2015 Report
SD&EA* Committee

Toshio Fukuda
Vice Chair, Strategic Management and Analysis

* Strategic Direction and Environmental Assessment

2015 Priorities

- Oversee implementation of Japan plans developed in 2013/2014
- Oversee implementation of India plans developed in 2013/2014
- Determining if we can offer a lower dues rate to potential members in very low income countries
  - With limited financial risk to current dues model
Success!

Determining if we can offer a lower dues rate to potential members in very low income countries

Results: Committee developed proposed model that was agreed upon by MGA Board in June 2015
- Qualifying Countries: World Bank Low Income Economies
- Model: Same as eMembership
- Price: Match student price outside N America (currently US $27)

Next Steps:
- Governance: Bylaw change to IEEE Board in February
- IT Implementation: In 2016 schedule for August release
- Communications: Planning documentation underway

Implementation: 2017 Membership Year (August 2016)

Work in Progress

Japan Plan Implementation

- Strategic priorities established
  - Better coordination with Industry
  - More relevant events for "Practitioners" & Young Professionals
- Industry Promotion Committee created (within Japan Council)

Accomplished in 2015
- Tokyo Metro Area Workshop (May) ~100 attendees
- Kansai Young Professionals formed, networking event (w/ Stu & WiE)
- Some initial dialog with companies

Planned
- Tokyo WiE Workshop: (Oct)
- Nagoya Young Professionals Formation & Networking event (Dec)
- Standards Association workshop (April 2016)
- Kansai Metro Area Workshop (4-5 August 2016)
- Tokyo/Kansai/Nagoya networking events (2016)
- Considering "in company IEEE networks"
Work in Progress
India Plan Implementation

- **Strategic priorities established**
  - Improve relevance of IEEE to industry/academic/government
  - Enhance growth/retention, particularly young professionals & students

- **Accomplishments:** Teams tasked on specific objectives for 2015
  - Improved engagement with Industry:
    - Bangalore Metro Area Workshop (September 2014 and 2015)
    - Facilitating student Internships and Entrepreneurship initiatives
      - Numerous workshops for both (6+) throughout India thus far in 2015
  - Improve student retention
    - Student retention survey in the field with Frost and Sullivan (vendor)

- **Planned**
  - IEEE Collabratec Careers Connect India Community
  - Discussions on Internship Portal (IEEE Job Site, or external vendors)
  - Metro Area Workshop outside of Bangalore

Country Plans
- What’s working well?

- Agreement on strategic objectives
- Engaged in country volunteer leader
- Engaged a few key passionate volunteers
- Some key events are being conducted
- Events are locally authentic
Country Plans  
- What can be improved?

- Pace of accomplishments:
  We must improve momentum to make sure there are significant accomplishments between meetings

- Communication/coordination of tactics & objectives

- Availability/activity level of accountable volunteers

- Speed of funding approvals

- Metrics: Measurement of success/impact

Questions and Discussion
Appendix

SD&EA 2015 Quarterly Objectives
1st Quarter 2015

- Review activities of 2014 Committee
- Establish sub-teams leads for key activities
  - India, Japan, Extremely Low Income Dues
- Finalize 2015 India and Japan Task Force Teams
- Review MGA Strategy
- Finalize 2015 Calendar for India activities
  - Plan must define accountability
- Finalize 2015 Calendar for Japan activities
  - Plan must define accountability

Status

- In Process
- In Process

2nd Quarter 2015

- Review very low income dues presentation
- India plan implementation underway exact action items TBD
- Japan plan implementation underway exact action items TBD

Status

- In Process
- In Process
- In Process
- In Process
**3rd Quarter 2015**

- Checkpoint of progress against implementation of Japan and India tactical plans
- Take stock of efforts in Japan, India, China, and USA and determine the best way to move forward in each (e.g. What worked well? What can be improved? mix of staff, local offices, local volunteers, etc.)
- 2015 Membership Year end country metrics review for India, China, Japan, USA
- Build presentation for MGA Board with recommendation for dues for extremely low income countries

**Status**

- In Process
- Initial Discussion in May
- In Process

**4th Quarter 2015**

- Final review of 2015 progress against Japan & India Plans
  - Recommendations for 2016 provided to MGA Board
- Present recommendations on dues for very low income countries to the MGA Board at the November 2015 meeting

**Status**

- ✔
- ✔
Impact of our 2015 Plans on IEEE

- Results and lessons learned for India and Japan tactical implementation
- Review & recommendation regarding membership dues for extremely low income countries

2015 Strategic Direction & Environmental Assessment Committee

SD&EA Chair: Toshio Fukuda
Nagoya, Japan

Past Chair & MGA Vice President: Wai-Choong (Lawrence) Wong
Singapore

Past Vice President, Technical Activities
Louisville, KY, USA

Partner and Support
Jamie Moesch
Piscataway, NJ, USA

Fanny Su
Singapore
Japan Membership Revitalization SWOT Summary

**Strengths**
- Member retention of 90%+ in every section
- IEEE Publications & Conferences
- Currently Japan Council is sponsored (via human resource) by 8 companies Toshiba, Fujitsu, Mitsubishi, NEC, NTT, Hitachi, Sumitomo, KDDI
- Currently have staff presence in Japan
- Strong brand awareness with academics
- Existing relationships with Academia, National Societies & Corporations
- Many researchers in academia/companies

**Weaknesses**
- Poor Industry penetration outside Tokyo & other than 8 sponsoring companies
- Low Member Recruitment esp. student members
- Low value proposition for local membership
- Few OUs: Student Branches, Chapters, AGs
- Lack of young volunteers/local activities
- Could be seen as too theoretical because over 70% of members have PhD
- Many potential members may not speak/read English
- Low brand awareness outside academia
- Professors do not understand IEEE value beyond publications

**Opportunities**
- Further the collaborations of existing NSA and SSA
- IEEE has global branding/connections
- Strong influence of professors
- Need for more information in Japanese (e.g. Website, Publications)
- Attract more industry practitioners
- Potential for more volunteers (but must be invited), more OUs
- Leverage on the strong influence of Japan Council volunteers
- Leverage on the 8 major supporting corporations
- Expand relationships and sponsorship beyond the 8 companies, involve more from emerging fields
- Up-grading the English proficiency of Engineers
- Japanese government “G30” plans to globalize
- Global Career resources for young researchers/students

**Threats**
- Japanese associations providing more relevant benefits
- Open Access may result in less members joining who are here for society journals
- Demographic imbalance (aging population without offsetting new members)
- # of Students entering and graduating from engineering programs
- Economy in recession/stagnation, budget cuts and less support from Industry

### Tactical Implementation

**Better collaboration with Industry**
- Establish IEEE MGA Industry Advisory Board in Japan
- Develop co-marketing industry recruitment campaign with relevant IEEE Societies (RAS, Computer, ComSoc, PES, etc.)
- Tokyo based Metro Area Workshop
- Participate in key practitioner conferences and events to extend visibility with Industry

**Conduct more relevant events for Practitioners & Young Professionals**
- Establish leader for improving Young Professionals program in Japan
- Conduct 4 Young Professional Networking events in 2015
- Establish 3 Young Professionals groups in sections outside Tokyo
- Ensure Tokyo Metro Area Workshop has Young Professionals component
### India Membership: SWOT

#### Strengths
- Student recruitment
- IEEE Brand is trusted/valued
- Publications
- Conferences
- Support for IEEE professionals throughout country and culture
- Energetic students & young professionals
- Improving trend of Higher Grade members
- IEEE’s Social Media presence can be used to connect with young people
- Vibrant and growing sections
- Volunteerism is wide spread in India

#### Weaknesses
- Higher Grade recruitment
- Student retention
- Sections too widely distributed and focused on cities
- Appears that pricing is considered high
- Possible issues with payment in USD
- Postal delivery issues for magazines
- High # of Student branches with <12 mbrs (40%)
- High Ratio of student branches to sections and no plan for how the section can work with this
- Succession planning for volunteer leadership
- Career tools not fine tuned to Indian perspectives
- Diversified interests of volunteers across India

#### Opportunities
- Improve relevance to industry
- Allow for payment of member dues by members through their bank/wire transfer
- Reward student branches according to their retention rates (pay higher rebate for retention)
- Create more opportunities for professional networking
- Create more opportunities for career development
- Improve connections between student branches and sections/chapters
- Develop operational plan that recommends methodology because of high ratio (branch/section)
- Formal program to develop relationships with Companies, Gov’t Ministries, Univ
- Leverage India Gov’t initiatives to drive education as there are large investments in this area
- More formal programs to target and retain IT professionals (incl. CS & CE)
- Market social innovation side of IEEE
- Potential for forming more GeoUnits (sections/sub-sections)
- Target Post-Graduates (e.g. Masters/PhD)
- Build up GOLD program
- Better leverage conferences to expand our presence in India
- Tapping India volunteers for larger positions
- Lower priced student membership

#### Threats
- ACM and other societies at lower prices
- Alienating large groups of students and turning them off to IEEE in the future
- Alienating energetic & engaged GOLD members
- Poor conference quality could damage IEEE Brand
- Lack of common goals
- Competition in Open Access arena

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### Japan Strategy

#### Data
- Data capture
- Segmentation

#### Strategies
- Formulation
- Prioritization

#### Tactics
- Formulation
- Prioritization

#### Implement
- Programs & Activities
- Leadership
# Recommended Strategies - Japan

## Current Top Choices to move to Tactical Planning stage
- Better Collaboration with Industry –within and outside of the 8 sponsoring companies
- Conduct more relevant technical events and conferences for practitioners & young professionals

## Strategic Priority: Other High
- Facilitate awareness of Japanese technology professionals in the global marketplace
- Better incorporation of Japanese language in IEEE materials
- Programs to improve “English for Engineers” proficiency

## Strategic Priority: Medium
- Develop specific Membership Market Development plan in conjunction with Japan Volunteers & Staff
- Better collaboration with technology and economic development associations in Japan
- Grow volunteer base
- Grow student membership (via programs outside of standard membership development) e.g. expand student branches, more student volunteers

Notes: More detail, and initial tactics for consideration on next two pages
We will not have the resources to implement every strategy

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# India Strategy

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- Data capture
- Segmentation

**Strategic**
- Formulation
- Prioritization

**Tactical**
- Formulation
- Prioritization

**Implementation**
- Programs & Activities
- Leadership
### Recommended Strategies – India

**Strategic Priority: High**
- Improve relevance and partnerships of IEEE to industry, academic, and government sectors
- Develop programs to enhance membership growth and retention, particularly for young professionals and student members

**Strategic Priority: Medium**
- Improve interactions and engagement among different components of organizational units
- Develop clearly articulated, volunteer opportunity and evolution paths

**Strategic Priority: Lower**
- Expand outreach of IEEE relevance beyond cities
- Improve mechanisms of membership dues payment
TO: IEEE Member and Geographic Activities Board – 20 June 2015

FROM: Toshio Fukuda, MGA Vice Chair-Strategic Management and Analysis, MGA Strategic Development and Environmental Assessment Committee Chair

SUBJECT: MGA Strategic Development and Environmental Assessment (SD&EA) Committee Report

SD&EA is the vital part of SM&A and has the following priorities in 2015:

1. Oversee implementation of Japan and India plans developed for 2015.
2. The Japan initiative has been developed to promote the Industry Promotion Committee (IPC) and the Metropolitan Area Workshop (WAW) was held on May 15 and 16, 2015.
3. The India initiatives has been developed for the working packaged program to identity the activities in 2015 for the entrepreneur, internship, industry and students to improve the retention of student members.
4. Develop better understanding of how to improve IEEE Membership’s value to “practitioners.”
5. Determine if we can offer a lower dues rate to potential members in very low income countries – With limited financial risk to current dues model.

Committee members: Maike Luiken, Sreeraman Rajan, Costa Stasopoulos, Deepak Mathur, Jacek Zurada, Toshitaka Tsuda, Cecelia Jankowski, Lawrence Wong (Past Chair & MGA Vice President), Toshio Fukuda (Chair), Jamie Moesch, Fanny Su, Yukou Mochida (Japan Coordinator), MGPL Narayana (India Coordinator).
2015 Plans
SD&EA* Committee

Toshio Fukuda,
Vice Chair, Strategic Management and Analysis

Initial Committee Goals

* Strategic Direction and Environmental Assessment
2015
Strategic Direction & Environmental Assessment Committee

SD&EA Chair:
Toshio Fukuda
Nagoya, Japan

Costas Stasopoulos
Nicosia, Cyprus

Deepak Mathur
Ahmedabad, Gujarat, India

Toshitaka Tsuda
Tokyo, Japan

Past Chair & MGA Vice President:
Wai-Choong (Lawrence) Wong
Singapore

Maike Luiken
Sarnia, ON, Canada

Sreeraman Rajan
Kanata, ON, Canada

Jacek Zurada
Louisville, KY, USA

Cecelia Jankowski
Piscataway, NJ, USA

Partners and Support

Jamie Moesch
Piscataway, NJ, USA

Fanny Su
Singapore
2015 Priorities

- Oversee implementation of Japan and India plans developed in 2013/2014

- Develop better understanding of how to improve IEEE Membership’s value to practitioners
  - Research project began in 2013

- Determining if we can offer a lower dues rate to potential members in very low income countries
  - With limited financial risk to current dues model
Quick Update:
2015 Committee Activities

- Japan Update
- India Update
- “Practitioners” Research
Japan Strategy

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- Segmentation

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- Formulation
- Prioritization

Tactical
- Formulation
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Implement
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Recommended Strategies - Japan

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- Grow volunteer base
- Grow student membership (via programs outside of standard membership development) e.g. expand student branches, more student volunteers

Notes: More detail, and initial tactics for consideration on next two pages
We will not have the resources to implement every strategy
Japan Plan Update

- Meeting with JC at Sections Congress 2014 to discuss actions related to Japan strategy plan
- Masaki Koyama (2014 JC Chair) has taken clear leadership role with hand-over to Tomonori Aoyama (2015 JC Chair) in 2015
- Established Protem Industry Promotion Committee with formalization in Dec 2014 (Leader: Yukuo Mochida from Fujitsu)
- Completed survey of IEEE members and non-members from industry in Sep 2014
- 2nd Young Professionals AG formed in Oct 2014 in Kansai Section
- Tokyo Metro Area Workshop in May 15 and 16, 2015
- Events held:
  - Workshop - Industry Promotion on 8 Nov [JC]
  - Workshop – Engineers in Industry on 9 Nov [Tokyo Section]
  - Workshop in conjunction with Students and Women In Engineering on 25 Nov [JC & Kansai Section WIE]
India Strategy

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- Data capture
- Segmentation

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- Formulation
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- Formulation
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Implement
- Programs & Activities
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Recommended Strategies – India

**Strategic Priority: High**
- Improve relevance and partnerships of IEEE to industry, academic, and government sectors
- Develop programs to enhance membership growth and retention, particularly for young professionals and student members

**Strategic Priority: Medium**
- Improve interactions and engagement among different components of organizational units
- Develop clearly articulated, volunteer opportunity and evolution paths

**Strategic Priority: Lower**
- Expand outreach of IEEE relevance beyond cities
- Improve mechanisms of membership dues payment
India Plan Update

- Accepting HG payment in Rupees through MCI (3rd Party); Challan payment that can be brought to bank branches by members and potential members is in development
- Bangalore Metro Area Workshop held on 26-27 Sep [~200+ attendees with ~50+ new member signups]
- Harish Mysore has started many endeavors & MoU’s from India office
- 3 key areas of activities identified and on-going efforts to identify leaders:
  - Improving Industry engagement and promotion
  - Internship program
  - Setting up a task force team to work on tactical objectives to improve Student retention
- Established the flow chart and work plan
Practitioner Research

- Data
  - Interviews with key stakeholders
  - Focus group assessment

- Strategies
  - Design & Conduct survey

- Tactical
  - Analyze survey
“Practitioners” Research:

Task undertaken by SD&EA Committee
Sub-team: Lawrence Wong, Bob Hebner, Dan Coode, El Nolley
Staff engaged: Jamie Moesch, Kuangyuunn Chiu, Elena Gerstmann, Marc Beebe
External Vendor: The Wedewer Group

Current State
Completed 2 Online Focus Groups

Key Findings:
- “Practitioners” not the right term
- “Working engineers” jump between phases of product development as the need requires
- Must focus on phases of work; testing Brookhaven NL Tech readiness model
- Need to develop logical segmentation, then focus on the needs of those segments
- Name may be something we have to “brand” later

Next Steps
1. Currently working with small set of focus group and volunteers to refine phase model
2. Conduct online survey
   - Members, former members, non-members
   - Broad enough to cover key work areas
   - Focus will be on segmentation of needs
   - Goal is to define the key areas where we will have the greatest return on efforts
3. Final report by end of Q1 2015
   - May contain basic recommendations; or at least give clear direction on where to focus additional research
SD&EA 2015 Quarterly Objectives
1st Quarter 2015

- Review activities of 2014 Committee
- Establish sub-teams leads for key activities
  - India, Japan, Practitioner Research
- Finalize 2015 India and Japan Task Force Teams
- Review MGA Strategy
- Finalize ‘Practitioner’ Survey design and field responses
- Finalize 2015 Calendar for India activities
  - Plan must define accountability
- Finalize 2015 Calendar for Japan activities
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Status
2nd Quarter 2015

- Review very low dues income presentation
- India plan implementation underway exact action items TBD
- Japan plan implementation underway exact action items TBD
- Review results of ‘Practitioner’ Survey
3rd Quarter 2015

- Checkpoint of progress against implementation of Japan and India tactical plans
- Take stock of efforts in Japan, India, China, and USA and determine the best way to move forward in each (e.g. What worked well? What can be improved? mix of staff, local offices, local volunteers, etc.)
- 2015 Membership Year end country metrics review for India, China, Japan, USA
- Build presentation for MGA Finance Committee and Operating Committee with recommendation for dues for extremely low income countries
- Determine next steps for ‘Practitioner’ research
  - Near term tactical projects that could be considered
  - Additional research requirements if needed
4th Quarter 2015

- Final review of 2015 progress against Japan & India Plans
  - Recommendations for 2016

- Present results of practitioner research to MGAB, possibly IEEE Board at November 2015 meeting

- Present recommendations on dues for very low income countries to the MGA Board at the November 2015 meeting
Impact of our 2015 Plans on IEEE

- Results and lessons learned for India and Japan tactical implementation
- Review & recommendation regarding membership dues for extremely low income countries
- Improved understanding how we can significantly improve IEEE relevance to practitioners
  - Direct recommendations on tactics
Questions and Discussion
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- Poor Industry penetration outside Tokyo & other than 8 sponsoring companies
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**Opportunities**
- Further the collaborations of existing NSA and SSA
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- Attract more industry practitioners
- Potential for more volunteers (but must be invited), more OUs
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**India Membership : SWOT**

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2015 Committee Activities

- Japan Update
- India Update
- “Practitioners” Research
Japan Strategy

- **Data**
  - Data capture
  - Segmentation

- **Strategic**
  - Formulation
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- **Implementation**
  - Programs & Activities
  - Leadership

8/11/2015
Recommended Strategies - Japan

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  - Setting up a task force team to work on tactical objectives to improve Student retention
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Data
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Strategies
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Tactical
- Design & Conduct survey

Implement
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Review very low dues income presentation

India plan implementation underway exact action items TBD

Japan plan implementation underway exact action items TBD

Review results of ‘Practitioner’ Survey
3rd Quarter 2015

- Checkpoint of progress against implementation of Japan and India tactical plans
- Take stock of efforts in Japan, India, China, and USA and determine the best way to move forward in each (e.g. What worked well? What can be improved? mix of staff, local offices, local volunteers, etc.)
- 2015 Membership Year end country metrics review for India, China, Japan, USA
- Build presentation for MGA Finance Committee and Operating Committee with recommendation for dues for extremely low income countries
- Determine next steps for ‘Practitioner’ research
  - Near term tactical projects that could be considered
  - Additional research requirements if needed
4th Quarter 2015

- Final review of 2015 progress against Japan & India Plans
  - Recommendations for 2016

- Present results of practitioner research to MGAB, possibly IEEE Board at November 2015 meeting

- Present recommendations on dues for very low income countries to the MGA Board at the November 2015 meeting
Impact of our 2015 Plans on IEEE

- Results and lessons learned for India and Japan tactical implementation
- Review & recommendation regarding membership dues for extremely low income countries
- Improved understanding how we can significantly improve IEEE relevance to practitioners
  - Direct recommendations on tactics
Questions and Discussion
Appendix
Japan Membership Revitalization SWOT Summary

**Strengths**
- Member retention of 90%+ in every section
- IEEE Publications & Conferences
- Currently Japan Council is sponsored (via human resource) by 8 companies Toshiba, Fujitsu, Mitsubishi, NEC, NTT, Hitachi, Sumitomo, KDDI
- Currently have staff presence in Japan
- Strong brand awareness with academics
- Existing relationships with Academia, National Societies & Corporations
- Many researchers in academia/companies

**Weaknesses**
- Poor Industry penetration outside Tokyo & other than 8 sponsoring companies
- Low Member Recruitment esp. student members
- Low value proposition for local membership
- Few OUs: Student Branches, Chapters, AGs
- Lack of young volunteers/local activities
- Could be seen as too theoretical because over 70% of members have PHd
- Many potential members may not speak/read English
- Low brand awareness outside academia
- Professors do not understand IEEE value beyond publications

**Opportunities**
- Further the collaborations of existing NSA and SSA
- IEEE has global branding/connections
- Strong influence of professors
- Need for more information in Japanese (e.g. Website, Publications)
- Attract more industry practitioners
- Potential for more volunteers (but must be invited), more OUs
- Leverage on the strong influence of Japan Council volunteers
- Leverage on the 8 major supporting corporations
- Expand relationships and sponsorship beyond the 8 companies, involve more from emerging fields
- Up-grading the English proficiency of Engineers
- Japanese government “G30” plans to globalize
- Global Career resources for young researchers/students

