BoG meeting is organized as on-line
- Sustainable simplified award ceremony will start.
- Consider modifying the Constitution and Bylaws required for two years presidential term and plan to start the election for the president elect who will serve as the two year term president.

Year 3:

- Election for 6 new BoG members will be organized and finish changing into BoG size of 18.
- Continue on-line program board meetings.
- Continue Nov. on-line BoG meeting
- Continue the new Award Ceremony
- Start first president-elect term for two year term of president.

III.   **Concluding Remarks**:

Strategic Plan 9 (SP9) promotes innovative services by the IEEE Computer Society to its members, including researchers, educators, software engineers, IT professionals, employers, students and the people in the world. The Computer Society aims to realize and implement this plan over the next three years for the benefit of the members and the people, and strives to increase diversity across all Computer Society activities. Tracking the progress towards achieving the goals of this strategic plan is critical. SP9 continues the SP8 assessment method by specifying metrics for success criteria.

As Chair of the 2017 Planning Committee, I would like to express to the committee members and 2017 TAB Chair for Ethics in Design Greg Adamson, my sincere appreciation for their excellent contributions and hard work: VP T&C Hausi Muller, VP Pubs Greg Byrd, VP PEAB Andy Chen, VP MGA Cecilia Metra, BoG Secretary Forrest Shull, VP of SAB Jon Rosdahl, 2017 President Jean-Luc Gaudiot, 2016 President Roger U. Fujii and Computer Society staff - especially, Executive Director Angela R. Burgess, Associate Executive Director Anne Marie Kelly and Ms. Merlanda Nunez. I also would like to thank 2015 President Thomas M. Conte, the leader of SP8, and 2014 President Dejan S. Milojicic, the leader of 2022 Report, as well as the SP8 committee. The SP8 and the 2022 Report served as a valuable base for SP9. Finally, I would like to thank all the people who supported us so kindly and generously in the development of SP9.

I sincerely hope that SP9 will be useful for the future of the Computer Society – the Community of Technology Leaders.

Hironori Kasahara
2017 IEEE-CS President-Elect/2018 IEEE-CS President
January 2018

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