**Threats**
- Japanese associations providing more relevant benefits
- Open Access may result in less members joining who are here for society journals
- Demographic imbalance (aging population without offsetting new members)
- # of Students entering and graduating from engineering programs
- Economy in recession/stagnation, budget cuts and less support from Industry
Tactical Implementation

Better collaboration with Industry

- Establish IEEE MGA Industry Advisory Board in Japan
- Develop co-marketing industry recruitment campaign with relevant IEEE Societies (RAS, Computer, ComSoc, PES, etc.)
- Tokyo based Metro Area Workshop
- Participate in key practitioner conferences and events to extend visibility with Industry

Conduct more relevant events for Practitioners & Young Professionals

- Establish leader for improving Young Professionals program in Japan
- Conduct 4 Young Professional Networking events in 2015
- Establish 3 Young Professionals groups in sections outside Tokyo
- Ensure Tokyo Metro Area Workshop has Young Professionals component
India Membership: SWOT

**Strengths**
- Student recruitment
- IEEE Brand is trusted/valued
- Publications
- Conferences
- Support for IEEE professions throughout country and culture
- Energetic students & young professionals
- Improving trend of Higher Grade members
- IEEE’s Social Media presence can be used to connect with young people
- Vibrant and growing sections
- Volunteerism is wide spread in India

**Weaknesses**
- Higher Grade recruitment
- Student retention
- Sections too widely distributed and focused on cities
- Appears that pricing is considered high
- Possible issues with payment in USD
- Postal delivery issues for magazines
- High # of Student branches with <12 mbres (40%)
- High Ratio of student branches to sections and no plan for how the section can work with this
- Succession planning for volunteer leadership
- Career tools not fine tuned to Indian perspectives
- Diversified interests of volunteers across India

**Opportunities**
- Improve relevance to industry
- Allow for payment of member dues by members through their bank/wire transfer
- Reward student branches according to their retention rates (pay higher rebate for retention)
  - Also consider incenting the section for this activity
- Create more opportunities for professional networking
- Create more opportunities for career development
- Improve connections between student branches and sections/chapters
  - Develop operational plan that recommends methodology because of high ratio (branch/section)
- Formal program to develop relationships with Companies, Gov’t Ministries, Univ
- Leverage India Gov’t initiatives to drive education as there are large investments in this area
- More formal programs to target and retain IT professionals (incl. CS & CE)
- Market social innovation side of IEEE
- Potential for forming more GeoUnits (sections/sub-sections)
- Target Post-Graduates (e.g. Masters/PhD)
  - Build up GOLD program
- Better leverage conferences to expand our presence in India
- Tapping India volunteers for larger positions
- Lower priced student membership

**Threats**
- ACM and other societies at lower prices
- Alienating large groups of students and turning them off to IEEE in the future
- Alienating energetic & engaged GOLD members
- Poor conference quality could damage IEEE Brand
- Lack of common goals
- Competition in Open Access arena
SD&EA* Committee Report

Wai-Choong (Lawrence) Wong,
Vice Chair, Strategic Management and Analysis

IEEE MGA Board Meeting
22 Nov 2014

* Strategic Direction and Environmental Assessment
Reminder: 2014 Priorities

- Oversee implementation of Japan and India plans developed in 2013
- Review and refine China membership plan
- Regular reporting of progress against country metrics to the committee (for priority countries)
  - China, United States, India, Japan
- Develop better understanding of how to improve IEEE Membership’s value to practitioners
2014
Strategic Direction & Environmental Assessment Committee

SD&EA Chair:
Wai-Choong (Lawrence) Wong
Singapore

Past Technical Activities VP:
Bob Hebner
Austin, TX, USA

Celia Desmond:
Missassauga, ON, Canada

Deepak Mathur
Ahmedabad, Gujarat, India

Dan Coode
Saskatoon, SK, Canada

Kukjin Chun
Seoul, South Korea

Maike Luiken
Sarnia, ON, Canada

Cecelia Jankowski
Piscataway NJ USA

Al Reinhart
Boylston, MA, USA

Ellis Nolley
Saint Paul, MN, USA

Jamie Moesch
Piscataway, NJ, USA

Fanny Su
Singapore

Partners and Support
## Formation of Sub Teams

<table>
<thead>
<tr>
<th>India Implementation Task Force Team</th>
<th>Japan Implementation Task Force Team</th>
<th>Practitioner Research Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deepak Mathur</td>
<td>Lawrence Wong</td>
<td>Dan Coode</td>
</tr>
<tr>
<td>Celia Desmond</td>
<td>Kukjin Chun</td>
<td>Bob Hebner</td>
</tr>
<tr>
<td>Al Reinert</td>
<td>Maike Luiken</td>
<td>El Nolley</td>
</tr>
</tbody>
</table>
Japan Strategy

Data
- Data capture
- Segmentation

Strategic
- Formulation
- Prioritization

Tactical
- Formulation
- Prioritization

Implementer
- Programs & Activities
- Leadership
Japan Plan Update

- Meeting with JC at Sections Congress 2014 to discuss actions related to Japan strategy plan
- Masaki Koyama (2014 JC Chair) has taken clear leadership role with hand-over to Tomonori Aoyama (2015 JC Chair) in 2015
- Established Protem Industry Promotion Committee with formalization in Dec 2014 (Leader: Yukuo Mochida from Fujitsu)
- Completed survey of IEEE members and non-members from industry in Sep 2014
- 2nd Young Professionals AG formed in Oct 2014 in Kansai Section
- Events held:
  - Workshop - Industry Promotion on 8 Nov [JC]
  - Workshop – Engineers in Industry on 9 Nov [Tokyo Section]
  - Workshop in conjunction with Students and Women In Engineering on 25 Nov [JC & Kansai Section WIE]
- Events planned:
  - Tokyo Metro Area Workshop in May/Jun 2015
India Strategy

Data:
- Data capture
- Segmentation

Strategic:
- Formulation
- Prioritization

Tactical:
- Formulation
- Prioritization

Implement:
- Programs & Activities
- Leadership
India Plan Update

- Accepting HG payment in Rupees through MCI (3rd Party); Challan payment that can be brought to bank branches by members and potential members is in development.
- Bangalore Metro Area Workshop held on 26-27 Sep [~200+ attendees with ~50+ new member signups].
- Harish Mysore has started many endeavors & MoU’s from India office.
- 3 key areas of activities identified and on-going efforts to identify leaders:
  - Improving Industry engagement and promotion.
  - Internship program.
  - Setting up a task force team to work on tactical objectives to improve Student retention.
Practitioner Research

- **Data**
  - Interviews with key stakeholders

- **Strategic**
  - Focus group assessment

- **Tactical**
  - Design & Conduct survey

- **Implement**
  - Analyze survey
“Practitioners” Research:

Task undertaken by SD&EA Committee
Sub-team: Lawrence Wong, Bob Hebner, Dan Coode, El Nolley
Staff engaged: Jamie Moesch, Kuangyuunn Chiu, Elena Gerstmann, Marc Beebe
External Vendor: The Wedewer Group

Current State
Completed 2 Online Focus Groups

Key Findings:
- “Practitioners” not the right term
- “Working engineers” jump between phases of product development as the need requires
- Must focus on phases of work; testing Brookhaven NL Tech readiness model
- Need to develop logical segmentation, then focus on the needs of those segments
- Name may be something we have to “brand” later

Next Steps
1. Currently working with small set of focus group and volunteers to refine phase model
2. Conduct online survey
   - Members, former members, non-members
   - Broad enough to cover key work areas
   - Focus will be on segmentation of needs
   - Goal is to define the key areas where we will have the greatest return on efforts
3. Final report by Q1 2015
   - May contain basic recommendations; or at least give clear direction on where to focus additional research
China Membership Dev Review

On-going activities:
- 70% of one headcount in China office dedicated to Membership
- Providing quick response and better service to Chinese members
- Section vitality
- Industry engagement
- National society collaborations
- Student Branch Engagement Activities
  - Including but not limited to contest sponsored by Microsoft Research
- Membership Development Activities at Conferences and Events
- Chinese Language Printed Version of IEEE Spectrum Magazine
- Establishing IEEE brand name and public visibility
3rd & 4th Quarter 2014

- Checkpoint of progress against implementation of Japan and India tactical plans
- 2014 Membership Year end country metrics review for India, China, Japan, USA
- Implement practitioner research plan
- Final review of 2014 progress against Japan & India Plans
  - Recommendations for 2015
- Dashboards fully implemented
- Present results of practitioner research to MGAB at November 2014 meeting

Status

- ✓ Checkpoint of progress against implementation of Japan and India tactical plans
- ✓ 2014 Membership Year end country metrics review for India, China, Japan, USA
- ✓ Implement practitioner research plan
- ✓ Final review of 2014 progress against Japan & India Plans
- ✓ Recommendations for 2015
- ✓ Dashboards fully implemented
- ✓ Present results of practitioner research to MGAB at November 2014 meeting

Q1 2015
Impact of our 2014 Plans on IEEE

- Results and lessons learned for China, India, and Japan plans
- Consultative implementation of strategies with geo-unit leadership takes time; Identification of leaders to execute strategic tactical items took longer than expected
- Japan strategy implementations are secured and momentum building up
- India strategy will take off with identification of leaders
- Improved understanding how we can significantly improve IEEE relevance to practitioners
End of Report
Japan Workshop Summary

Jamie Moesch
Senior Director, IEEE Member Experience

Japan Workshop on Industry Promotion
8 November
Tokyo, Japan
Summary Feedback from Japan Workshop

Action Recommendation Ideas

- Develop program that allows Industry ‘Practitioners’ a way to post a question and get answer from another member/expert
- Consider having Life Members available to mentor Young Professionals
- Develop in Company IEEE Networks (Corporate ‘Branches’)
- Clear marketing of value for ‘practitioners’ in Japan
- Conduct local technical workshops with content for ‘practitioner’ value
- Integration of Japanese Language in myIEEE and Collabratec Portal
- Awards program for Young Professionals from Industry
  - Not Paper Related
- Programs with Famous speakers
- Senior Member “Round Ups” where other members nominate potential Senior Members
- IEEE Standards (Tutorial Workshops/ Japanese Online Network)
- Develop “English for Engineers” Program with Japan Life Members
- Increase Student Activities/Membership
  - More programs for Students
  - Increase number of Student Branches
- Networking for Young Professionals in Industry
  - In Person and Online
  - It is OK if events include nonmembers
- Increase Women In Engineering Activities/Membership
Summary Feedback from Japan Workshop

Method Suggestions

- Conduct another Survey to refine the needs assessment
- Coordinate marketing activities with National Societies
- Conduct more industry events with National Societies
  - To get the many industry professionals who are not members of either
- IEICE Membership Development suggestion:
  - Call bosses at companies and tell them how many IEEE/National Society members they have vs. their competitors
- If ‘English for Engineers’: needs to be basic and not too advanced
- Can Mitsubishi model that was discussed be replicated?
- Focus some effort on educating the “bosses” at companies
  - Give them clear Value Proposition
  - Ask what they need
  - Possibly find IEEE Members who are bosses
  - Find way to show them IEEE gives employees ‘Knowledge for the Future’
  - Consider an IEEE Journal on Industry Management (slightly different than Engineering Management Journal)
- Consider having members ‘translate’ IEEE content for business leaders at companies
  - How will this technology possibly impact their company?
Other Notes of Interest (no particular order)

- Need to prioritize which disciplines/industries we will initially focus upon
- Within the company is very important that we get the “boss” to be supportive. We may want to go to a few companies and ask how IEEE can serve unmet needs for their employees.
- We will have to watch the impact of the lower Yen/Dollar exchange rate
- Are there other ways to address that we are explained by the media as an academic society?
- Develop a unique value proposition we can deliver on, before significant marketing effort. Once we get the members, want to make sure they stay.
- Assess fee after value proposition is improved and clarified
- How to integrate IEEE Society Activities?
  - Future Directions / ‘Solution space’ activities would likely be well received in Japan
- Metro Area Workshop (MAW) Planning
  - Review the event content and style of Women In Leadership Conference; Region 8,9, and 10 Student/YP Conferences
  - Conduct Question and Answer session with past MAW leaders
For Consideration: Proposed Next Steps

Consolidate all feedback into single document
- Attendee feedback forms from Day 2
- Other notes from committee members

Conduct Planning and Prioritization Session
- Ensure feedback summary is complete
- Prioritize the suggestions
  - “MoSCoW” (Must, Should, Could, Won’t) Exercise
  - Rank order “Musts” and “Shoulds”
- Develop Initial Plans for Musts

Develop 2014 Monthly Action “To Do” Calendar
- Breakout each task required
- Establish someone accountable for each item
Survey Summary for Japanese Industry Promotion Workshop

November the 8\textsuperscript{th}, 2014

IEEE Japan Council
IPC Workshop

Survey

Nov.8th, 2014

Thank you for attending IPC workshop. Please answer the following question.

(1) Check the presentations and the panel that have impressed you most.

- IEEE Regin10 as Career Development for Global Readers
- IEEE Japan Strategy –Enhancing Member Value and Membership Growth
- Looking Back on My IEEE Activities
- The Result of Survey for Young Professionals and Practitioners
- Panel Discussion on How IEEE Supports Young Professionals and Practitioners in Japanese Industry

Reason:

(2) Was this workshop useful?

(3) Did you understand the new direction for young professionals and practitioners in industry?

(4) What do you expect for IEEE’s activities from now?

(5) Describe freely.
(1) Check the presentations and the panel that have impressed you most.

Panel Discussion on How IEEE Supports Young Professionals and Practitioners in Japanese Industry

The Result of Survey for Young Professionals and Practitioners

Several attendants checked plural checkboxes.

The Result of Survey for Young Professionals and Practitioners

Looking Back on My IEEE Activities

IEEE Japan Strategy – Enhancing Member Value and Membership Growth

IEEE Regin10 as Career Development for Global Leaders

(20)

(15)

(8)

(2)

(1)
IEEE Japan Strategy – Enhancing Member Value and Membership Growth

Comments

- Number of National Societies is decreasing.
- I could understand the stance of IEEE toward Japanese Engineers.
- Japanese companies do not evaluate the IEEE activities of engineers. US companies are good in this respect.
- I could now understand the IEEE’s direction.
- I realized the peculiarities of Japanese members in reference to global standards (English).
- I am a student member. Only this and Panel sessions gave me better perspective about IEEE (English).
- This talk is compact and impressive about IEEE activities (English).
The Result of Survey for Young Professionals and Practitioners

Comments

• This explained the present situation of Japan and points that should be improved.
• This presentation was easy to understand and showed the data.
• The result and analysis of this survey was good.
• I could see the expectation of non-members and difference of Japan and overseas.
• I could understand the difference of US and Japanese, for example carrier development.
• I could understand IEEE’s stance on the basis on the survey.
• Many statistics are good. I could understand IEEE.
• I could understand the various issues because of survey.
• IEICE discussed the same. I was interested in the same and different perspectives.
• New information was got.
Panel Discussion on the IEEE Supports Young Professionals and Practitioners in Japanese Industry

Comments

• I could understand the IEEE thru bilateral discussions.
• Discussion was good to me.
• I could discuss very actively.
• Good discussion was done.
• Fruitful discussion was done because of the questions from the floor.
• I could discuss the role of IEEE and English issue.
• I could study a lot!
• Many opinions were good.
Was this workshop useful?

Did you understand the new direction for young professionals and practitioners in industry?

What do you expect for IEEE’s activities from now?

Describe freely.

Total Survey Number: 33

Number of items to which the participants wrote comments down.
(2) Was this workshop useful?

Comments

- It was good that the issues of any institutes were discussed.
- I understand the global aspect.
- I felt the expectation to YPs. It is useful to network with various people.
- Owing to the guest speakers from overseas, I now understand the difference between Japan and other countries. There were non-members.
- It was good. I could hear various opinions.
- I could understand IEEE.
- I was good to be able to hear the ideas and thoughts of ‘inside’ IEEE people.
- Discussions were active. The issues were cleared.
- I got various knowledge and opinions.
- I think that the activities by two wheels, academia and industry, will bring new innovations, in particular, new venture business.
- I could understand the IEEE by the views other than attending the technical conferences and workshop.
- I now know the IEEE survey and Mitsubishi’s activity.
Continued

- I think that it would be very significant if the VIPs of industry could attend this workshop.
- I could understand how IEEE thinks about the company activities.
- Yes, students and members could get new perspective of IEEE.
- I came here to attend and get hints from this WS because my profession is environmental science.
- Unfortunately, I could not find the significance of this WS. In particular, I could not understand the merits and benefits of IEEE for the engineers of companies that are not aware of IEEE.
- Yes, in particular, the comments from non-members were interesting.
- It was good for not only because of WS contents but the WS being held by English.
- It was good that I could understand the items unknown to me so far.
- I could understand the position of Japanese industry with respect to IEEE.
(3) Did you understand the new direction for young professionals and practitioners in industry?

Comments

- It will be expected the collaboration with industry engineers.
- I have felt the networking is not so attractive because of Japanese engineers being too busy. However, I now understand various reasons on this.
- I felt that the action plan was necessary.
- Yes, it was explained concretely.
- Yes, the targets are practitioners working in not only 8 hosting companies but other smaller companies.
- Yes, but I still could not understand the motivation for practitioners.
- I deeply felt that it is important to continue from student to the industry in order to elevate my skills.
- It became apparent that the decrease of IEEE members in industry was very important issue in order for Japan to be globalized.
(4) What do you expect for IEEE’s activities from now?

Comments

• Increase of student members.
• Workshop for YPs.
• Clarification of merits for industry practitioners.
• Collaboration among academia and industry. In particular, famous practitioners such as Prof. Nakamura-Novel Prize winner- and S. Jobs should be IEEE members.
• In order for IEEE to truly widen its activity to industry practitioners, issues of practitioners and their solutions should be clarified.
• Chapter workshops and conferences by sections are important to connect universities and industry.
• Lectures for practitioners on current technology.
• Strategies to stop decreasing members in collaboration with national societies.
• IEEE should understand the information that is needed for companies and provide it.
• Training practitioners in English.
• Information provision by Japanese language because translation technology is improving.
• Provisioning of various technology workshop without any fee like this WS.
• Company branch.
(5) Describe freely.

Comments

- I want to get stuffs presented in this WS.
- Talking about English seemed taboo. But I now know that it is not.
- High membership fee is most important because the company does not pay for it. It is necessary to get monetary merit like in the U.S.
- I understood the issues of Japanese IEEE.
- English problem is one thing but I felt other factors were more essential.
- Company needs solution and thus IEEE should provide solution combining many technical societies.
- It should be clarified the merit of increasing membership and member value (cost vs. merits) in view of members.
- IEEE should match engineers and the users like trading companies. This is most important role of IEEE. More students should be IEEE members.
Data from Surveys of Members/Non-Members in Japan

Jamie Moesch
Senior Director, IEEE Member Experience

Japan Workshop on Industry Promotion
8 November
Tokyo, Japan
Purpose of this Presentation and Discussion

Provide attendees a common understanding
- Basic demographics of IEEE Members in Japan
- What do Members in Japan want from IEEE?
- How satisfied are Japanese Members with IEEE?
- Who are non-Members in Japan that could be members?
- What do non-Members want from IEEE?

Guide other workshop discussions
- Can IEEE better serve Technologists & Engineers in Japan?
- What does IEEE need to be doing differently?
- Where should resources be focused for the future?
Membership Statistics: (as of December 2013)

- Japan Total Membership: 14,384 (11,853 in 2003 +21.4%)
  - Higher Grade (without graduate students): 12,407 members
  - Undergraduate: 607 members
  - Graduate Students: 1,370 members

*Note: Student/GSM % of membership: 7.6% in 2003 increased to 13.7% in 2013*

*2012 Segmentation Survey, Higher Grade Members only*

<table>
<thead>
<tr>
<th>Education</th>
<th>IEEE</th>
<th>Japan</th>
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<tbody>
<tr>
<td>Doctoral degree</td>
<td>37%</td>
<td>73%</td>
</tr>
<tr>
<td>Graduate/professional degree</td>
<td>35%</td>
<td>17%</td>
</tr>
<tr>
<td>Bachelor's degree or equivalent</td>
<td>23%</td>
<td>8%</td>
</tr>
<tr>
<td>Some college</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Vocational/ technical degree/certification</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment</th>
<th>IEEE</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational institution</td>
<td>24%</td>
<td>52%</td>
</tr>
<tr>
<td>Private industry</td>
<td>44%</td>
<td>33%</td>
</tr>
<tr>
<td>Public/government</td>
<td>11%</td>
<td>7%</td>
</tr>
<tr>
<td>Non-profit institution (non-educational)</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Retired</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Self-employed/consulting</td>
<td>7%</td>
<td>1%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>Full time student</td>
<td>2%</td>
<td>1%</td>
</tr>
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</table>
2012 Member Segmentation Survey

# of Responses:
Total IEEE: 7,895
Japan: 989
### Reason for joining IEEE:

**Obtaining access to IEEE publications top the list in Japan**

<table>
<thead>
<tr>
<th>Reason</th>
<th>IEEE</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>To remain technically current</td>
<td>67%</td>
<td>43%</td>
</tr>
<tr>
<td>To obtain IEEE publications</td>
<td>62%</td>
<td>65%</td>
</tr>
<tr>
<td>To join IEEE Societies</td>
<td>44%</td>
<td>54%</td>
</tr>
<tr>
<td>To enhance my career opportunities</td>
<td>40%</td>
<td>23%</td>
</tr>
<tr>
<td>To network with others in the profession</td>
<td>39%</td>
<td>24%</td>
</tr>
<tr>
<td>To enhance my stature within the profession</td>
<td>38%</td>
<td>24%</td>
</tr>
<tr>
<td>For continuing education</td>
<td>34%</td>
<td>17%</td>
</tr>
<tr>
<td>To participate in local IEEE activities</td>
<td>24%</td>
<td>16%</td>
</tr>
<tr>
<td>To obtain a reduced registration fee at IEEE conferences</td>
<td>21%</td>
<td>37%</td>
</tr>
<tr>
<td>To give back to my profession</td>
<td>19%</td>
<td>21%</td>
</tr>
<tr>
<td>A professor suggested it</td>
<td>18%</td>
<td>13%</td>
</tr>
<tr>
<td>Recommended by colleague</td>
<td>16%</td>
<td>17%</td>
</tr>
<tr>
<td>To participate in student branch activities</td>
<td>15%</td>
<td>2%</td>
</tr>
<tr>
<td>To have access to discounts on professional &amp; personal services</td>
<td>14%</td>
<td>10%</td>
</tr>
<tr>
<td>To access insurance</td>
<td>11%</td>
<td>1%</td>
</tr>
<tr>
<td>To give back to the world community</td>
<td>11%</td>
<td>13%</td>
</tr>
<tr>
<td>To participate in standards development</td>
<td>10%</td>
<td>7%</td>
</tr>
<tr>
<td>To obtain an IEEE email alias with virus protection</td>
<td>7%</td>
<td>4%</td>
</tr>
<tr>
<td>To participate in public policy</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Through a membership drive</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>To participate in student contests</td>
<td>3%</td>
<td>1%</td>
</tr>
</tbody>
</table>

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*Higher Grade Members (without graduate students)*

**BASE: Total Higher Grade (n=6259) India (n=653) Japan (n=909) US (n=974) China (n=451)**

Q3. Please indicate the major reasons you originally joined IEEE. Please select all that apply.
Japan IEEE Society Memberships
Total 15,660

77% Higher Grade Members in Japan hold at least 1 society membership vs. 56% of Total IEEE Higher Grade Membership

<table>
<thead>
<tr>
<th>Japan Top Society Membership* / as of Dec 2013</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE Computer Society</td>
<td>2,065</td>
</tr>
<tr>
<td>IEEE Communications Society</td>
<td>1,589</td>
</tr>
<tr>
<td>IEEE Electron Devices Society</td>
<td>1,030</td>
</tr>
<tr>
<td>IEEE Signal Processing Society</td>
<td>865</td>
</tr>
<tr>
<td>IEEE Solid-State Circuits Society</td>
<td>778</td>
</tr>
<tr>
<td>IEEE Microwave Theory and Techniques Society</td>
<td>768</td>
</tr>
<tr>
<td>IEEE Robotics and Automation Society</td>
<td>682</td>
</tr>
<tr>
<td>IEEE Photonics Society</td>
<td>665</td>
</tr>
<tr>
<td>IEEE Circuits and Systems Society</td>
<td>593</td>
</tr>
</tbody>
</table>

* Societies with more than 500 members
<table>
<thead>
<tr>
<th>Higher Grade Member</th>
<th>Importance</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Japan</td>
</tr>
<tr>
<td>Online access to transactions, journals, and magazines</td>
<td>84%</td>
<td>89%</td>
</tr>
<tr>
<td>Online access to standards</td>
<td>77%</td>
<td>63%</td>
</tr>
<tr>
<td>Online access to conference proceedings</td>
<td>76%</td>
<td>87%</td>
</tr>
<tr>
<td>Promoting the appreciation of technology and our profession to the general public</td>
<td>70%</td>
<td>58%</td>
</tr>
<tr>
<td>Conferences</td>
<td>69%</td>
<td>86%</td>
</tr>
<tr>
<td>Opportunities for professional networking</td>
<td>68%</td>
<td>58%</td>
</tr>
<tr>
<td>Continuing education opportunities</td>
<td>65%</td>
<td>48%</td>
</tr>
<tr>
<td>Representation on public policy issues related to the profession</td>
<td>62%</td>
<td>42%</td>
</tr>
<tr>
<td>Interaction with other members</td>
<td>59%</td>
<td>55%</td>
</tr>
<tr>
<td>Local meetings with other professionals</td>
<td>56%</td>
<td>57%</td>
</tr>
<tr>
<td>Printed books</td>
<td>54%</td>
<td>58%</td>
</tr>
<tr>
<td>Printed copies of transactions, journals, and magazines</td>
<td>53%</td>
<td>57%</td>
</tr>
<tr>
<td>Online meetings/webinars</td>
<td>53%</td>
<td>40%</td>
</tr>
<tr>
<td>Online career resources</td>
<td>52%</td>
<td>31%</td>
</tr>
<tr>
<td>Forums, newsgroups, and other online collaboration tools</td>
<td>48%</td>
<td>42%</td>
</tr>
<tr>
<td>Contributing to the people of the world through humanitarian efforts</td>
<td>48%</td>
<td>49%</td>
</tr>
<tr>
<td>Ability to participate in standards development</td>
<td>47%</td>
<td>44%</td>
</tr>
<tr>
<td>Internet video programming of conference highlights, author interviews, and so...</td>
<td>47%</td>
<td>48%</td>
</tr>
<tr>
<td>Awards and scholarships</td>
<td>44%</td>
<td>52%</td>
</tr>
<tr>
<td>Printed copies of standards</td>
<td>43%</td>
<td>36%</td>
</tr>
<tr>
<td>IEEE online communities</td>
<td>42%</td>
<td>38%</td>
</tr>
<tr>
<td>Printed copies of conference proceedings</td>
<td>39%</td>
<td>50%</td>
</tr>
<tr>
<td>Having access to and obtaining responsive answers from the IEEE Contact Center</td>
<td>39%</td>
<td>34%</td>
</tr>
<tr>
<td>Opportunities for leadership roles</td>
<td>37%</td>
<td>31%</td>
</tr>
<tr>
<td>Insurance and other financial products and services</td>
<td>35%</td>
<td>16%</td>
</tr>
<tr>
<td>Providing email alias with virus protection</td>
<td>33%</td>
<td>39%</td>
</tr>
</tbody>
</table>
2014 IEEE Japanese Section Survey

- Conducted in Japanese during Q3 2014
- #Responses: Members(605), non-member(652)

<table>
<thead>
<tr>
<th>Age</th>
<th>Member</th>
<th>Non-Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;40</td>
<td>164</td>
<td>340</td>
</tr>
<tr>
<td>40-&lt;60</td>
<td>327</td>
<td>297</td>
</tr>
<tr>
<td>60+</td>
<td>114</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>605</td>
<td>652</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organization you work for</th>
<th>Member</th>
<th>Non-Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>299</td>
<td>43</td>
</tr>
<tr>
<td>Institute</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Company</td>
<td>265</td>
<td>607</td>
</tr>
<tr>
<td>Not employed</td>
<td>33</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>605</td>
<td>652</td>
</tr>
</tbody>
</table>

It is good to have data from non-member segment.

Source: Japan Section Survey 2014
## Category of work

<table>
<thead>
<tr>
<th>What Category is your work classified in?</th>
<th>Member</th>
<th>Non-Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied</td>
<td>200</td>
<td>9</td>
</tr>
<tr>
<td>Basic</td>
<td>139</td>
<td>92</td>
</tr>
<tr>
<td>Development research</td>
<td>137</td>
<td>188</td>
</tr>
<tr>
<td>Development</td>
<td>129</td>
<td>363</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>605</strong></td>
<td><strong>652</strong></td>
</tr>
</tbody>
</table>

What can IEEE do to become relevant to development engineers from industry?

Source: Japan Section Survey 2014
<table>
<thead>
<tr>
<th>Professional Fields</th>
<th># Non-member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecommunication</td>
<td>81</td>
</tr>
<tr>
<td>Electromagnetics</td>
<td>45</td>
</tr>
<tr>
<td>Computers</td>
<td>43</td>
</tr>
<tr>
<td>Device</td>
<td>39</td>
</tr>
<tr>
<td>Microwaves</td>
<td>33</td>
</tr>
<tr>
<td>Semiconductor</td>
<td>28</td>
</tr>
<tr>
<td>Optics and Communication</td>
<td>23</td>
</tr>
<tr>
<td>Software</td>
<td>22</td>
</tr>
<tr>
<td>Antenna</td>
<td>21</td>
</tr>
<tr>
<td>Camera and Video</td>
<td>20</td>
</tr>
<tr>
<td>Information Technology</td>
<td>18</td>
</tr>
<tr>
<td>Circuit and Systems</td>
<td>17</td>
</tr>
<tr>
<td>Robotics</td>
<td>14</td>
</tr>
<tr>
<td>Radio Systems</td>
<td>13</td>
</tr>
<tr>
<td>Mechatronics</td>
<td>10</td>
</tr>
<tr>
<td>Acoustics</td>
<td>9</td>
</tr>
<tr>
<td>Bioelectronics</td>
<td>8</td>
</tr>
<tr>
<td>Power Electronics</td>
<td>8</td>
</tr>
<tr>
<td>Signal Processing</td>
<td>8</td>
</tr>
<tr>
<td>Control</td>
<td>6</td>
</tr>
<tr>
<td>Medical Electronics</td>
<td>6</td>
</tr>
<tr>
<td>Analog</td>
<td>5</td>
</tr>
<tr>
<td>Magnetics</td>
<td>5</td>
</tr>
<tr>
<td>Interface</td>
<td>4</td>
</tr>
<tr>
<td>Material</td>
<td>3</td>
</tr>
<tr>
<td>Others</td>
<td>86</td>
</tr>
</tbody>
</table>

Source: Japan Section Survey 2014
Reasons for joining IEEE
- Existing IEEE Members

### Academic
- Present paper: 22.9%
- Read paper: 17.6%
- Keep technical current: 13.3%
- Follow new field: 12.7%
- Discount for conferences: 11.4%
- Attend conferences: 9.8%
- Understand paper: 4.7%
- Let world know me: 4.4%
- Learn English: 2.0%
- Life member activity: 1.2%
- Career development: 0.0%

### Practitioner
- Present paper: 17.2%
- Read paper: 11.8%
- Keep technical current: 20.3%
- Follow new field: 19.2%
- Discount for conferences: 5.0%
- Attend conferences: 11.0%
- Understand paper: 7.9%
- Let world know me: 3.8%
- Learn English: 2.7%
- Life member activity: 0.9%
- Career development: 0.0%

Source: Japan Section Survey 2014
## Degree Fields

<table>
<thead>
<tr>
<th>What did you major in?</th>
<th># Member</th>
<th>#Non-Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>102</td>
<td>174</td>
</tr>
<tr>
<td>Information</td>
<td>80</td>
<td>112</td>
</tr>
<tr>
<td>Electronics</td>
<td>144</td>
<td>89</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>109</td>
<td>64</td>
</tr>
<tr>
<td>Software</td>
<td>18</td>
<td>45</td>
</tr>
<tr>
<td>Computer</td>
<td>37</td>
<td>43</td>
</tr>
<tr>
<td>Physics</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>Biotechnology</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Computer Science</td>
<td>42</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>43</td>
<td>85</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>605</strong></td>
<td><strong>652</strong></td>
</tr>
</tbody>
</table>

Source: Japan Section Survey 2014
# Reasons Non-members Have Not Joined IEEE

<table>
<thead>
<tr>
<th>Reasons not join IEEE</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fee is high*</td>
<td>137</td>
</tr>
<tr>
<td>Useless for my job</td>
<td>82</td>
</tr>
<tr>
<td>Do not find the need to join</td>
<td>68</td>
</tr>
<tr>
<td>English Problem</td>
<td>50</td>
</tr>
<tr>
<td>Too academic</td>
<td>30</td>
</tr>
<tr>
<td>I can get IEEE's information through my company</td>
<td>9</td>
</tr>
<tr>
<td>Already a member of other societies</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>383</strong></td>
</tr>
</tbody>
</table>

## Separate question asked of IEEE Members:
How much do you think is appropriate for IEEE fees? (Members) JPY 10,000

Source: Japan Section Survey 2014
# Membership in other Associations

<table>
<thead>
<tr>
<th>Member of institutes other than IEEE</th>
<th>Member</th>
<th>Non-Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEICE (The Institute of Electronics, Information and Communication Engineers)</td>
<td>349</td>
<td>115</td>
</tr>
<tr>
<td>IEEEJ (The Institute of Electrical Engineers of Japan)</td>
<td>127</td>
<td>53</td>
</tr>
<tr>
<td>IPSJ (information Processing Society of Japan)</td>
<td>120</td>
<td>58</td>
</tr>
<tr>
<td>JSAP (Japan Society of Applied Physics)</td>
<td>60</td>
<td>33</td>
</tr>
<tr>
<td>ACM (Association for Computing Machinery)</td>
<td>38</td>
<td>4</td>
</tr>
<tr>
<td>JSME (Japan Society of Mechanical Engineers)</td>
<td>36</td>
<td>33</td>
</tr>
<tr>
<td>RSJ(The Robotics Society of Japan)</td>
<td>35</td>
<td>7</td>
</tr>
<tr>
<td>ITE (The Institute of Image Information and Television Engineers)</td>
<td>32</td>
<td>14</td>
</tr>
<tr>
<td>ASJ(the Acoustical Society of Japan)</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>ASME (American Society of Mechanical Engineers)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>IEIJ (The illuminating Engineering Institute of Japan)</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**Note:** Average # of associations joined: Member : 1.4 ; non-member: 0.5
# Needs from an IEEE Portal

<table>
<thead>
<tr>
<th>What kind of services do you expect from IEEE Portal?</th>
<th>Non-Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information *</td>
<td>211</td>
</tr>
<tr>
<td>Xplore</td>
<td>164</td>
</tr>
<tr>
<td>Mail</td>
<td>75</td>
</tr>
<tr>
<td>Others</td>
<td>62</td>
</tr>
<tr>
<td>Social Networking System</td>
<td>53</td>
</tr>
</tbody>
</table>

*Information about conferences and seminars thru emails*
Career Support

**Do you want job placement support? (Member only)**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>309</td>
</tr>
<tr>
<td>No</td>
<td>296</td>
</tr>
</tbody>
</table>

**Do you want information on global companies regarding recruiting?**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>310</td>
</tr>
<tr>
<td>No</td>
<td>295</td>
</tr>
</tbody>
</table>

Global Integration

**Most popular countries for collaboration**

- China
- India
- Singapore
- Taiwan
- South Korea
- Malaysia

Source: Japan Section Survey 2014
Conclusions

Is this a summary profile IEEE can better serve?

- Development Engineers
- Under 40 Years of Age
- Working at Companies
- Degrees in Electronics, IT, & Telecommunications
  (Does this include Power Engineering?)
- No PhD
- May not be members of other associations, even IEEJ, IPSJ, and IEICE
Conclusions

Additional Information is likely needed:

- In what industries do they work?
- What would they want from IEEE membership?
  - Are there unmet needs that IEEE can fill?
For Discussion

- Do the survey responses properly represent the larger population of Engineers & Technologists in Japan?

- Is the profile suggested a proper summary?

- Please share your thoughts about IEEE and whether or not our organization can meet the needs of the target profile
  - What should be done on a local level in Sections?
  - What should be done from IEEE Headquarters?

- Should we change the way membership is promoted in Japan?

- What other questions should we be asking that would help us better serve members and potential members in Japan?
My Sincere Thanks for Your Time

Any other Questions or Comments?
Appendix
# Japan Members by Grade

<table>
<thead>
<tr>
<th>Membership by Grade</th>
<th>Dec-13</th>
<th>Dec-03</th>
<th># Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hornor</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>33.3%</td>
</tr>
<tr>
<td>Fellow</td>
<td>525</td>
<td>453</td>
<td>72</td>
<td>15.9%</td>
</tr>
<tr>
<td>Senior Member</td>
<td>879</td>
<td>665</td>
<td>214</td>
<td>32.2%</td>
</tr>
<tr>
<td>Member</td>
<td>10,538</td>
<td>8,981</td>
<td>1,557</td>
<td>17.3%</td>
</tr>
<tr>
<td>Associate Member</td>
<td>461</td>
<td>856</td>
<td>-395</td>
<td>-46.1%</td>
</tr>
<tr>
<td>Total Higher Grade Member</td>
<td>12,407</td>
<td>10,958</td>
<td>1,449</td>
<td>13.2%</td>
</tr>
<tr>
<td>GSM</td>
<td>1,370</td>
<td>1,370</td>
<td></td>
<td></td>
</tr>
<tr>
<td>StM Total</td>
<td>607</td>
<td>607</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Student Member</td>
<td>1,977</td>
<td>895</td>
<td>1,082</td>
<td>120.9%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>14,384</td>
<td>11,853</td>
<td>2,531</td>
<td>21.4%</td>
</tr>
<tr>
<td>What benefits/convenience could IEEE provide?</td>
<td># Member</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>----------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discount on rent-a-car</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discount on zoo</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discount on aquarium</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discount on restaurant</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
IEEE Practitioners
—A Report of
Bulletin Board Focus Group Research

Prepared By:
Robin Wedewer
President, The Wedewer Group
4701 Paul Hance Road
Huntingtown, MD 20639
(410) 414-5718
robin@wedewergroup.com

July 2014
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Detailed Findings and Participant Quotes .................................................................................. 8
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Methodology
This research was conducted through two separate online discussions utilizing bulletin board focus group technology.

A bulletin board focus group is an asynchronous, threaded discussion typically involving up to 25 individuals over extended periods of time—three days in the case of these focus groups. Research participants log in to the software at a URL with a username and a password to answer questions that are posted and monitored by a moderator. The moderator can follow-up with respondents for clarification of responses, ask new questions or make comments to encourage the discussion. The groups are not conducted in real time, so respondents from time zones around the world can log on at their own convenience during the days of the focus group and take as much time as they want to respond. Observers can watch the groups in progress.

Participants for these bulletin board focus groups were recruited by email utilizing lists of IEEE members. Potential research participants were directed to a short online survey to capture background information about them that aided in the selection of participants in the focus groups. Selection criteria included work type, country and age.

Participants for these groups were divided into two groups based on the type of work they do:

- Design/technical and
- Management.

All discussions were guided by a moderator guide prepared in consultation with staff members from IEEE.

The bulletin board focus groups were hosted Wednesday through Friday, June 11 through 13, 2014. Participants in the bulletin board focus groups were paid US$100 each as a participation incentive.

Focus groups are primarily used for discovery, to determine the direction for further investigation or to uncover the attitudes and opinions of individuals regarding specific issues. Care must be used in the analysis, interpretation and application of solutions derived from such a study since the results should not be considered statistically representative of the groups of interest.

Throughout this report, participants’ comments have been included to illustrate the discussion. These quotes are indicated in italics and are identified by the participants’ first names, where possible, and their group identifier, which correspond to the participant descriptions in tables at the end of this report. All readers are asked to keep personal information about the participants confidential.
Key Findings

- Participants in these focus groups broadly characterized engineers as problem solvers, creators and developers that employ complex concepts and theories to real-world, practical applications.

- Whether it is true or not, participants said that engineers working academia work on a more theoretical level and are less bound by the constraints typical of the commercial environment—budgets, customer requirements, deadlines, etc.

- A general process or algorithm for the engineer’s work follows a predictable path from start to finish, beginning with a keen understanding of the problem or customer requirements, working through a solution design to testing, production, fixes and continuous improvement. This process seems to be fairly common in the commercial environment. Engineers working in consulting and academia, they say, may or may not adhere to this general process.

- Utilizing a scenario exercise and then asking participants directly about engineering job types, we developed a generally agreed-upon list of job types/roles. Naturally, each participant had a different list of these job types based on their own views and experience and some felt that the list was too generic—or unnecessarily specific. Nevertheless, we worked with this list for the remainder of the discussion:
  
  - Program Planners/Managers
• Proposals Engineer
• Research Engineer
• Design Engineer
• Manufacturing Engineer
• Mechanical Design Engineer
• Operations and Productions Engineer
• Architecture and Specifications/Engineer
• Software Design Engineer/Developer
• Quality Assurance Engineer
• Test/Debug Engineer
• Maintenance Engineer
• Customer Interface
• Academic
• Consultant

• For each of the job types/functions, participants provided general job descriptions and, from their own experience, examples of the type of work they do. This detailed information is provided in Table 1 starting on page 13.

• It is the rare engineer who performs only one of these distinct jobs/functions. Not only are lines between roles often blurred, but engineers must often frequently switch from one role to another or perform multiple jobs simultaneously, depending on the project requirements. Often, the responsibility for a task goes to the person with the skills and interest to do the job, even if it is outside their formal job description.

• Specialization can develop from level of experience or job function. One participant said that project engineers generally come from some engineering specialty, such as electrical or mechanical and are based on level of experience (junior, senior, principal or fellow). On the other hand, development engineers usually have some industry focus, such as cardiac device engineers or medical robotics engineers. There are also engineers that specialize in particular engineering functions, such as quality engineers, production and manufacturing engineers.

• Engineers working in academia generally focuses on the development and sharing of knowledge. Those in industry are focused on the application of knowledge. Workers in industry must have a practical, real-world use. They are yoked to the company’s bottom line and all that it entails. They must have a business case for their product (a market demand), adhere tightly to budgets, requirements and deadlines and be able to produce a product—or millions of a product—with efficiency and reliability. That is not to say that engineers working in academia do not have budgets or deadlines. In fact, as academic departments seek to increase funding for their programs they have become increasingly linked to corporate projects—and thus corporate constraints.

• By design, all of the participants in these focus groups were working engineers—as opposed to working in academia or even in commercial research. So it is not surprising that participants in these focus groups identified themselves as “working engineers.” In clarifying why, exactly, they are working engineers, they said that their work is driven by the demands of the market and the
need to support the profit-making activities their employers. Several participants, however, balked at the term “working engineer” since by implication is suggests that those in academia or research are not actually “working.”

- Participants could not reach any consensus on a word or phrase as an alternative to the “working engineer.” Few people were comfortable with the term “practitioner,” even if they acknowledged that they are practicing their art and craft. Many participants pointed out that “practitioner” has strong associations in the medical community, that it is rarely, if ever, seen in reference to engineers in trade publications and that it has such a broad meaning as to be nearly meaningless. Nevertheless, they said that it is not actually inaccurate because they are producing “practical systems.”

- Suggested alternatives to “practitioner” included:
  - Engineer
  - Practicing engineer (versus academic engineer)
  - Engineering professional
  - Technical professional
  - Technocrat
  - Techie
  - Business engineer
  - Application engineer
  - Commercial engineer
  - Project engineer
  - Professional engineer
  - Industry experts
  - Business engineer (versus business researcher)

- Whatever IEEE chooses to call engineers who are not in academia, the best choice may be the one that is applied consistently and regularly. As one focus group participant said, “I’ve been habituated by IEEE over the years, so practitioner seems like a standard term to me now.”

- Practitioners need practical information, but also more theoretical information. Those in research need theoretical information, but also practical information. The differences between the information needs of job types are ones of priority and are dictated by the limited amount of time anyone has to search for and digest information. According to the focus group participants, “practitioners” need information:
  - For targeted problems and to address immediate goals,
  - Related to practical, day-to-day tasks,
  - Related to current challenges, as opposed to future developments, and
  - About developments that could impact their work.

  Furthermore, they said that “practitioners need:
  - To be able to find information they need quickly and
  - Access to those in academia to answer questions about their work.

- For each of the job types/functions, participants provided examples of the types of information needed. This detailed information is provided in Table 2 starting on page 29.
There is a strong preference for immediate availability of information from electronic sources. Participants said that the availability of information is far less an issue today than finding it in the first place. As one participant lamented, in the good old days we had librarians to find information for us. Now, everyone must have search skills to sift for the needle in the haystack.
Detailed Findings and Participant Quotes

Describing the Work of Engineers
To encourage participants to think about the job market for engineers from a non-technical, layperson’s perspective, they were presented with a scenario. Participants were asked to pretend they were planning a talk to a group of high school/secondary school students and were provided with the following instructions.

Imagine you’re talking to a group of high school/secondary school students who show talent and interest in someday pursuing jobs as engineers/technology professionals. But these students don’t know anything about these types of people. There are no engineers/technology professionals in their families or among their families’ friends and associates. These students’ teacher has invited you to the class to provide a general overview of the types of jobs that engineers/technology professionals do.

The teacher has suggested that you organize your talk around general roles/functions, with, say, six, eight or ten or more different types of roles/functions that describe the whole range of work that engineers/technology professionals do.

What would be the distinct roles/functions you would include in your presentation? So, for example, you may include people who work in academic, researchers, technology managers. But how about the rest of the engineers/technology professionals?

Engineers can be inventors and designers. But inventors are also builders, producers and problem solvers. As one participant explained, engineers “connect the ‘real world’ with the new resources of science” so that they have practical, real-world applications.

A good title that would provide a general overview of the engineering profession would be: Problem Solver. Whether that person is in civil, software, electrical, chemical, or any other field, what is common is that each one of them is solving real-world problems by applying science, technology, engineering, and math. These professionals take the scientific method and put it to use. They roughly follow a set of steps:

- Analyze a situation to understand a problem or concept
- Design several possible solutions
- Perform trade-off analyses
- Develop prototypes or experiments to test their theories
- Evaluate their prototypes
- Make changes as necessary
- Communicate their results

Bret (Design/Technical)

Scientists and researchers conceptualize and develop concepts from observations or questions through experimentation or cataloging. Engineers take those concepts and figure out how to make them work using existing materials, tools and methodologies or
sometimes develop new ways of making something useful…Sometimes engineers fall into the roles of both conceptualizer and producer when they can identify a need themselves and then use their education, training, experience and collaborations to create the response to satisfy the need. Ken (Management)

In general, engineers & technology professionals solve complex technical problems. We have a firm understanding of the laws of physics and mathematics and we apply those laws to solve everyday technical problems. A technical problem can be anything from a new or improved product, software application, or system. Eric (Management)

The title of engineer actually covers a wide range of positions. The eventual objective for all those in the field is to take a concept from its very beginning to become an actual product. As such, there are many roles that engineers perform. Shawn (Design/Technical)

Engineers exist because “it” has to work, within cost and schedule and system interface constraints. They are recognized for performance and efficiency. So the best engineers are those that can see the heart of the problem, and find an answer that works within the context in the most efficient manner. Laurence (Design/Technical)

Participants distinguished the work of those working in academia—as well as some working in industry research—as more theoretical and having fewer immediate practical applications.

[Academic and company research is] close to science, applying scientific breakthroughs to generate engineering techniques to handle problems, not necessarily practical but publishable. Charles (Design/Technical)

One participant suggested an algorithm that describes the engineer’s job.

1- Identify opportunities that their knowledge can help to improve some important things involved in the “real world”
2- Listen and learn with the other people about simple—or hard—ideas
3- Manage good or poor ideas, separating the things that can be made of the impossible things
4- Think, think too much about those ideas and how we can made this
5- Research about what already exists about this idea
6- Think: “How I can improve this?”
7- Begin to construct a prototype of the idea. Have fun constructing and improving the idea!
8- Repeat the last point about 1000 times
9- Show the product, or the software, or the model to your client or your boss or your teacher. Return to the point 4 if necessary!
10- Success, you made a good job!

Ricardo (Management)

That algorithm, in fact, is surprisingly close to the types of jobs that engineers do. Participants were asked to identify a set of general and typical engineering jobs, based on role and function rather than industry or training. Of course, there were nearly as many ways of viewing the range of roles and functions in engineering as there were focus group participants. But overall, the following were common job types identified by many of the participants.

- Program Planners/Managers
- Proposals Engineer
- Research Engineer
- Design Engineer
- Manufacturing Engineer
- Mechanical Design Engineer
- Operations and Productions Engineer
- Architecture and Specifications/Engineer
- Software Design Engineer/Developer
- Quality Assurance Engineer
- Test/Debug Engineer
- Maintenance Engineer
- Customer Interface
- Academic
- Consultant

Of course, all of these descriptions are artificial constructs of a more complex reality. For example, it may be that in large companies, the tasks of engineers are more specialized, focusing on a single role or function and that in smaller companies, an engineer can see a product from start to finish, serving any number of roles simultaneously or shifting roles over time as the product nears completion. But many of the focus group participants also pointed out that the functional lines—if they are even lines at all—are blurred. Where one job ends and another begins is not always clear-cut. And engineers will often need to hop from one function to another, as the project and time demands.

An engineer must wear many hats and serve in many roles and functions, not only throughout one’s career, but also throughout each and every day. Adolf (Design/Technical)

The workplace has evolved a great deal in the past few decades as organizations work to extract as much as they possibly can from each individual. Efficiencies are the name of the game today! So at least in the industries and companies I’ve worked at or consulted for - organizations like HP, Kodak (remember them?) and others, it’s just expected that
each individual keep learning and growing and adapt. It can very well happen that someone will just point at you and say “run with this.” So the distinctions and walls between research, development and management are shrinking. Even managers are expected to do development work in their “spare time...” I don’t know that I can say specifically that we have academics, researchers, developers, etc. Everyone appears to do a little of each. When there’s specialization, it occurs because someone is a subject matter expert - mechanical engineer vs. electrical engineer vs. Java specialist vs. database expert, etc...It’s difficult to pin someone down just according to their job title anymore. I do IT work - anything from re-programming web sites to re-wiring the local network structure from router to individual rooms. I write 500 page manuals. I do research and make presentations. I do some sales and marketing (because of my MBA). I go to business meetings and sit in on technical discussions. It’s just a hybrid world these days. Steven (Management)

I think that in looking through the roles, though, that I cannot fit myself into one role. Through my career I have done all or most of them, and on a weekly basis I do many of them. Also, the types of products and services needed fall outside the general category of the job roles (I am thinking of group insurance and retirement planning and career changes). There are diverse jobs, but many commonalities, as evidenced by the large overlap of the descriptions people provided to the fictitious high-school students. Mark (Design/Technical)

There are new roles and new functions being created every day, so no list is complete and the best role or function for you may be waiting for you to create it! Thomas (Design/Technical)

One focus group participant said that this list of engineering jobs and associated tasks is an extreme simplification of reality. He suggested a far more complex approach that takes into account branches and sub-branches of engineering.

In order to fully develop this topic, IEEE needs an ontology of engineering, that relates branches and sub-branches of engineering disciplines to the quality factors of a well-engineered product/system, acknowledges the boundaries of depth/breadth, and provides a necessary/sufficient coverage of the product lifecycle from basic research to development to productization to deployment to decommissioning, and the several dozen sub-phases within that lifecycle. There has to be an acknowledgement of the acquisition community, the user community, the developer community, the retail community, and the sustainment community, because the same job title has different emphasis within each. There’s also the orthogonal set of product communities: the disposables, the reliable components, the raw materials, the integrated systems, and service communities. Each of these communities differs by interests and objectives. A computer integrator wants to know that the box they ship out is satisfactory for a unique customer, while an airplane integrator wants to know that the global optimum has been achieved for a range of customers, and the tools/criteria/methods/communications aspects are different for each.
These differences have to be acknowledged before the process of aggregation and similitude can be addressed, which I suspect IEEE wants to do. But that’s obviously the $64 question!!!! Laurence (Design/Technical)

Throughout the discussion of engineering jobs, it was interesting how frequently participants insisted on the importance of the so-called “soft skills”—communications, teamwork, listening.

Due to increasing complexity in anything, teamwork is the way to work in this area. The increasing complexity lead to the need to handle more and more complex projects, involving many competencies and many experiences. So project management became even more important that in the past. Roberto (Management)

There are times where you need to polish up on your people skills and learn how to take someone under your wing, before you can go up the managerial route. Usually, you’ll be assigned engineers that are ‘greener’ than you so that you can guide them along the path to be a better-skilled engineer. Yi Xiong (Design/Technical)

80% of what an engineer does is communicate. With suppliers, integrators, testers, QA, customers, etc. Another 10% is analysis, and then there’s the remaining administrative stuff we have to do, that gets us the approval to proceed. Laurence (Design/Technical)

**Job Descriptions and Typical Work Responsibilities**

Utilizing the participant-developed list of job types/functions, participants were asked to describe what each job entails and provide some specific examples, based on their own work experience, of the type of activities people in those jobs engage in on a regular basis. Participant verbatim responses are provided in Table 1.
<table>
<thead>
<tr>
<th>Engineering Job</th>
<th>Job Description</th>
<th>Participant Work Activities</th>
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</table>
| Program Planners/Managers      | • Responsible for the overall management of the program or project. This normally involves developing a detailed schedule with specific "work packages" for each task and a project timeline. This allows the manager to monitor the progress and uncover any issues with schedule.  
• Primarily responsible for managing the cost, schedule and technical risk of the entire project. | • I work as a program manager for one job, while actively contributing on one or more other projects. I act as a software architect focused on customer needs bringing to bear how combinations of technologies can meet those needs. I present design options to those customers and work with them to identify the option that will best suit their needs. I mentor more junior engineers in their careers and help them see the variety of challenges open to them. And sometimes, as the opportunity arises, I find time to implement mine (or others) designs.  
• I do literally EVERYTHING - from database administrator to web site administrator (and coder), to programmer, to book writer and editor (last book was over 500 pages.) I do PowerPoint presentations, spreadsheets, financial plans, marketing plans, and sales plans. I do purchase orders and negotiate contracts.  
• I listen the problems that the people have and then, I start to think about this and what we will do. Furthermore, the preoccupations with managing a team of engineers are harder because I have to control what other engineers are doing, purchase items, tools and do the training of my company partners.  
• Deal with many entities public, private, and internal to accomplish projects and meet deadlines to ultimately serve customers. Human resources. Manage over 100 internal employees and several |
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<tr>
<th>Engineering Job</th>
<th>Job Description</th>
<th>Participant Work Activities</th>
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<tr>
<td></td>
<td></td>
<td>I basically scour the market and look for products, tools and systems that help solve obsolescence issues. The scouring part involves doing research, analysis and eventually preparing reports for the relevant top management committees for endorsement.</td>
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<td>In each company there are different types of managers. In my R&amp;D experience, I could list: i) line manager, which means the person that allocates his employees to the different activities and projects, the person who cares about the professional development of his employees, the person who decide the next step about his employees, who coaches his employees to perform at the best. In all, the person who cares his resources in a way to better fulfill the project success while guaranteeing their growth in terms of technical/human/business competencies. ii) project manager, the person who is responsible for a given project, with assigned goals, times, and budget. Among the line managers, at least in my company that is a big multi-national firm, there are managers that not only care about their resources but are responsible for strategies, technical content and finally the results of their group. This happens, for instance, for manager of system &amp; technology departments, whose elements are not directly involved in the design of the product, but rather in making studies, feasibility studies, propose</td>
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# Table 1 - Job Descriptions and Typical Work Responsibilities

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<tr>
<th>Engineering Job</th>
<th>Job Description</th>
<th>Participant Work Activities</th>
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<tbody>
<tr>
<td>Proposals Engineer</td>
<td>[No information provided]</td>
<td>[No information provided]</td>
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<tr>
<td>Research Engineer</td>
<td>• Create and bound the solution space.</td>
<td>[No information provided]</td>
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<td></td>
<td>• Provide the basic concept for a product without having a lot of evidence that a product is even possible.</td>
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<td></td>
<td>• A person who advances the current technology through his creativity in a systematic way.</td>
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<tr>
<td>Design Engineer</td>
<td>• Take that idea and perform experiments to determine if the concept is possible within certain constraints (i.e., size, power, cost). Design engineers can include both hardware and software designers.</td>
<td>• As a designer, I create a set of requirements for a specific circuit. These are derived from either standards in the industry or a set of system architects. The actual job of creating a set of requirements can be quite complex. After reviewing the requirements with peers, my specific responsibility is to design a set of circuits whose performance is commensurate with the requirements. In this day and age, all design and verification are done using software based tools. A design review with peers and managers is conducted, which I lead, to detail and outline how well the design</td>
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<td></td>
<td>• Testing and analysis of a design to ensure it works based on requirements and intended or even unintended use cases.</td>
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<td></td>
<td>• Formulates a plan for other engineers to build a product. The product will have a specification of</td>
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<tr>
<td>Engineering Job</td>
<td>Job Description</td>
<td>Participant Work Activities</td>
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<tr>
<td>Engineering Job</td>
<td>what it should deliver. It involves design and development of a product.</td>
<td>meets requirements or if it does not! Following approval, I work with physical designers to create a physical set of masks to implement the circuits and complete the design process by verifying that the resulting layout provides the same level of performance as the initial design. The results are reviewed a second time, and if approved, the design is fabricated. I work with verification engineers when the circuit wafers are returned to characterize the resulting design as a prototype.</td>
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<td></td>
<td>• Should have the vision about the product. She should also have enough customer feedbacks as to how the product should serve them.</td>
<td>• I use expertise built up over many years to solve tough problems and mentor younger engineers. I am able to troubleshoot complex issues with hardware and use mathematics to synthesize circuits. I can use many engineering tools fluently and am able to supervise others to come up with designs quickly that meet requirements with parts that are of reasonable cost and attainable in good time.</td>
</tr>
<tr>
<td>Manufacturing Engineer</td>
<td>• Take the output of the design engineers’ work and determine the best means to physically create it.</td>
<td>[No information provided]</td>
</tr>
<tr>
<td></td>
<td>• Ensures that the product continues to be able to be made at higher volume and low cost.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Keep it running over time for the least cost, at the highest achievable performance.</td>
<td></td>
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<tr>
<td>Mechanical Design</td>
<td>• Implement and actualize.</td>
<td>[No information provided]</td>
</tr>
<tr>
<td>Engineer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations and</td>
<td>• Primarily responsible for the technical direction of</td>
<td>• My role kind of overlaps both Operations &amp;</td>
</tr>
<tr>
<td>Engineering Job</td>
<td>Job Description</td>
<td>Participant Work Activities</td>
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<tr>
<td><strong>Productions Engineer</strong></td>
<td>the project and for leading technical trades from which the solution is derived responsible for running the plant/system optimally in a sustainable and effective manner through observation and correction of operating parameters, these can be say voltage levels on the grid etc.</td>
<td>Maintenance. For instance I participated in an emissions control project for a cement factory. Firstly I had to interact and study the operating parameters and then undertook maintenance to optimize the plant.</td>
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<td></td>
<td>• Responsible for identifying problems in operations of any organization (may be a manufacturing plant, or services company) and solve it effectively to achieve the efficiency of the organization</td>
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<tr>
<td><strong>Architecture and Specifications/Engineer</strong></td>
<td>• Simplify and organize.</td>
<td>[No information provided]</td>
</tr>
<tr>
<td></td>
<td>• Have a bird’s eye view and deeper insights on existing technologies. She should set the solution architecture across the different verticals.</td>
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<tr>
<td><strong>Software Design Engineer/Developer</strong></td>
<td>• Analyze problems or customer requirements.</td>
<td>• I design and implement software and software systems, document and explain them internally and externally, and sometimes help co-workers with their projects.</td>
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<td></td>
<td>• Design a solution based on these requirements.</td>
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<td></td>
<td>• Create software code based on the solution - often takes a number of iterations, not a single pass.</td>
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<td></td>
<td>• Create tests to verify and improve the code.</td>
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<td></td>
<td>• Maintain existing code by fixing defects or adding incremental functionality.</td>
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<tr>
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</table>
| Engineering Job              | • Write and discuss work with colleagues, management and customers [a vital job function often neglected in discussions about engineering].  
• Solve customer problems - either find/fix defects in a product or help them to use a product better. |                                                                   |
<p>| Quality Assurance Engineer   | • Verify conformance to requirements.                                            | [No information provided]                                         |
|                              | • Ensure that the product or service delivered is what was required by the customer--nothing extra and nothing incomplete. |                                                                   |
|                              | • A person who makes sure the organization or product runs as per the quality guidelines. It may be governmental, organizational or customer expectation driven guidelines |                                                                   |
| Test/Debug Engineer          | • Check the functionality of software and/or hardware. Validate and verify the functionality, performance and interfaces. | [No information provided]                                         |
| Maintenance Engineer         | • Cleaning up equipment, processes, paperwork, preparing for further work.       | • My job fits for Maintenance Engineer / Customer Interface. My function is to repair the medical systems in order to maximize their uptime. It is also my function to clearly explain to the customer how we fixed the systems and the consequences it could have on the system’s performance (especially in radiotherapy). |
|                              | • Keeps the plant in good condition.                                             |                                                                   |
| Customer Interface           | • Problem solving                                                                | [No information provided]                                         |</p>
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| **Academic**    | • Work on theoretical aspects, applications of engineering, interdisciplinary research etc. You can publish journal and conference papers, write textbooks, give seminars and presentations, supervise theses, create a research lab, engage yourself in pioneering scientific work.  
• A very creative job where a person inspires the upcoming generation about a subject of his passion. | [No information provided] |
| **Consultant**  | • Identify problems and bottlenecks in business processes of customers and show realistic tangible solutions to those problems with a fast return on investment. | • I'm really an engineering process consultant. I help my clients figure out why their product engineering is not going well. To do this, I interview their engineering staffs, and analyze any data they have kept during product development.  
• I take a look at product designs in many different industries and work with electrical engineers to try to solve their design challenges (with a slant towards my company's products). In a product design organization my role is like the system engineer who does hardware and software, too. |
There was some disagreement about whether there should be separate roles identified for software. Several of the participants said that software is integrated into the engineering process and that software engineering should not be confused with software programming.

We engineers of other disciplines do at some point this and that programming, which doesn’t suddenly make us a software engineer. And furthermore, many disciplines are rather looking for pure programmers in the last 20 years or so. If it is a research assistant position at a university, it is mostly just a good programmer what people are looking for. If it is a developer, design etc. position in a company, it is mostly all about code writing.

C. Mehmet (Management)

Not all those involved in software development are in engineering roles or are engineers. But computer/software engineering certainly is an engineering discipline and a subcategory of electrical engineering. The end result of software engineering’s efforts is not a physical object like a semiconductor chip or a transformer, but it was developed using engineering principles just the same.

Robert (Design/Technical)

Similar to the engineering work process algorithm described earlier, one participant offered a software engineering process based on work flow:

- Business Requirement Analysis
- Systems Architecture
- Product Architecture
- Project Management
- Implementation (coding)
- Quality Assurance
- Deployment and Distribution
- Maintenance and Change Control
- Code Management

Working Engineers and Academics

There was a great deal of consensus among participants from both focus groups on the major differences between working engineers and those who are in academia. In general, they said, academia generally focuses on the development of knowledge whereas industry is more focused on the application of knowledge. Because the application of knowledge must have a practical, real-world use, working engineers are more tightly bound to the company’s bottom line and all that it entails. They must have a business case for their product (a market demand), they must adhere tightly to budgets, requirements and deadlines and be able to produce a product—or millions of a product—with efficiency and reliability.

In academia, they said, engineers are more focused on concepts that are not necessarily immediately “productizable.” One participant used the example of circuit design. In academia, they must get one chip
working. The working engineer must high volumes working reliably and without field failure. What’s more, engineers working in industry do not always have the luxury of selecting the best technical solution, since there are usually other interests involved—such as deadlines, cost and feasibility.

While we do some amount of research, most of our work is focused on building products that can have immediate impact in the market. I think folks in academia majorly focus on long term research and problem statements that might not have immediate commercial value. Prasanna (Management)

Engineers in academia work in developing technologies that may fuel future businesses and are generally responsible for obtaining funding themselves. They are often writing proposals, supervising graduate students, teaching classes, and working on brain-cracking breakthroughs that will fuel the next generation of products. Schedules are more flexible. They are usually protected from layoffs. Howard (Design/Technical)

Based on my experience with academia and pure research departments, we do many of the same types of things but they are free to work on projects without immediate or foreseeable commercial value. My efforts typically have to have some impact on the company’s bottom line - whether that’s sales in this or a future quarter, lowered customer support costs, or increased customer satisfaction that improves retention. Martin (Design/Technical)

There is definitely a much lower tolerance for R&D in the corporate world than there is in academia. A product in corporate America must show that it is worth producing from a revenue standpoint. Sometimes this works at odds with the engineer who is motivated by the desire to discover better, more efficient ways of doing things. In academia these concepts themselves are a product. In the corporate world these concepts need to be converted into a marketable item. Robert (Design/Technical)

It seems that “outside the box” thinking is more prevalent where the practical implementation does not have an impact so dramatically on the “bottom line” of a company. Also, the resource availability may not be the same between academia and industry, where depending on the field involved, one may have the latest/greatest while the other is working with second hand or outdated tools. Information availability may also be different when the emphasis is on commercialization vs. publication. Ken (Management)
In industry, our efforts are supported by customers that pay for our products. Customers determine the price (which impacts major design decisions), our schedule, and the features of the design. If a design does not meet requirements or is late, we receive nothing as the customer does not make any profit. There are market windows for products that set very precisely when a design must be available. In an academic environment, the efforts are often supported by industry or government programs. The criteria for success or failure is not tied, necessarily, to the success of a design concept. Further, the time frame for development is not as precise as when dealing with a customer whose opportunities must satisfy a market window. As such, the rigor and robustness of an academic design as well as its timing are not as critical.

Shawn (Design/Technical)

One focus group participant said that the motivations between industry and academia differ. He said that engineers in academia seek to publish, teach and share knowledge. Working engineers are working to get the highest possible profits.

Despite all the differences, some participants said academia is changing due to closer partnerships with industry.

The methods, approaches and tools are similar, only the motivations and targets are different. In academia you want to publish papers, write books, get recognition and awards, enjoy the teaching, i.e. the transmission of a knowledge to other people, enjoy international collaboration, and you have the luxury of spending a lot of time on research. In business area, you want to get the highest possible profits from the products and services you provide. There is continuous pressure of the market dynamics, customer behavioral profiles and competitors. It is not enough to produce the best superior product, you must also sell it. And here start complex real life models. You have to convince the customers through many attractions. C. Mehmet (Management)

We are starting to witness a shift that is being precipitated by the contemporary financial situation (the new normal), both industry and the government have been, and are continuing to, strengthen their relationships with academia out of necessity. The situation reminds me of a tale that I have heard over my entire career "... we have no money to hire someone ... well let’s get a grad student ..." Life has a funny way of imitating art and mark these words, you heard it here first. Over the next decade you will
see industry and the government court universities, much like professional sports, to get
the best and the brightest. It wouldn’t surprise me to see a similar draft like system in the
future or possible industry or the government paying the tuition for several years of
guaranteed service. When it comes to technology, both industry and the government are
getting out of the inventing business and are moving into the harvesting business. Eric
(Management)

The “Working Engineer”
Focus group participants were asked to think about broad categories of engineers. One suggestion was
to consider the responsibilities of “working engineers” versus those in academia. Nearly all the
participants identified themselves as “working engineers.” But instead of contrasting what they do with
those in academia, they also differentiated themselves from researchers—even those in industry.

Compared to what a “research” group does, some of my work may seem very trivial -
often conveying information to others, but for success in our field a lot of attention to
small details, or finding effective ways to handle these trivial details, is important for
success. Arvin (Design/Technical)

I am working engineer. I produce commercial web sites that perform a service and are
used by my employer to make a profit. Engineers that do strictly research are not
concerned about the bottom line today and much as developing the next money making
product. Edward (Design/Technical)

Most of the time I am a working engineer. My activities are more targeted to meet the
demand of the market, although I devote a small part of my time to research and
development. Marcos (Design/Technical)

I am still a bit troubled by the difference between academia and research. I have worked
in all three worlds, and an academic is mainly involved in research. Someone who is
“working in research” that is not an academic is mainly involved in industrial research,
and then there are the practitioners (engineers and consultants). I suggest the categories:
academic research, industrial research, and engineering. Then I guess we can further
distinguish working engineers from retired engineers, working industrial researchers
from retired industrial researchers, etc. I would guess that some people would want
engineering to be the umbrella over all three (somewhat overlapping) worlds, and that is
why we are searching for a replacement term for “engineer”. But to split hairs,
academics are doing research in engineering, but not (strictly speaking) engineering.
Mark (Design/Technical)
Practitioners

Participants were challenged to find a word that describes engineers who do not work in academia or research—the front-line, product or commercial engineer. They were then asked for their reaction to the term that IEEE often uses—“practitioner.”

Alternatives to “practitioner” included:

- Engineer
- Practicing engineer (versus academic engineer)
- Engineering professional
- Technical professional
- Technocrat
- Techie
- Business engineer
- Application engineer
- Commercial engineer
- Project engineer
- Professional engineer
- Industry experts
- Business engineer (versus business researcher)

Acupuncturists are practitioners. Midwives are practitioners. The Salem Witch, Laurie Cabot...she’s a “practitioner.” In my opinion, the term “engineer” has a certain connotation of scientific education and background. Lawyers go to law school, doctors go to medical school...I went to an Engineering school. I did not go to a “practitioner school.” Steven (Management)

Practitioner seems OK. I would prefer it to “working engineer” because that might imply that researchers or academics are not doing hard work. Steve (Design/Technical)

The term “practitioner” doesn’t do much for me. It is too vague and lacks meaning to most engineers. It might be better to be somewhat more specific and think about “research engineers”, “development engineers”, “manufacturing engineers” and “sales engineers”. Michael (Management)

Here is Google’s definition of 'Practitioner': - a person actively engaged in an art, discipline, or profession, especially medicine. Ravi (Management)

The more I think about this, the more confused I get between the distinctions being made. Consider an engineer working for the government or the military. Is this engineer a “practitioner?” Many have identified a practitioner with someone who works in the corporate world. An engineer must solve problems by adhering to certain constraints -
including budgetary and regulatory. If the question is to find a term to segregate engineers working in academia (and other entities whose mission is primarily the research of new technologies and methods) from engineers working for commercial entities, perhaps the term “commercial engineer” is appropriate. But really these are just the same engineer working against different sets of constraints. It’s not like these 2 engineers studied different material on their way to their degrees or certifications. Robert (Design/Technical)

It’s not incorrect, but connotes a medical context to me. Terms like “professional” sound more appropriate, but would include persons in academia or research. Offhand I can’t think of a single word that could carve out the subgroup. (And if I was in academia or R&D, wouldn’t I be offended that IEEE staff don’t consider me “professional”? ) Martin (Design/Technical)

The general belief here in Zimbabwe was (still is, to some extent) that engineers who were in academia would have failed in practice i.e. industry but the stereotyping is now fading. I think “practitioner” is due to the lack of a better word and does not correctly portray their role. Richman (Design/Technical)

In my opinion, practitioner is not a good and correct word in terminology. It has a very broad meaning. By naming as practitioner, IEEE by default puts everybody out of academic and research arena into the same basket and assumes that these people all work in positions where they are involved in using engineering methods and principles. Many are just and only involved in marketing and sales, many work in different domains such as finance etc. Moreover, there are many business development people and investors of non-engineering background who are interested in several IEEE products and services just to get information and increase their knowledge. C. Mehmet (Management)

In my opinion, a ‘practitioner’ is more of like an ironsmith - he/she might be very skilled and a very good craftsman, but might not really understand the metallurgy principles, what constitutes the changes, what is the optimum time of tempering metals (of course, this can be deduced through repetition and observation). A technical professional or an engineering professional is more of like a metallurgist who practices metal crafting - he/she has a good understanding of the principle and applies his/her sound technical knowledge to create something of value. Yi Xiong (Design/Technical)

I understand the desire to come up with a single term to describe carve out those engineers working outside of research or academia (which are probably the vast majority) of engineers. These engineers are developing “practical” systems. Systems to be used (and abused) by end-users, organizations, and nations. Research engineers are trying to determine if something can be done. Once determined, other engineers make it practical to deploy. In this way the term practitioner makes sense to me. Adolf (Design/Technical)
I’d include myself among practitioners - it’s not inaccurate. However I wouldn’t select the word to describe myself either, as it has medical connotations and as others have said it omits the more specific, defining aspect of “engineer”. Martin (Design/Technical)

Despite their discomfort with how well “practitioner” actually fits the large and diverse reality of engineers and others who are not working in academia, most of the focus group participants agreed that they are “practitioners,” although a few distinguished themselves as “managers” rather than “roll-up-your-sleeves” lab guys.

I consider myself an Industry manager with a long experience as industry researcher. Practitioner, in my view, is rather the “lab” guy that is able to do things. Roberto (Management)

The Needs of Practitioners
Several of the focus group participants said that the information needs of practitioners and those in academic have a significant area of overlap.

My opinion is that those engineers have great need of information too! The point is that information is different. This information has to be more related with day-by-day tasks of “practitioner” engineers. An example is “How to optimize your maintenance method”, or “How to evaluate different types of ac motors.” Ricardo (Management)

Granted, someone in academia might spend the bulk of their time gathering conceptual information from journals, books, and conferences, while someone outside R&D may read more about specific devices, tools, or applications, both will be more successful if they spend time doing both. Martin (Design/Technical)

One thing I find, is that I need to find the relevant information I need quickly. Also I feel being a "practitioner." I am more interested in the direct, and immediate practical use I can have from that information. This is especially true when the information is about something conceptually new to me. Arvin (Design/Technical)

In academia and research, people try to find novel innovative methods, algorithms and procedures posing a superiority (at least from some perspectives) on the existing conventional ones. They do not have to deal with market pressure, time pressure, customer demands, technical support, pricing structure, marketing forecasts, profits, competitor analysis, etc. And their results shall not necessarily be implementable, it can be well just a theoretical work. And they have the luxury to burn out research money and grants! Contrary to them, the practitioners (or in my opinion just “non-academic engineers”) deal with all the problems outlined above from which the other group can refrain itself. Their results must be realizable with acceptable pricing. In whatever domain they work, they must keep the whole constraints of this domain in mind. For example, one can invent and implement an excellent medical device performing all required tasks in an optimum way with reliability, security and accuracy. But, if you had
not done a comprehensive study regarding patient acceptance in prior, you may end up with a disaster. Practitioners’ results involve at some point other people from outside world and their decision mechanisms. C. Mehmet (Management)

I think there are two major groups of interest: current needs and future needs. I believe that current needs are of most interest to “practitioners”, though like me, there are many professionals who maintains some kind of link with universities and/or research centers. On the other hand, I imagine that the academy is more interested in future needs, although many researchers like to be informed about current industry challenges. Many of them also work considering the current needs. Marcos (Design/Technical)

Both groups need information, and there is a large overlap in the technical information they need. A practitioner needs to stay current in the field, so has to read the key latest papers in his/her area (by the way, I noticed only one woman’s name in the Profiles). One difference may be that I as a practitioner really appreciate and use the overview articles that experts publish, for example, in the Proceedings of the IEEE. It helps me understand the key aspects of a new field quickly (e.g., asynchronous digital design, Rx equalization, etc.). Practitioners also appreciate and use the articles in various ”trade rags” that are more practical… Mark (Design/Technical)

I find that in work, time is always of the essence as maybe 10% out of that 8-10 hour work day gets to spent browsing through articles, journals, patents in order to comb through the haystack and find the relevant information. Yi Xiong (Design/Technical)

“Practitioners” May not always be interested in the theory behind an innovation or product. They basically want to know what’s available in the market/industry that they could specifically use on their current project. A simple example of radar replacement, a “practitioner” would not want the theory of the various transmission patterns but would certainly want to know the capability of the various patterns. Franklin (Management)

Although I have often found it lacking, they need access to those in academia or research that publish proposals and a desire of those in academia or research to communicate with practitioners. There have been countless number of mail messages I have sent to authors of papers (journal papers) with questions concerning their work that have gone unanswered. Shawn (Design/Technical)

The formal scientific, mathematical and technical methods taught in school and emphasized by professional societies like the IEEE are used only a small percentage of time in the industrial world. No class I took or article I read discussed how to create an electronic architecture for a complex medical instrument. Similarly, my circuit design classes talked about the capacitor needed but never discussed the different types and when to use them. Michael (Management)
Research involves casting a wider net, in that you don’t know exactly what might help you move forward. Practitioners typically have an immediate goal and spend more time looking for directly related materials. John (Design/Technical)

Many of the focus group participants emphasized that time is a critical aspect of their information gathering and consumption activities. They don’t necessarily search for and read highly theoretical information not because of lack of interest, but rather because of lack of time.

I think it’s all about time, it’s not that I don’t enjoy theoretical articles, however sometimes when I have had issues, I have used IEEE “color” books in which there is information regarding equations, recommendations, etc. So for me free time I do like academic papers, to be updated about research however at work I tend to use established normatives. Jorge (Design/Technical)

Over the years I have changed and reduced the number of IEEE technical societies to which I belong largely because I’ve had less and less time to read the articles and ran out of bookshelf space. :-) I’m even to the point that more often than not, I don’t even open the monthly electronic Spectrum. Practicing engineers need something equivalent to Yelp ratings to help direct us to the more worthwhile articles. While it isn’t a perfect analogue and is specifically targeted toward solving specific programming problems or using libraries correctly, the stackoverflow.com site is an excellent time saving tool. It allows users to ask questions that others can answer and have their solutions voted as most correct and to earn points. IEEE could benefit its member engineers by considering the stackoverflow.com concept. Ted (Design/Technical)

**Information and Skills Needs by Job Type**

Participants were asked to consider each of the job types identified earlier in the discussion and the type of information and skills a person would need for that job. Detailed verbatims are provided in Table 2.
<table>
<thead>
<tr>
<th>Engineering Job</th>
<th>Information and Skills Needs <em>(participant verbatims)</em></th>
</tr>
</thead>
</table>
| Program Planners/Managers | • Activity duration based on inputs from other specialists or his own experience  
• Information about progress of each activity, issues and inputs from specialists on how to resolve those issues  
• Information related to customer needs and requirements, internal cost structures, opinions from the legal department, software development managers, documentation personnel, test personnel  
• Test/verification results, marketing & sales activities, pricing trends, competitor analysis, output data from work packages  
• More people skills, more financial skills, project management skills - so the need is for tools and information to manage people, projects, time, budgets, materials, etc.  
• Human resource info along with legal, regulatory, and project management skills  
• Project planning techniques (GNATT, Pert, etc.), report writing, HR skill such as interviewing and motivating people  
• Trends, behavior, markets, specialized software, interrelation of stages                                                                                                                                                          |
| Proposals Engineer        | • Costs of various products, their catalogs, database of contact persons, sales representatives, needs trends in cost  
• Informations about costs, investments, financial data and market data  
• Implementation costs, competitor information, product functionality details, comparison matrix, market trends, behavioral profile of customers and prospects, country specific financial trends, budgets of governmental organizations, contact to key people in various organizations  
• Financial analysis  
• Tools, costs, times, yields, efficiency, financial resources, labor, unforeseen, existing technologies, suppliers                                                                                                                                                     |
| Research Engineer         | [no information provided]                                                                                                                                                                                                                               |
| Design Engineer           | • Latest codes standards, industry accepted engineering practices  
• Technical information, new methods of design, new information about their specific project area  
• Process for submitting, reviewing, and publishing circuit design articles focusing on current technology, circuit issues of ongoing technical interest, new or emerging standards  
• Forums to allow for the discussion of topics such as analog circuit design, RF design, processor design, simulation, measurements and measurement methodology (this function is not served by IEEE today)                                                                                           |
### Table 2 - Information and Skills Needs by Job Type

<table>
<thead>
<tr>
<th>Engineering Job</th>
<th>Information and Skills Needs <em>(participant verbatims)</em></th>
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</thead>
<tbody>
<tr>
<td><strong>Engineering Job</strong></td>
<td><strong>Information and Skills Needs <em>(participant verbatims)</em></strong></td>
</tr>
<tr>
<td></td>
<td>• Occasional and AFFORDABLE conferences to allow for general exchanges of technical circuit designs and topics&lt;br&gt;• AFFORDABLE access to past IEEE journals for IEEE members (including conference proceedings) - not affordable in my estimation today&lt;br&gt;• System architecture case studies, circuit design rules, practical PCB layout, examples of good (and poor) designs</td>
</tr>
<tr>
<td><strong>Manufacturing Engineer</strong></td>
<td>[no information provided]</td>
</tr>
<tr>
<td><strong>Mechanical Design Engineer</strong></td>
<td>• Technical information, new methods of design, new information about their specific project area&lt;br&gt;• Optimized simulation results, written codes, implementation trends in hardware and microsystems technology, design layout and packaging trends, cost impact, interfaces&lt;br&gt;• Concept, input on realizability from hardware experts (like miniaturization etc.), market trends, costs, competitor analysis&lt;br&gt;• Information related to materials, layouts, packaging, manufacturing, standards, etc.&lt;br&gt;• Component datasheets (which manufacturers and distributors readily provide) and documentation for some of the design tools&lt;br&gt;• &quot;Rule of thumb&quot; design techniques, examples of good (and poor) designs</td>
</tr>
<tr>
<td><strong>Operations and Productions Engineer</strong></td>
<td>• Informations about costs, investments, financial data and market data&lt;br&gt;• Failure statistics, costs, subscriber information, customer behavioral profile, material costs, component information&lt;br&gt;• Deployment and Distribution, Maintenance and Change Control, Code Management - need access to documentation about the product, system, etc.&lt;br&gt;• Document control system case studies&lt;br&gt;• Software, hardware, protective equipment, control equipment, update technology, parameters and control variables, tests, diagnostic equipment, operating manuals, plans, statistics failures, performance statistics</td>
</tr>
<tr>
<td><strong>Software Design Engineer/Developer</strong></td>
<td>• New software trends, updates, input from hardware experts, input from designers for code optimization, input from other work packages, hardware platforms, compatibility information with other tools, available interfaces with other tools</td>
</tr>
<tr>
<td>Engineering Job</td>
<td>Information and Skills Needs <em>(participant verbatims)</em></td>
</tr>
<tr>
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</tr>
<tr>
<td></td>
<td>• Deployment and Distribution, Maintenance and Change Control, Code Management - need access to documentation about the product, system, etc.</td>
</tr>
<tr>
<td></td>
<td>• Appropriate design and development tools, access to code libraries, web and some books</td>
</tr>
<tr>
<td></td>
<td>• Education of the latest technologies</td>
</tr>
<tr>
<td></td>
<td>• Language specifications, documentation for tools (compiles, source code repositories, etc.), and the online help sites for tracking down errors and bugs</td>
</tr>
<tr>
<td></td>
<td>• Latest methodologies, practices, challenges, etc. that both large companies and startups use and face</td>
</tr>
<tr>
<td></td>
<td>• System architecture case studies, practical test methodologies, coding examples, examples of good (and poor) designs, bug tracking system case study</td>
</tr>
<tr>
<td></td>
<td>• Latest versions of their programming languages, programming environments, tools, but also with latest information related to software development processes/best practices and software configuration management</td>
</tr>
<tr>
<td></td>
<td>• New tools and technologies I might try using</td>
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<tr>
<td></td>
<td>• New open source offerings</td>
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<tr>
<td></td>
<td>• Papers on approaches to solve problems similar to mine</td>
</tr>
<tr>
<td></td>
<td>• Online documentation on how to use (or better use) tools I already have</td>
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<tr>
<td></td>
<td>• Updates to the languages and libraries I use on a regular basis</td>
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<tr>
<td></td>
<td>• Tutorial examples and code snippets that demonstrate how to accomplish some obscure task</td>
</tr>
<tr>
<td></td>
<td>• Competitive product offerings, papers in the product area (especially customer experience papers)</td>
</tr>
<tr>
<td>Architecture and Specifications/Engineer</td>
<td>• Information related to materials, layouts, packaging, manufacturing, standards, etc.</td>
</tr>
<tr>
<td></td>
<td>• Best practices and standards</td>
</tr>
<tr>
<td></td>
<td>• Customer/user interaction skills</td>
</tr>
<tr>
<td>Quality Assurance Engineer</td>
<td>[no information provided]</td>
</tr>
<tr>
<td>Test/Debug Engineer</td>
<td>• Database and experience to know where a fault is likely</td>
</tr>
<tr>
<td></td>
<td>• Training with design engineers about the specification of the product, it functions, how it works</td>
</tr>
<tr>
<td></td>
<td>• Feedback from software developers, documentation, manuals, hardware components information, objectives</td>
</tr>
<tr>
<td>Engineering Job</td>
<td>Information and Skills Needs <em>(participant verbatims)</em></td>
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<td>---------------------</td>
<td>--------------------------------------------------------</td>
</tr>
</tbody>
</table>
| **Maintenance Engineer** | • Information related to materials, layouts, packaging, manufacturing, standards, etc.  
• Troubleshoot case studies  
• Training with design engineers about the specification of the product, it functions, how it works  
• Deployment and Distribution, Maintenance and Change Control, Code Management - need access to documentation about the product, system, etc.  
• Operation, teams of measurement variables, updated technology, equipment and tools for maintenance, consumables, suppliers, manuals, drawings, specifications of the manufacturer |
| **Customer Interface** | • Behavioral profile of customers, past statistics, market trends, communication with hardware/software people, understanding of customer-specific needs and tailor made designs, documentations, manuals  
• More people skills, more financial skills, project management skills - so the need is for tools and information to manage people, projects, time, budgets, materials, etc.  
• Customer interaction skills |
| **Academic** | • Journals, textbooks, manuals, programs, tools, market trends, grant providers  
• Books, periodicals, conferences (both in-person and via web) |
| **Consultant** | • Ongoing research in the field  
• Market trends, existing approaches, journals, textbooks, hardware/software tools and trends  
• More people skills, more financial skills, project management skills - so the need is for tools and information to manage people, projects, time, budgets, materials, etc.  
• Same as Academic augmented by knowledge of best practices in industry and government  
• Business practices, necessary legal agreements such as NDA |
If you consider all the above groups working in the same organization / industry / product segment, then the type of information needed might be very much the same, but in many cases it might be the degree of detail or perspective or view needed, that differs. E.g. both a hardware and a software engineer need to know about a radio comms standard, but from different views or different details matter to them. Arvin (Design/Technical)

…The issue I think is that the information for any group is changing so quickly, that it is hard to keep up with latest trends. And if you are on a leading edge development- and stick with it for a few years, it too becomes obsolete to some newer more efficient trend. And it seems like the directions for software is exploding in so many directions that makes it harder yet. Tom (Design/Technical)

**Information Delivery**

There is a strong preference for immediate availability of information from electronic sources.

I think that internet supplies all about information today. My R&D function demands that I stay always connected accessing databases. The different types of functions don’t represent different type of information access. Ricardo (Management)

The best method to transmit and deliver knowledge and information is publications and a majority of those can be provided and accessed through online media. Other approaches would be seminars, conferences, expert meetings, workshops and courses. For gathering confidential and strategic information beyond the public and legacy ones, further tactical approaches would be necessary. C. Mehmet (Management)

I fully agree that electronically is the only practical way to enable distribution of the vast stores of information these days. We do not have enough trees or plastic to put everything in print. That said, I also agree that among the biggest challenges today are the storage of all that information and convenient/efficient, and maybe intelligent, ways to access the desired information. Just think of the possibilities if someone looking for information on designing an artificial heart could be given lists of existing technology, along with
biocompatible materials, micromachining and nanotechnology mechanisms for creating surfaces that do not affect fluid flow and cell structures, in addition to power source options and considerations to optimize connection to the blood and fluid system of the body, at the very least. Given the time for review and integration into the desired approach, we might never have to worry about a failing heart (except those broken in love). Ken (Management)
# Description of Participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Employer Type/Industry</th>
<th>Title</th>
<th>Years as IEEE Member</th>
<th>Country</th>
<th>Gender</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arvin</td>
<td>Private industry IC's and Microprocessors</td>
<td>Senior Design Engineer</td>
<td>More than 15 years</td>
<td>Norway</td>
<td>Male</td>
<td>41 - 50 years old</td>
</tr>
<tr>
<td>Adolf</td>
<td>Private industry/Software</td>
<td>Chief Software Engineer</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>51 - 60 years old</td>
</tr>
<tr>
<td>Edward</td>
<td>Private industry Software</td>
<td>Senior Software Engineer</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>51 - 60 years old</td>
</tr>
<tr>
<td>Gustavo</td>
<td>Private industry Medical Electronic Equipment</td>
<td>Customer Support Engineer</td>
<td>More than 15 years</td>
<td>Spain</td>
<td>Male</td>
<td>41 - 50 years old</td>
</tr>
<tr>
<td>John</td>
<td>Private industry IC's and Microprocessors</td>
<td>Senior Principal Software Engineer</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>41 - 50 years old</td>
</tr>
<tr>
<td>Jorge</td>
<td>Private industry Telecommunications Services, Telephone including Cellular</td>
<td>Wireless Engineer</td>
<td>4 - 6 years</td>
<td>El Salvador</td>
<td>Male</td>
<td>25 - 30 years old</td>
</tr>
<tr>
<td>Marcos</td>
<td>Private industry Computer/Communications and Data Processing Services</td>
<td>Application Engineer</td>
<td>4 - 6 years</td>
<td>Brazil</td>
<td>Male</td>
<td>25 - 30 years old</td>
</tr>
<tr>
<td>Michal</td>
<td>Private industry Aircraft, Missiles, Space and Ground Support Equipment</td>
<td>Software engineer</td>
<td>4 - 6 years</td>
<td>Poland</td>
<td>Male</td>
<td>25 - 30 years old</td>
</tr>
<tr>
<td>Richman</td>
<td>Private industry Power Production/Generation/Transmission and Distribution</td>
<td>Transmission &amp; Distribution Projects Engineer</td>
<td>1 - 3 years</td>
<td>Zimbabwe</td>
<td>Male</td>
<td>25 - 30 years old</td>
</tr>
<tr>
<td>Name</td>
<td>Industry</td>
<td>Position</td>
<td>Experience</td>
<td>Location</td>
<td>Gender</td>
<td>Age Range</td>
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<tr>
<td>Robert</td>
<td>Private Industry</td>
<td>Sr. Developer</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>41 - 50 years old</td>
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<tr>
<td></td>
<td>Computer/Communications and</td>
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<tr>
<td>Ted</td>
<td>Private industry</td>
<td>Senior Software Tech Lead</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>41 - 50 years old</td>
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<td></td>
<td>Data Processing Services</td>
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<tr>
<td>Thomas</td>
<td>Private industry</td>
<td>Test &amp; Integration Technician</td>
<td>More than 15 years</td>
<td>Canada</td>
<td>Male</td>
<td>51 - 60 years old</td>
</tr>
<tr>
<td></td>
<td>Communications System and</td>
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<td>Yi Xiong</td>
<td>Private industry</td>
<td>Associate Technical Professional</td>
<td>7 - 10 years</td>
<td>Singapore</td>
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<tr>
<td>Ali</td>
<td>Private industry Power Production/Generation/Transmission and Distribution</td>
<td>Vice President, Transmission</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>51 - 60 years old</td>
</tr>
<tr>
<td>Andreas</td>
<td>Self-employed/consulting Independent and University Research, Test and Design Laboratories and Consultants</td>
<td>CEO</td>
<td>More than 15 years</td>
<td>Switzerland</td>
<td>Male</td>
<td>41 - 50 years old</td>
</tr>
<tr>
<td>Anthony</td>
<td>Private industry Communications System and Equipment</td>
<td>Program Manager</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>51 - 60 years old</td>
</tr>
<tr>
<td>Arjun</td>
<td>Self-employed/consulting software</td>
<td>CEO</td>
<td>7 - 10 years</td>
<td>India</td>
<td>Male</td>
<td>25 - 30 years old</td>
</tr>
<tr>
<td>C. Mehmet</td>
<td>Self-employed/consulting Medical Electronic Equipment</td>
<td>Manager</td>
<td>More than 15 years</td>
<td>Austria</td>
<td>Male</td>
<td>41 - 50 years old</td>
</tr>
<tr>
<td>Chris</td>
<td>Private industry Medical Electronic Equipment</td>
<td>National Technical Service Manager</td>
<td>More than 15 years</td>
<td>Australia</td>
<td>Male</td>
<td>51 - 60 years old</td>
</tr>
<tr>
<td>Devon</td>
<td>Public/government Government Agencies and Armed Forces</td>
<td>Vice President - Information &amp; Communication Technology</td>
<td>More than 15 years</td>
<td>Jamaica</td>
<td>Male</td>
<td>41 - 50 years old</td>
</tr>
<tr>
<td>Dorin</td>
<td>Private industry Medical Electronic Equipment</td>
<td>Vice President R&amp;D</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>41 - 50 years old</td>
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<tr>
<td>Eric</td>
<td>Public/government</td>
<td>Deputy Director of the Defense Systems Information Analysis Center</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>41 - 50 years old</td>
</tr>
<tr>
<td>Name</td>
<td>Employer Type/Industry</td>
<td>Title</td>
<td>Years as IEEE Member</td>
<td>Country</td>
<td>Gender</td>
<td>Age</td>
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<tr>
<td>Francesco</td>
<td>Private industry, Government Agencies and Armed Forces</td>
<td>Program Manager</td>
<td>More than 15 years</td>
<td>Italy</td>
<td>Male</td>
<td>51 - 60 years old</td>
</tr>
<tr>
<td>Frank</td>
<td>Public/government, Government Agencies and Armed Forces</td>
<td>Program Director</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>51 - 60 years old</td>
</tr>
<tr>
<td>Franklin</td>
<td>Public/government, Government Agencies and Armed Forces</td>
<td>Head, Fleet Seaworthiness</td>
<td>More than 15 years</td>
<td>Malaysia</td>
<td>Male</td>
<td>41 - 50 years old</td>
</tr>
<tr>
<td>Frederick</td>
<td>Private industry, IC's and Microprocessors</td>
<td>Field Application Engineering Manager</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>51 - 60 years old</td>
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<tr>
<td>Gregory</td>
<td>Private industry, Telecommunications Services, Telephone including Cellular</td>
<td>Area Manager</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>41 - 50 years old</td>
</tr>
<tr>
<td>Kenneth (Ken)</td>
<td>Non-profit institution (non-educational)</td>
<td>Director International Standards</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>51 - 60 years old</td>
</tr>
<tr>
<td>Lou</td>
<td>Private industry</td>
<td>Director of Engineering &amp; Product Development</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>51 - 60 years old</td>
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<tr>
<td>Luis</td>
<td>Private industry</td>
<td>Operational Manager</td>
<td>More than 15 years</td>
<td>Venezuela</td>
<td>Male</td>
<td>51 - 60 years old</td>
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<tr>
<td>Michael</td>
<td>Private industry, Medical Electronic Equipment</td>
<td>Sr Director Engineering</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>61 - 70 years old</td>
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<tr>
<td>Naoto</td>
<td>Private industry, Test, Measurement and Instrumentation Equipment</td>
<td>Department Manager</td>
<td>More than 15 years</td>
<td>Japan</td>
<td>Male</td>
<td>51 - 60 years old</td>
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**Table 4 – Management Participants**

<table>
<thead>
<tr>
<th>Name</th>
<th>Employer Type/Industry</th>
<th>Title</th>
<th>Years as IEEE Member</th>
<th>Country</th>
<th>Gender</th>
<th>Age</th>
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</thead>
<tbody>
<tr>
<td>Prasanna</td>
<td>Private industry Software</td>
<td>Product Manager</td>
<td>7 - 10 years</td>
<td>India</td>
<td>Male</td>
<td>25 - 30 years old</td>
</tr>
<tr>
<td>Ravi</td>
<td>Private industry Medical Electronic Equipment</td>
<td>Manager, Supplier Project Leads</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>51 - 60 years old</td>
</tr>
<tr>
<td>Ricardo</td>
<td>Private industry Original Equipment Manufacturers</td>
<td>Engineering Manager</td>
<td>Less than 1 year</td>
<td>Brazil</td>
<td>Male</td>
<td>25 - 30 years old</td>
</tr>
<tr>
<td>Roberto</td>
<td>Private industry Communications System and Equipment</td>
<td>Director of Research &amp; Innovation</td>
<td>More than 15 years</td>
<td>Italy</td>
<td>Male</td>
<td>41 - 50 years old</td>
</tr>
<tr>
<td>Steven</td>
<td>Private industry Software</td>
<td>VP Engineering</td>
<td>More than 15 years</td>
<td>United States</td>
<td>Male</td>
<td>51 - 60 years old</td>
</tr>
<tr>
<td>Sunil</td>
<td>Private industry/Other</td>
<td>Assistant Project Manager</td>
<td>Less than 1 year</td>
<td>India</td>
<td>Male</td>
<td>25 - 30 years old</td>
</tr>
<tr>
<td>Waheb</td>
<td>Public/government Transportation Services (Airline, Railroads, etc.)</td>
<td></td>
<td>Less than 1 year</td>
<td>India</td>
<td>Male</td>
<td>25 - 30 years old</td>
</tr>
</tbody>
</table>
SD&EA* Committee Report

Wai-Choong (Lawrence) Wong, Vice Chair, Strategic Management and Analysis

IEEE MGA Board Meeting
21 June 2014

* Strategic Direction and Environmental Assessment
Reminder: 2014 Priorities

- Oversee implementation of Japan and India plans developed in 2013

- Review and refine China membership plan

- Regular reporting of progress against country metrics to the committee (for priority countries) - China, United States, India, Japan

- Develop better understanding of how to improve IEEE Membership’s value to practitioners
2014
Strategic Direction & Environmental Assessment Committee

SD&EA Chair:
Wai-Choong (Lawrence) Wong
Singapore

Past Technical Activities VP:
Bob Hebner
Austin, TX, USA

Deepak Mathur
Ahmedabad, Gujarat, India

Kukjin Chun
Seoul, South Korea

Cecelia Jankowski
Piscataway NJ USA

Celia Desmond:
Missassauga, ON, Canada

Dan Coode
Saskatoon, SK, Canada

Maike Luiken
Sarnia, ON, Canada

Al Reinhart
Boylston, MA, USA

Ellis Nolley
Saint Paul, MN, USA

Partners and Support

Jamie Moesch
Piscataway, NJ, USA

Fanny Su
Singapore
Formation of Sub Teams

India Implementation Task Force Team
- Deepak Mathur
- Celia Desmond
- Al Reinert

Japan Implementation Task Force Team
- Lawrence Wong
- Kukjin Chun
- Maike Luiken

Practitioner Research Team
- Dan Coode
- Bob Hebner
- El Nolley
Japan Strategy

Data
- Data capture
- Segmentation

Strategic
- Formulation
- Prioritization

Tactical
- Formulation
- Prioritization

Implementer
- Programs & Activities
- Leadership
Japan Plan Update

- Met with Japan Council (JC) & Section Chairs at Region 10 meeting. Were invited to F2F meeting with JC and Japanese industries.
- L Wong & F Su met with JC and 2 companies (Fujitsu & NEC) in Tokyo on 25-26 Mar
- JC chair asked to wait until their July meeting for a formal plan that can be executed during the next membership year (Aug2014)
- Keen interest to organize MAW & YP activities, but would like to deal with procedures on JIAB formation first
- To carry out survey of industry commitment to IEEE
- Next F2F with JC Chair and Japan volunteer leadership at SC2014 in Aug 2014
Japan Plan Update (cont.)

- F2F with IEEE Japan Council & companies on 25-26 Mar

Outcome of F2F:
- M Koyama, JC Chair, agreed to take active lead to push identified tactical items
- Brought on board Y Mochida (Fujitsu) to assist in formation of Japan Industry Advisory Board (JIAB)
- JIAB formation plan to be further discussed at July JC meeting with aim for formalization under JC in Oct JC meeting
- Name of JIAB may change to better fit local culture (e.g. Industry Support Committee)
- MAW likely to be coordinated under JIAB
- M Koyama contacting A Nishihara about YP activities
- Initiated contacts with 4 sections with sizeable YP membership on YP AG formation
- Companies are supportive while also providing useful suggestions on how to proceed
JC 2014 Agenda for JIAB

- Define objectives and charter of JIAB
- Review status of 9 sections in view of JIAB
- Discuss & strengthen IEEE member value and benefits
- Strengthen potential abilities of JIAB members
- Internationalization of various aspects of JIAB members
- Relations & joint activities with affinity groups (LMAG, WIE and YP)
- Relations with domestic institutes like IEICE and IPSJ
- Survey of industry commitment with IEEE
India Strategy

Data
- Data capture
- Segmentation

Strategies
- Formulation
- Prioritization

Tactical
- Formulation
- Prioritization

Implement
- Programs & Activities
- Leadership
India Plan Update

- Met with India Council and Section Chairs at Region 10 meeting. Asked for their input on tactical plans and who should be accountable.
- Section chairs and council leaders provided additional ideas and feedback, but not overly tactical and little input on accountability.
- Began plan for collection of dues payment in Rupees for the 2015 Membership Year.
- Additional solicitations for tactical action items made after IEEE Region 10 meeting with India Council/Section leadership.
- Consolidated inputs and sent out to TF and India volunteer leadership for ranking.
Overall Challenges with the Planning

Diversity of views

Accountability
  - engagement and commitments

Faster implementation may require more staff resources

Note:
IEEE Board/FinCom and MGA Board approved $40K per country in 2014 for programs to drive growth
Initially worked in conjunction with IEEE Board Strategic Planning Committee
- They now are leaving the project to us to implement

April: Conducted interviews with key stakeholders:
- “How do you define a practitioner?”
  - In interviews with just 5 people, wide disparity in views
Because of the wide disparity, the research team has recommended:

- To refine our questioning, we need to get more information before we move to "quantitative" survey.

The current plan:

- Conduct two online focus groups of about 10 members each who consider themselves to be "practitioners"
  - 2-3 days in early June
- After we get some better ideas from the focus groups on how to focus quantitative survey, we will draft the questionnaire and share with sub-team for input
  - Survey in the field during early Q3 of the year.
China Membership Dev Review

- Started review process in cooperation with IEEE Beijing office staff
- 2014 activities plan submitted
- Identification of areas of improvement underway
China Plan – 2014

Key Initiatives
- Implementing MGA Geographic strategy model for China (Completed)
- Promotion of senior member/fellow elevation & IEEE awards program (Completed)
- Promotion of student competitions (Completed)
- Strengthening communication with members & customers through China social media platforms (Completed)

Key Challenges
- Providing quick response and better service to Chinese members (in progress)
- Section vitality (in progress)
- Industry engagement (in progress)
- National society collaborations (in progress)
- Establishing IEEE brand name and public visibility (in progress)

Staff Support
- IEEE China ‘Office’
- IEEE Asia/Pacific ‘Office’

GOALS

Member Satisfaction
- improved performance in member experience surveys
- increased benefit utilization
- increased member elevations

Membership Growth
- increased membership #
- increased participation
- increased retention

Volunteer Satisfaction
- increased # activities
- improved performance in volunteer survey

Partner Satisfaction
- increased industry sponsorship of IEEE activities and Volunteers
1st Quarter 2014

- Review activities of 2013 Committee
  - ✓
- Establish team leads for key activities
  - India, Japan, Practitioner Research
  - ✓
- Establish India and Japan Task Force Teams
  - ✓
- Review Ralph Ford/MGA’s Playbook for Strategy
  - ✓
- Finalize 2014 Calendar for India activities
  - Plan must define accountability
  - Still in development
- Finalize 2014 Calendar for Japan activities
  - Plan must define accountability
  - ✓
2nd Quarter 2014

- India plan implementation underway
- Japan plan implementation underway
- Committee to review membership activities in China
- Open discussions about IEEE Membership relevance to practitioners
- Define research project to better understand IEEE’s relevance to practitioners

Status

Still in development

Still in development

Will aim for a teleconference review in July

Phase 1: Focus Groups
Phase 2: Quant Research
3rd Quarter 2014

- Checkpoint of progress against implementation of Japan and India tactical plans

- 2014 Membership Year end country metrics review for India, China, Japan, USA

- Implement practitioner research plan
End of Report
TO: IEEE Member and Geographic Activities Board – 15 February 2014

FROM: Wai-Choong (Lawrence) Wong, MGA Vice Chair-Strategic Management and Analysis

SUBJECT: MGA Strategic Direction and Environment Assessment (SDEA) Committee Report

---

2014 Priorities:

- Implementation of strategic plans and actions for Japan and India
- Review and refine China membership plan
- Implementation of country metrics (Japan, India, China, USA)
- Develop better understanding of how to improve IEEE Membership’s value to practitioners

2014 Milestones:

1st Quarter 2014

- Review activities of 2013 Committee
- Establish team leads for key activities
  - India, Japan, Practitioner Research
- Establish India and Japan Task Force Teams
- Review Ralph Ford/MGA’s Playbook for Strategy
- Finalize 2014 Calendar for India activities
  - Plan must define accountability
- Finalize 2014 Calendar for Japan activities
  - Plan must define accountability

2nd Quarter 2014

- India plan implementation underway
- Japan plan implementation underway
- Committee to review membership activities in China
- Open discussions about IEEE Membership relevance to practitioners
- Define research project to better understand IEEE’s relevance to practitioners

3rd Quarter 2014

- Checkpoint of progress against implementation of Japan and India tactical plans
- 2014 Membership Year end country metrics review for India, China, Japan, USA
- Implement practitioner research plan
REPORT

4th Quarter 2014

- Final review of 2014 progress against Japan & India Plans
  - Recommendations for 2015
- Dashboards fully implemented
  - Used for November 2013 MGA Board Update
- Present results of practitioner research to MGAB at November 2014 meeting

Impact to IEEE

- Results and lessons learned for China, India, and Japan plans
- Measured progress of key indicators in prioritized countries
- Improved understanding how we can significantly improve IEEE relevance to practitioners
2014 Plans
SD&EA* Committee

Wai-Choong (Lawrence) Wong,
Vice Chair, Strategic Management and Analysis

Initial Committee Telconference
6 February 2014

* Strategic Direction and Environmental Assessment
2014
Strategic Direction & Environmental Assessment Committee

SD&EA Chair:
Wai-Choong (Lawrence) Wong
Singapore

Past Technical Activities VP:
Bob Hebner
Austin, TX, USA

Deepak Mathur
Ahmedabad, Gujarat, India

Kukjin Chun
Seoul, South Korea

Cecelia Jankowski
Piscataway NJ USA

Celia Desmond:
Missassauga, ON, Canada

Dan Coode
Saskatoon, SK, Canada

Maike Luiken
Sarnia, ON, Canada

Al Reinhart
Boylston, MA, USA

Ellis Nolley
Saint Paul, MN, USA

Partners and Support

Jamie Moesch
Piscataway, NJ, USA

Fanny Su
Singapore
2014 Priorities

- Oversee implementation of Japan and India plans developed in 2013

- Review and refine China membership plan

- Regular reporting of progress against country metrics to the committee (for priority countries)
  - China, United States, India, Japan

- Develop better understanding of how to improve IEEE Membership’s value to practitioners
Quick Update: Japan and India Plans

(see more detail in appendix)
Recommended Strategies - Japan

Current Top Choices to move to Tactical Planning stage
- Better Collaboration with Industry –within and outside of the 8 sponsoring companies
- Conduct more relevant technical events and conferences for practitioners & young professionals

Strategic Priority: Other High
- Facilitate awareness of Japanese technology professionals in the global marketplace
- Better incorporation of Japanese language in IEEE materials
- Programs to improve “English for Engineers” proficiency

Strategic Priority: Medium
- Develop specific Membership Market Development plan in conjunction with Japan Volunteers & Staff
- Better collaboration with technology and economic development associations in Japan
- Grow volunteer base
- Grow student membership (via programs outside of standard membership development)
  e.g. expand student branches, more student volunteers

Notes: More detail, and initial tactics for consideration on next two pages
We will not have the resources to implement every strategy
Tactical Implementation

Better collaboration with Industry

- Establish IEEE MGA Industry Advisory Board in Japan
- Develop co-marketing industry recruitment campaign with relevant IEEE Societies (RAS, Computer, ComSoc, PES, etc.)
- Tokyo based Metro Area Workshop
- Participate in key practitioner conferences and events to extend visibility with Industry

Conduct more relevant events for Practitioners & Young Professionals

- Establish leader for improving Young Professionals program in Japan
- Conduct 4 Young Professional Networking events in 2014
- Establish 3 Young Professionals groups in sections outside Tokyo
- Ensure Tokyo Metro Area Workshop has Young Professionals component
Recommended Strategies – India

**Strategic Priority: High**
- Improve relevance and partnerships of IEEE to industry, academic, and government sectors
- Develop programs to enhance membership growth and retention, particularly for young professionals and student members

**Strategic Priority: Medium**
- Improve interactions and engagement among different components of organizational units
- Develop clearly articulated, volunteer opportunity and evolution paths

**Strategic Priority: Lower**
- Expand outreach of IEEE relevance beyond cities
- Improve mechanisms of membership dues payment
Tactical Implementation

Improve relevance and partnerships of IEEE to industry, academic, and government sectors

- In development
- In development
- In development

Develop programs to enhance membership growth & retention, particularly for young professionals & students

- In development
- In development
- In development
Challenges we’ve encountered

- **Both Countries**
  - Finalizing plans and socializing with local leaders
  - Establishing leaders for key items
  - Defining accountability
    - Assigning directly responsible individuals

- **Japan**
  - Full engagement of local volunteer leaders and task force members
  - Academic centric leadership

- **India**
  - Diversity of views
  - Commitment to final planning
1st Quarter 2014

- Review activities of 2013 Committee
- Establish team leads for key activities
  - India, Japan, Practitioner Research
- Establish India and Japan Task Force Teams
- Review Ralph Ford/MGA’s Playbook for Strategy
- Finalize 2014 Calendar for India activities
  - Plan must define accountability
- Finalize 2014 Calendar for Japan activities
  - Plan must define accountability

Status

Being done in today’s meeting
India plan implementation underway
Japan plan implementation underway
Committee to review membership activities in China
Open discussions about IEEE Membership relevance to practitioners
Define research project to better understand IEEE’s relevance to practitioners
3rd Quarter 2014

- Checkpoint of progress against implementation of Japan and India tactical plans
- 2014 Membership Year end country metrics review for India, China, Japan, USA
- Implement practitioner research plan
4th Quarter 2014

- Final review of 2014 progress against Japan & India Plans
  - Recommendations for 2015

- Dashboards fully implemented
  - Used for November 2013 MGA Board Update

- Present results of practitioner research to MGAB at November 2014 meeting
Impact of our 2014 Plans on IEEE

- Results and lessons learned for China, India, and Japan plans
- Measured progress of key indicators in prioritized countries
- Improved understanding how we can significantly improve IEEE relevance to practitioners
Questions and Discussion
Appendix – Some 2013 Work Products of SD&EA Committee
High Level Process Steps

1. Conduct critical assessment of applicable internal and external factor data for the country – Environmental Scan

2. Perform SWOT Analysis based on prior data/information

3. Develop recommended high level strategies for membership growth in the country

4. Prioritize recommended strategies in conjunction with local volunteers & staff

5. Develop tactical programs for top strategies for MGA and other OU’s to consider for funding/priority
   - Provide recommended project plans for implementation of tactical plans (including financial models)
# Japan Membership Revitalization SWOT Summary

## Strengths
- Member retention of 90%+ in every section
- IEEE Publications & Conferences
- Currently Japan Council is sponsored (via human resource) by 8 companies: Toshiba, Fujitsu, Mitsubishi, NEC, NTT, Hitachi, Sumitomo, KDDI
- Currently have staff presence in Japan
- Strong brand awareness with academics
- Existing relationships with Academia, National Societies & Corporations
- Many researchers in academia/companies

## Weaknesses
- Poor Industry penetration outside Tokyo & other than 8 sponsoring companies
- Low Member Recruitment esp. student members
- Low value proposition for local membership
- Few OUs: Student Branches, Chapters, AGs
- Lack of young volunteers/local activities
- Could be seen as too theoretical because over 70% of members have PhD
- Many potential members may not speak/read English
- Low brand awareness outside academia
- Professors do not understand IEEE value beyond publications

## Opportunities
- Further the collaborations of existing NSA and SSA
- IEEE has global branding/connections
- Strong influence of professors
- Need for more information in Japanese (e.g. Website, Publications)
- Attract more industry practitioners
- Potential for more volunteers (but must be invited), more OUs
- Leverage on the strong influence of Japan Council volunteers
- Leverage on the 8 major supporting corporations
- Expand relationships and sponsorship beyond the 8 companies, involve more from emerging fields
- Up-grading the English proficiency of Engineers
- Japanese government “G30” plans to globalize
- Global Career resources for young researchers/students

## Threats
- Japanese associations providing more relevant benefits
- Open Access may result in less members joining who are here for society journals
- Demographic imbalance (aging population without offsetting new members)
- # of Students entering and graduating from engineering programs
- Economy in recession/stagnation, budget cuts and less support from Industry
# India Membership : SWOT

## Strengths
- Student recruitment
- IEEE Brand is trusted/valued
- Conferences
- Support for IEEE professions throughout country and culture
- Energetic students & young professionals
- Improving trend of Higher Grade members
- IEEE’s Social Media presence can be used to connect with young people
- Vibrant and growing sections
- Volunteerism is widespread in India

## Weaknesses
- Higher Grade recruitment
- Student retention
- Sections too widely distributed and focused on cities
- Appears that pricing is considered high
- Possible issues with payment in USD
- Postal delivery issues for magazines
- High # of Student branches with <12 mbrs (40%)
- High Ratio of student branches to sections and no plan for how the section can work with this
- Succession planning for volunteer leadership
- Career tools not fine tuned to Indian perspectives
- Diversified interests of volunteers across India

## Opportunities
- Improve relevance to industry
- Allow for payment of member dues by members through their bank/wire transfer
- Reward student branches according to their retention rates (pay higher rebate for retention)
  - Also consider incenting the section for this activity
- Create more opportunities for professional networking
- Create more opportunities for career development
- Improve connections between student branches and sections/chapters
  - Develop operational plan that recommends methodology because of high ratio (branch/section)
- Formal program to develop relationships with Companies, Gov’t Ministries, Univ
- Leverage India Gov’t initiatives to drive education as there are large investments in this area
- More formal programs to target and retain IT professionals (incl. CS & CE)
- Market social innovation side of IEEE
- Potential for forming more GeoUnits (sections/sub-sections)
- Target Post-Graduates (e.g. Masters/PhD)
  - Build up GOLD program
- Better leverage conferences to expand our presence in India
- Tapping India volunteers for larger positions
- Lower priced student membership

## Threats
- ACM and other societies at lower prices
- Alienating large groups of students and turning them off to IEEE in the future
- Alienating energetic & engaged GOLD members
- Poor conference quality could damage IEEE Brand
- Lack of common goals
- Competition in Open Access arena
## Prioritization & Action Planning

<table>
<thead>
<tr>
<th>Prioritization Criteria</th>
<th>Strategy (in bold; tactics in regular font under strategies)</th>
<th>MGA Global Development Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for Impact</td>
<td></td>
<td>Market Development</td>
</tr>
<tr>
<td>Resources and $</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Period of ROI* (yrs)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>H M 2</td>
<td>Better collaboration with Industry</td>
<td></td>
</tr>
<tr>
<td>Tactical Options</td>
<td>Target activities with Existing Sponsors of Japan Council (Panasonic, Fujitsu, etc.)</td>
<td></td>
</tr>
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<td>Solicit sponsorship and participation in student and Young Professional activities</td>
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<tr>
<td></td>
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<td>Speak to companies about better ways to market IEEE membership to their employees</td>
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<td>Engage IEEE Spectrum better with Robotics Industry and promote it</td>
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</tr>
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<td></td>
<td>Focus activities on Consumer Electronics and Power</td>
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</tr>
<tr>
<td></td>
<td>Develop program to pitch the infrastructure of IEEE to corporations</td>
<td></td>
</tr>
<tr>
<td>H M 2</td>
<td>Better incorporate Japanese language into materials and offerings</td>
<td>X</td>
</tr>
<tr>
<td>Tactical Options</td>
<td>Visibility and Marketing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Translate IEEE home page and website into Japanese</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Japanese Membership Brochure (maybe incorporate more in IEEE Corporate brochure)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Translate key membership pages into Japanese (e.g. Benefits) - or completely new page on Japan benefits</td>
<td>X</td>
</tr>
<tr>
<td>Programs and Products</td>
<td>IEEE Spectrum in Japanese</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>IEEE TV Programs subtitles in Japanese</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IEEE TV Programs in Japanese</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consider offering CLE in Japanese language</td>
<td></td>
</tr>
<tr>
<td>H M 2</td>
<td>Develop and execute Japan Market Development plan (sales and marketing) in collaboration with volunteers</td>
<td>X</td>
</tr>
<tr>
<td>Tactical Options</td>
<td>Utilize framework developed for US Market Development plan</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Evaluate in country sources for advertising, social media, etc</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Project to understand marketing in Japan</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Develop and execute volunteer MD Plan and ongoing training</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Develop and communicate performance metrics</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Emphasize higher grade recruitment as priority</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Develop marketing plans to increase Industry participation/recruitment</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Introduce and or expand our presence at existing Industry conferences</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Better focus on global nature of IEEE in marketing materials</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>IEICE Market test of significant discounting</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Collaborate with Industry (through promotions) to market IEEE membership to their employees</td>
<td>X</td>
</tr>
</tbody>
</table>
### Prioritization Criteria

<table>
<thead>
<tr>
<th>Potential for Impact</th>
<th>Resources</th>
<th>Period of ROI* (yrs)</th>
<th>Strategy (in bold; tactics in regular font under strategies)</th>
<th>MGA Global Development Goal</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Market Development</td>
<td>Member Development</td>
</tr>
<tr>
<td>M</td>
<td>L</td>
<td>2</td>
<td>Better collaborate with Technical and Economic Associations in Japan</td>
<td>X</td>
</tr>
<tr>
<td>Tactical Options</td>
<td></td>
<td></td>
<td>IEICE Program</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Consider repeating IEICE program if successful with other associations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Conduct meetings with other targeted associations in Japan to understand connections</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>L</td>
<td>2</td>
<td>Grow volunteer base</td>
<td></td>
</tr>
<tr>
<td>Tactical Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>H</td>
<td>2</td>
<td>Conduct more relevant Technical Events/Conferences/Workshops for practitioners and Young Professionals</td>
<td>X</td>
</tr>
<tr>
<td>Tactical Options</td>
<td></td>
<td></td>
<td>Utilize the US Metro area workshop construct for events in Japan</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Partner Japanese volunteers with volunteers outside Japan who have held effective practitioner initiatives</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>H</td>
<td>1</td>
<td>Grow student membership</td>
<td>X</td>
</tr>
<tr>
<td>Tactical Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>H</td>
<td>2</td>
<td>Programs to improve English proficiency</td>
<td>X</td>
</tr>
<tr>
<td>Tactical Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>H</td>
<td>3+</td>
<td>Facilitate awareness and success of Japanese technology professionals in the Global Marketplace</td>
<td>X</td>
</tr>
<tr>
<td>Tactical Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Strategy:
### Better collaboration with Industry

<table>
<thead>
<tr>
<th>Target activities with existing Sponsors of Japan Council (Panasonic, Fujitsu, etc...)</th>
<th>Rank Order</th>
<th>Recommended Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solicit sponsorship and participation in student and Young Professional activities</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Develop program to pitch the infrastructure of IEEE to corporations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborate with Japanese societies/companies on local activities, eg high school robot competition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create Japan Industry Advisory Board</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborate with industry in major exhibitions (eg. IREX2013 (International Robot Exhibition))</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Other Suggestions: (Enter Here)*
Strategy:

Conduct more relevant Technical Events / Workshops for practitioners & Young Professionals

<table>
<thead>
<tr>
<th>Recommended Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank Order</td>
</tr>
</tbody>
</table>

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Partner Japanese volunteers with volunteers outside Japan who have held effective practitioner initiatives</td>
</tr>
<tr>
<td>Establish a Japan Young Professional Author Awards program</td>
</tr>
<tr>
<td>Organize meeting centered on one or more Future Direction topics (with side event, eg. Hackathon)</td>
</tr>
</tbody>
</table>

*Other Suggestions: (Enter Here)*
Country Metrics Sample
USA
### For Consideration USA MGA Metrics – Level 1

#### Member Development
Overall Member Satisfaction (Rating = 5/5)

<table>
<thead>
<tr>
<th></th>
<th>2012 Actual</th>
<th>2013 Goal</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>26%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>28%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Market Development
Number of Members - August

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>HGM</td>
<td>167,308</td>
<td>172,320</td>
<td>-2.9%</td>
</tr>
<tr>
<td>GSM</td>
<td>11,249</td>
<td>9,936</td>
<td>13.2%</td>
</tr>
<tr>
<td>Student</td>
<td>12,266</td>
<td>12,034</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

#### Partner Development
Number of Official Programs with Partners

<table>
<thead>
<tr>
<th>Goal</th>
<th>Actual</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

#### Volunteer Development
Volunteer Satisfaction (Rating = 5/5)

<table>
<thead>
<tr>
<th></th>
<th>2013 Goal</th>
<th>2013 1Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>NA</td>
<td>68%</td>
</tr>
<tr>
<td>Student</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

#### Key Membership Project Initiatives in USA

<table>
<thead>
<tr>
<th>Project</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropolitan Area Workshops</td>
<td>2 events in 2011, 4 in 2012 and 4 in 2013; average attendance 160, 20% were new members</td>
</tr>
<tr>
<td>US Recruitment Reps</td>
<td>2 FTE each responsible for 3 US regions Focus on HGM growth</td>
</tr>
<tr>
<td>USA Incentive</td>
<td>Offers members an IEEE-USA branded merchandise item for every new member they recruit thru 31 Dec</td>
</tr>
</tbody>
</table>

*2012 and 2008 Member Segmentation Survey*
### For Consideration Market Development – Level 2 Metrics

#### August

<table>
<thead>
<tr>
<th></th>
<th>Number of Members</th>
<th>Recruitment</th>
<th>Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013</td>
<td>2012</td>
<td>% diff</td>
</tr>
<tr>
<td>Higher Grade</td>
<td>167,308</td>
<td>172,320</td>
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<td>Student</td>
<td>12,266</td>
<td>12,034</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

**Note:**
-1 to 0 %
>+1 %
>>+1 %

---

**Key Takeaways:**

**Areas driving the declines:**

1. Most US sections continue to be down in terms of recruitment and retention. Proportionally, those areas most impacted by economic downturns and government cutbacks are suffering the highest losses (E.G. N. Virginia, Baltimore, Houston, Florida West Coast, Chicago, Southeastern Michigan)

2. There are some section seeing downturns that we need to investigate further as they might be more than just the economy/government cutbacks (E.G. Phoenix, Oregon, Washington, Princeton/Central Jersey, Twin Cities, Costal LA, Philadelphia.

2. US higher grade recruitment is down.

**Some positive outlooks for the future:**

The US student&GSM recruitment has been up for the past two years.
**For Consideration Member Development – Level 2 Metrics**

**Overall Member Satisfaction (Rating = 5/5)**

<table>
<thead>
<tr>
<th>Service</th>
<th>2012 Actual</th>
<th>2013 Goal</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online access to transactions, journals, and magazines</td>
<td>61%</td>
<td></td>
<td>+7%</td>
</tr>
<tr>
<td>Conferences</td>
<td>59%</td>
<td></td>
<td>+5%</td>
</tr>
<tr>
<td>Discounts on professional Products &amp; Services</td>
<td>47%</td>
<td></td>
<td>+8%</td>
</tr>
<tr>
<td>Opportunities for Professional Networking</td>
<td>42%</td>
<td></td>
<td>+9%</td>
</tr>
<tr>
<td>Promoting the appreciation of technology</td>
<td>38%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Employment Status**

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>2012*</th>
<th>2008**</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Industry</td>
<td>52%</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>Educational Institution</td>
<td>13%</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>All Others</td>
<td>35%</td>
<td>31%</td>
<td></td>
</tr>
</tbody>
</table>

**Top 5 Priority Areas for Improvement**

- **Notes:**
  - * 2012 Member Segmentation Survey for top 5 priority areas for improvement needs to be scheduled upon actions taken.
  - ** 2008 Member Segmentation Survey

**Key Takeaways:**

* 2012 data from Member Segmentation Study
For Consideration Volunteer Development – Level 2 Metrics

Volunteer Satisfaction (Rating = 5/5)

<table>
<thead>
<tr>
<th></th>
<th>2013 Goal</th>
<th>Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>Xx%</td>
<td>68%</td>
</tr>
<tr>
<td>Student</td>
<td>Xx%</td>
<td>NA</td>
</tr>
</tbody>
</table>

# CLE Participation

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
<th>% diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>415</td>
<td>415</td>
<td>NA</td>
</tr>
<tr>
<td>Student</td>
<td>10</td>
<td>10</td>
<td>NA</td>
</tr>
</tbody>
</table>

Notes:
The upcoming Volunteering Survey should provide some directions and insights to the segment.

# Vacant Officer Positions

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
<th>% diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# of First Time Volunteer Officers

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
<th>% diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>468</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# of Section Officers who are GOLD members

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
<th>% diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>913</td>
<td>552</td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Placeholder – Volunteers from Industry?

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
<th>% diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
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# CLE Participation

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<tr>
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<th>2012</th>
<th>% diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
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<td>415</td>
<td>NA</td>
</tr>
<tr>
<td>Student</td>
<td>10</td>
<td>10</td>
<td>NA</td>
</tr>
</tbody>
</table>

Key Takeaways:
For Consideration Partner Development – Level 2 Metrics

Number of Official Programs with Partners

<table>
<thead>
<tr>
<th>Goal</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>1</td>
</tr>
</tbody>
</table>

Official Partners with ongoing programs

<table>
<thead>
<tr>
<th>Partner</th>
<th>Type</th>
<th>New*</th>
<th>Nature of MoU</th>
<th>Sponsorship Revenue**</th>
<th># Members Delivered***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boeing</td>
<td>Industry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xyz</td>
<td>Academic</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xyz</td>
<td>Academic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xyz</td>
<td>Government</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xyz</td>
<td>Industry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xyz</td>
<td>Government</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xyz</td>
<td>Academic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xyz</td>
<td>Industry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Work in progress

Key Takeaways:

* New = Less than 12 months  ** Year to Date  *** Membership Year to Date
2013 SD&EA* Committee Report

November 2013 Update for MGA Board

Wai-Choong (Lawrence) Wong,
Vice Chair, Strategic Management and Analysis

* Strategic Direction and Environmental Assessment
IEEE MGA-SDEA Update

- Japan Strategy
- India Strategy
- Dashboard (Country Metrics)
- Workplan 2014 (for discussion)
2013 Priorities

- Finalize Japan plan details and begin implementation
- Develop an MGA Strategy for India
- Develop dashboard “country metrics” to monitor and measure progress for priority countries
  - China, United States, India, Japan
Key Accomplishments thus far

- Finalized and met with Task Force Teams
  - Japan (Leader: Lawrence Wong)
  - India (Leader: Kukjin Chun)
  - Country Metrics: (Leader: Lawrence Wong)

- Identified on top two strategies for Japan and corresponding tactical priority action items

- Completed India environmental scan, SWOT, and identified top two strategies for India

- Developed second revision of Country Metrics
Project: Japan Strategy Plan

Goal
Membership growth through improved member satisfaction, volunteer training & engagement, and targeted marketing and benefits in Japan.

Member Experience Improvement
• Develop more relevant engagement opportunities for members from Industry
• Building a larger IEEE network for members in Japan
• Improved relevance of IEEE in Japan
• Provide more engaging recruitment messaging (e.g. In Japanese language)

Project Success - Metrics
• Increased HG recruitment
• Increased % members from Industry
• Increased % volunteers from Industry
• Improved Student Recruitment

Progress

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Target Completion</th>
<th>% Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete analysis, development of SWOT &amp; Recommended strategies</td>
<td>2012</td>
<td>100%</td>
</tr>
<tr>
<td>Development of Task Force team to lead implementation</td>
<td>Q1</td>
<td>100%</td>
</tr>
<tr>
<td>Kickoff meeting of Task Force</td>
<td>Q2</td>
<td>100%</td>
</tr>
<tr>
<td>Finalize prioritization of Strategy &amp; Tactics for Japan plan</td>
<td>Nov 2013</td>
<td>100%</td>
</tr>
<tr>
<td>Scope high priority project efforts and assign tasks</td>
<td>Dec 2013</td>
<td>50%</td>
</tr>
<tr>
<td>Launch of Country Metrics &amp; Goals to be measured Quarterly</td>
<td>Q3</td>
<td>50%</td>
</tr>
<tr>
<td>Launch implementation of prioritized projects</td>
<td>Q4</td>
<td>0%</td>
</tr>
</tbody>
</table>

Budget

<table>
<thead>
<tr>
<th>Year</th>
<th>MGA</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>$25K*</td>
<td>- Membership recruitment materials in Japanese</td>
</tr>
<tr>
<td>2014</td>
<td>$100K*</td>
<td>- Japanese recruitment materials - Marketing (Advertising, list purchases) - Workshops, networking meetings</td>
</tr>
</tbody>
</table>

* Rough estimate – could be higher
**Japan Membership Revitalization SWOT Summary**

**Strengths**
- Member retention of 90%+ in every section
- IEEE Publications & Conferences
- Currently Japan Council is sponsored (via human resource) by 8 companies Toshiba, Fujitsu, Mitsubishi, NEC, NTT, Hitachi, Sumitomo, KDDI
- Currently have staff presence in Japan
- Strong brand awareness with academics
- Existing relationships with Academia, National Societies & Corporations
- Many researchers in academia/companies

**Weaknesses**
- Poor Industry penetration outside Tokyo & other than 8 sponsoring companies
- Low Member Recruitment esp. student members
- Low value proposition for local membership
- Few OUs: Student Branches, Chapters, AGs
- Lack of young volunteers/local activities
- Could be seen as too theoretical because over 70% of members have PhD
- Many potential members may not speak/read English
- Low brand awareness outside academia
- Professors do not understand IEEE value beyond publications

**Opportunities**
- Further the collaborations of existing NSA and SSA
- IEEE has global branding/connections
- Strong influence of professors
- Need for more information in Japanese (e.g. Website, Publications)
- Attract more industry practitioners
- Potential for more volunteers (but must be invited), more OUs
- Leverage on the strong influence of Japan Council volunteers
- Leverage on the 8 major supporting corporations
- Expand relationships and sponsorship beyond the 8 companies, involve more from emerging fields
- Up-grading the English proficiency of Engineers
- Japanese government “G30” plans to globalize
- Global Career resources for young researchers/students

**Threats**
- Japanese associations providing more relevant benefits
- Open Access may result in less members joining who are here for society journals
- Demographic imbalance (aging population without offsetting new members)
- # of Students entering and graduating from engineering programs
- Economy in recession/stagnation, budget cuts and less support from Industry
# Tactical Actions (Shortlist)

## Strategy: Better collaboration with Industry
- Create Japan Industry Advisory Board
- Speak to companies about better ways to market IEEE membership to their employees
- Collaborate with Japanese societies/companies on local activities

## Strategy: Conduct more relevant Technical Events, Conferences, & Workshops for practitioners and Young Professionals
- Establish a Japan Young Professional Awards program that recognizes young professionals from Industry with significant accomplishments
- Expand success of Tokyo Young Researchers Workshop to other areas, e.g. Kansai
- Engage IEEE GOLD AG Leaders to help achieve the strategy of conducting more relevant events
- Develop series of events that can be conducted across Japan and promoted to industry practitioners
Japan Strategy – Decisions & Actions

Action items:
- Identify who to include in the development of IEEE Japan Industry Advisory Board.
- Reach out to Japan GOLD leaders to engage them in the development of the strategy to hold more relevant technical events for practitioners and young professionals.
- Scope out work that would be required to hold a Young Researchers Workshop in Kansai section.
- Scope out work required to develop and launch a Japan Young Professional award.
- Determine metrics (dashboard) for the tactical action items.
- Work out available resources to execute tactical action items.

Issues:
- Engagement with Japanese volunteer leaders.
- Academic centric.

Proposal:
- Direct engagement with IEEE Japan Council to get top-down commitment.
- F2F with Japan Council & Section chairs to solidify buy-in and commitments.
Project: India Strategy Plan

Goal
Membership growth through improved member satisfaction, volunteer training & engagement, and targeted marketing and benefits in India.
- Also finalize required data gathering in 2013

Member Experience Improvement

- Develop more relevant engagement opportunities for members in India
- Improved retention (especially student) resulting in a larger IEEE network for members in India
- Improved relevance of IEEE in India
- Improved support from local sections and chapters for members

Project Success - Metrics

- Increased Retention (especially Student)
- Increased interactions between sections and student branches
- Improved Student Recruitment
- Increased member & volunteer satisfaction

Progress

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Target Completion</th>
<th>% Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Data Gathering to share with Task Force</td>
<td>Q2 2013</td>
<td>100%</td>
</tr>
<tr>
<td>Development of Task Force team to lead implementation</td>
<td>Q2</td>
<td>100%</td>
</tr>
<tr>
<td>Kickoff meeting of Task Force</td>
<td>Q2</td>
<td>100%</td>
</tr>
<tr>
<td>Review all relevant data, develop SWOT &amp; Recommended Strategy and Tactics</td>
<td>Nov 2013</td>
<td>100%</td>
</tr>
<tr>
<td>Scope high priority project efforts and assign tasks</td>
<td>Q4</td>
<td>10%</td>
</tr>
<tr>
<td>Launch of Country Metrics &amp; Goals to be measured Quarterly</td>
<td>Q4 2013</td>
<td>0%</td>
</tr>
<tr>
<td>Launch implementation of prioritized projects</td>
<td>Q4 2013</td>
<td>0%</td>
</tr>
</tbody>
</table>

Budget

<table>
<thead>
<tr>
<th>Year</th>
<th>MGA</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>$15K</td>
<td>- External environmental scan study - May use SDEA funds for Face to Face</td>
</tr>
<tr>
<td>2014</td>
<td>$100K*</td>
<td>- Marketing (Advertising, list purchases) - TBD placeholder until projects defined</td>
</tr>
</tbody>
</table>

* Rough estimate – could be higher
### India Membership: SWOT

#### Strengths
- Student recruitment
- IEEE Brand is trusted/valued
- Publications
- Conferences
- Support for IEEE professions throughout country and culture
- Energetic students & young professionals
- Improving trend of Higher Grade members
- IEEE’s Social Media presence can be used to connect with young people
- Vibrant and growing sections
- Volunteerism is wide spread in India

#### Weaknesses
- Higher Grade recruitment
- Student retention
- Sections too widely distributed and focused on cities
- Appears that pricing is considered high
- Possible issues with payment in USD
- Postal delivery issues for magazines
- High # of Student branches with <12 mbrs (40%)
- High Ratio of student branches to sections and no plan for how the section can work with this
- Succession planning for volunteer leadership
- Career tools not fine tuned to Indian perspectives
- Diversified interests of volunteers across India

#### Opportunities
- Improve relevance to industry
- Allow for payment of member dues by members through their bank/wire transfer
- Reward student branches according to their retention rates (pay higher rebate for retention)
  - Also consider incenting the section for this activity
- Create more opportunities for professional networking
- Create more opportunities for career development
- Improve connections between student branches and sections/chapters
  - Develop operational plan that recommends methodology because of high ratio (branch/section)
- Formal program to develop relationships with Companies, Gov’t Ministries, Univ
- Leverage India Gov’t initiatives to drive education as there are large investments in this area
- More formal programs to target and retain IT professionals (incl. CS & CE)
- Market social innovation side of IEEE
- Potential for forming more GeoUnits (sections/sub-sections)
- Target Post-Graduates (e.g. Masters/PhD)
  - Build up GOLD program
- Better leverage conferences to expand our presence in India
- Tapping India volunteers for larger positions
- Lower priced student membership

#### Threats
- ACM and other societies at lower prices
- Alienating large groups of students and turning them off to IEEE in the future
- Alienating energetic & engaged GOLD members
- Poor conference quality could damage IEEE Brand
- Lack of common goals
- Competition in Open Access arena
Recommended Strategies - India

- Improve relevance of IEEE to industry, academia and government sectors
- Develop programs to enhance membership growth and retention, particularly for young professionals and student members
- Improve interactions and engagement among different components of organizational units
- Develop clearly articulated, volunteer opportunity and evolution paths
- Expand outreach of IEEE relevance beyond cities
- Improve mechanisms of membership dues payment
To do:
- Identification of tactical action items
- Prioritization of tactical action items
- Identification of leads
- Determine metrics (dashboard) for the tactical action items
- Work out resources required

Issues:
- Diversity of views
- Lead engagement and commitments

Proposal
- F2F with India volunteer leaders in early 2014 (Jan/Feb) to work through implementation plan:
  - Get buy-in
  - Fine-tune tactical action items
  - Identify leads
  - Pre-empt issues and show-stoppers
Key learning thus far

- The process is not moving as quickly as we anticipated

- Japan
  - Slow inertia to get inputs from Japanese volunteers
  - Limited engagement with Japan Council
  - Academic centric, limited industry views

- India
  - Diversity of views
  - Discussions on operational issues distract from strategic considerations

- Because some of the tactical projects will have budget implications, we will need to better understand how to re-allocate funding in 2014 to pay for the activities
Country Metrics Basics

✓ Metrics should measure the key items that show the health of the business (CTQs: Critical to Quality)

✓ If you try to measure everything, you may become good at measuring, but…

... not good at improving the critical items

✓ Goals for metrics must be SMART

• Specific Measurable Attainable Results Oriented and have a Timetable

✓ Leaders must use the metrics to manage

✓ “Red/Yellow/Green” thresholds must be predefined

✓ Regular reviews must be conducted to track performance
**For Consideration USA MGA Metrics – Level 1**

### Member Development

**Overall Member Satisfaction (Rating = 5/5)**

<table>
<thead>
<tr>
<th></th>
<th>2012 Actual</th>
<th>2013 Goal</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>26%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>28%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Market Development

**Number of Members - August**

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>HGM</td>
<td>167,308</td>
<td>172,320</td>
<td>-2.9%</td>
</tr>
<tr>
<td>GSM</td>
<td>11,249</td>
<td>9,936</td>
<td>13.2%</td>
</tr>
<tr>
<td>Student</td>
<td>12,266</td>
<td>12,034</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

### Partner Development

**Number of Official Programs with Partners**

<table>
<thead>
<tr>
<th>Goal</th>
<th>Actual</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
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<td></td>
</tr>
</tbody>
</table>

### Volunteer Development

**Volunteer Satisfaction (Rating = 5/5)**

<table>
<thead>
<tr>
<th></th>
<th>2013 Goal</th>
<th>2013 1Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>NA</td>
<td>68%</td>
</tr>
<tr>
<td>Student</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Key Membership Project Initiatives in USA

<table>
<thead>
<tr>
<th>Project</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropolitan Area Workshops</td>
<td>2 events in 2011, 4 in 2012 and 4 in 2013; average attendance 160, 20% were new members</td>
</tr>
<tr>
<td>US Recruitment Reps</td>
<td>2 FTE each responsible for 3 US regions Focus on HGM growth</td>
</tr>
<tr>
<td>USA Incentive</td>
<td>Offers members an IEEE-USA branded merchandise item for every new member they recruit thru 31 Dec</td>
</tr>
</tbody>
</table>

*2012 and 2008 Member Segmentation Survey*
## For Consideration Market Development – Level 2 Metrics

### August Number of Members

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
<th>% diff</th>
<th>2013</th>
<th>2012</th>
<th>% diff</th>
<th>2013</th>
<th>2012</th>
<th>% diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>167,308</td>
<td>172,320</td>
<td>-2.9%</td>
<td>7,177</td>
<td>7,865</td>
<td>-8.7%</td>
<td>84.6%</td>
<td>85.2%</td>
<td>-0.6%</td>
</tr>
<tr>
<td>GSM</td>
<td>11,249</td>
<td>9,936</td>
<td>13.2%</td>
<td>5,962</td>
<td>5,165</td>
<td>15.4%</td>
<td>71.7%</td>
<td>74.0%</td>
<td>-2.3%</td>
</tr>
<tr>
<td>Student</td>
<td>12,266</td>
<td>12,034</td>
<td>1.9%</td>
<td>12,056</td>
<td>11,706</td>
<td>3.0%</td>
<td>41.6%</td>
<td>47.0%</td>
<td>-5.4%</td>
</tr>
</tbody>
</table>

### Note:

-1 to 0 %
>1%
>+1%

### Since 2008 IEEE US Membership:

- Total : - 4.1%
- HGM : -5.9%
- StM : + 5.4%
- GSM : +18.2%

### Key Takeaways:

#### Areas driving the declines:

1. Most US sections continue to be down in terms of recruitment and retention. **Proportionally, those areas most impacted by economic downturns and government cutbacks are suffering the highest losses** (E.G. N. Virginia, Baltimore, Houston, Florida West Coast, Chicago, Southeastern Michigan)
   - There are **some section seeing downturns that we need to investigate further** as they might be more than just the economy/government cutbacks (E.G. Phoenix, Oregon, Washington, Princeton/Central Jersey, Twin Cities, Costal LA, Philadelphia.

2. **US higher grade recruitment is down.**

#### Some positive outlooks for the future:

- The US student&GSM recruitment has been up for the past two years.

---

### Recruitment

Since 08:

- Total : +0.7%
- HGM : +34.2%
- StM : -37.8%
- GSM : +32.3%

---

### Retention

Since 08:

- Total : 85.7%
- StM : 83.2%
- GSM : 75.1%
- HGM : 72.3%

- Total : 85.2%
- StM : 82.5%
- GSM : 74.7%
- HGM : 74.0%

- Total : 85.2%
- StM : 82.1%
- GSM : 47.0%
- HGM : 41.1%

---
Workplan 2014

- Follow through with Japan and India strategies
  - Tactical action items
  - Leads
  - Metrics
  - Resources

- China Strategy
  - Data driven approach
  - Review & streamline to strengthen MD and value

- Coordinated strategy with Societies
  - One-IEEE approach
  - Develop baseline joint approach
  - Pilot through country specific approach with selected societies

- Issues:
  - Volunteer buy-in / participation
  - Staff load vs volunteer commitments
Appreciation to 2013 MGA-SD&EA Committee Members

SD&EA Chair:
Wai-Choong (Lawrence) Wong
Singapore

Past SD&EA Chair:
Okyay Kaynak
Istanbul, Turkey

Past Technical Activities VP:
Fred Mintzer
Yorktown Heights, NY, USA

Al Reinhart
Boylston, MA, USA

Celia Desmond:
Mississauga, ON, Canada

Dan Coode
Saskatoon, SK, Canada

Kukjin Chun
Seoul, South Korea

Slawo Wesolkowski
Paris, France

Cecelia Jankowski
Piscataway NJ USA

Jamie Moesch
Piscataway, NJ, USA

Fanny Su
Singapore

Partners and Support
END OF PRESENTATION
Appendix
1st Quarter 2013

- Develop and finalize action plans for 2013
- Propose basic contents/framework of metrics that will work across countries
- Finalize detailed plans for Japan in conjunction with Japan Council/Section leaders
  - Also ensure Japan Professional Staff involvement
- Prepare India environmental assessment package

Status

Still a work in progress. Strategies & tactics developed.
2nd Quarter 2013

- Finalize prioritization of Japan tactics  ✔
- Initiate high priority tactics for Japan  Likely early 2014
- Finalize and Review India Environmental Data  ✔
- Face to Face meeting with India Council/Section leaders  Likely early 2014
- Draft SWOT analysis for India  ✔
- Draft country metrics for China & US progress  In development
  - Because tactical plans have been initiated
3rd Quarter 2013

- 1st checkpoint in implementation of Japan tactics

- Initial Draft of Strategic Priorities and Tactical Recommendations for India
  - Project / Resources Planning

- Finalize and Implement Country Metrics
  - China, US, Japan (India will be Q4)
4th Quarter 2013

- 2nd checkpoint in implementation of Japan tactics
- Finalize and Initiate high priority tactics for India
- Country Metrics fully implemented
  - Used for November 2013 MGA Board Update
- Document 2013 processes and achievements

Status

- Will likely start in early 2014 assuming there is funding
- Will have version for review and input by MGA Board
- Documented thru meeting notes and updates
For Consideration  Member Development – Level 2 Metrics

Overall Member Satisfaction (Rating = 5/5)

<table>
<thead>
<tr>
<th></th>
<th>2012 Actual</th>
<th>2013 Goal</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>26%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>28%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Top 5 Priority Areas for Improvement

<table>
<thead>
<tr>
<th>Priority Area</th>
<th>2012*</th>
<th>2008**</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online access to transactions, journals, and magazines</td>
<td>61%</td>
<td>54%</td>
<td>+7%</td>
</tr>
<tr>
<td>Conferences</td>
<td>59%</td>
<td>54%</td>
<td>+5%</td>
</tr>
<tr>
<td>Discounts on professional Products &amp; Services</td>
<td>47%</td>
<td>39%</td>
<td>+8%</td>
</tr>
<tr>
<td>Opportunities for Professional Networking</td>
<td>42%</td>
<td>35%</td>
<td>+9%</td>
</tr>
<tr>
<td>Promoting the appreciation of technology</td>
<td>38%</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

* 2012 Member Segmentation Survey for top 5 priority areas for improvement needs to be scheduled upon actions taken.
** 2008 Member Segmentation Survey

Key Takeaways:

Employment Status

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>2012*</th>
<th>2008**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Industry</td>
<td>52%</td>
<td>60%</td>
</tr>
<tr>
<td>Educational Institution</td>
<td>13%</td>
<td>9%</td>
</tr>
<tr>
<td>All Others</td>
<td>35%</td>
<td>31%</td>
</tr>
</tbody>
</table>

* 2012 data from Member Segmentation Study
# Volunteer Satisfaction (Rating = 5/5)

<table>
<thead>
<tr>
<th></th>
<th>2013 Goal</th>
<th>Q1</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>Xx%</td>
<td>68%</td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>Xx%</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

# Vacant Officer Positions

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
<th>% diff</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# of First Time Volunteer Officers

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
<th>% diff</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>468</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# of Section Officers who are GOLD members

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
<th>% diff</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Grade</td>
<td>913</td>
<td>552</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td></td>
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</table>

# CLE Participation

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<tr>
<th></th>
<th>2013</th>
<th>2012</th>
<th>% diff</th>
<th>Status</th>
</tr>
</thead>
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<tr>
<td>Higher Grade</td>
<td>415</td>
<td>415</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
The upcoming Volunteering Survey should provide some directions and insights to the segment.

### Key Takeaways:
## For Consideration Partner Development – Level 2 Metrics

### Number of Official Programs with Partners

<table>
<thead>
<tr>
<th>Goal</th>
<th>Actual</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

### Official Partners with ongoing programs

<table>
<thead>
<tr>
<th>Partner</th>
<th>Type</th>
<th>New*</th>
<th>Nature of MoU</th>
<th>Sponsorship Revenue**</th>
<th># Members Delivered***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boeing</td>
<td>Industry</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xyz</td>
<td>Academic</td>
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### Notes:

Work in progress

### Key Takeaways:

* New = Less than 12 months  ** Year to Date  *** Membership Year to Date
2013 Plans
SD&EA* Committee

June 2013 Update for MGA Board

Wai-Choong (Lawrence) Wong,
Vice Chair, Strategic Management and Analysis

* Strategic Direction and Environmental Assessment
2013 Priorities

- Finalize Japan plan details and begin implementation
- Develop an MGA Strategy for India
- Develop dashboard to monitor and measure progress of strategic items for priority countries
  - China, United States, India, Japan
Key Accomplishments thus far

- Finalized and met with Task Force Teams
  - Japan (Leader: Lawrence Wong)
  - India (Leader: Kukjin Chun)
  - Dashboards/Country Metrics: (Leader: Lawrence Wong)

- Drafted priority recommendations for Japan

- Received some initial input from India Task Force team members

- Completed India environmental scan

- Developed first past of Dashboard/Country Metrics
Develop and finalize action plans for 2013

Propose basic contents/framework of Dashboard that will work across countries

Finalize detailed plans for Japan in conjunction with Japan Council/Section leaders
  - Also ensure Japan Professional Staff involvement

Prepare India environmental assessment package

Status

Delays in group being formed, team met in late May
2nd Quarter 2013

- Finalize prioritization of Japan tactics
- Initiate high priority tactics for Japan
- Finalize and Review India Environmental Data
- Face to Face meeting with India Council/Section leaders
- Draft SWOT analysis for India
- Draft dashboard for China and US progress
  - Because tactical plans have been initiated

Status

Draft completed, need to confirm with task force
Moving to Q3
Task force finalized; initial data review completed
May not require face to face meeting, could occur in Q3
Will occur in Q3; Initial SWOT drafted by smaller Task Force Team
In development
3rd Quarter 2013

- 1st checkpoint in implementation of Japan tactics

- Initial Draft of Strategic Priorities and Tactical Recommendations for India
  - Project / Resources Planning

- Finalize and Implement Dashboard
  - China, US, Japan (India will be Q4)
4th Quarter 2013

- 2nd checkpoint in implementation of Japan tactics
- Finalize and Initiate high priority tactics for India
- Dashboards fully implemented
  - Used for November 2013 MGA Board Update
- Document 2013 processes and achievements
Impact to IEEE

- Data driven prioritized plan for Japan
- Data driven understanding of India
  - Prioritized strategies and tactics
  - Engagement of India vols/staff in planning
- Measured progress of key indicators in prioritized countries
Appendix
2013
Strategic Direction & Environmental Assessment Committee

SD&EA Chair:
Wai-Choong (Lawrence) Wong
Singapore

Celia Desmond:
Mississauga, ON, Canada

Past SD&EA Chair:
Okyay Kaynak
Istanbul, Turkey

Dan Coode
Saskatoon, SK, Canada

Slawo Wesolkowski
Paris, France

Past Technical Activities VP:
Fred Mintzer
Yorktown Heights, NY, USA

Kukjin Chun
Seoul, South Korea

Al Reinhart
Boylston, MA, USA

Partners and Support

Cecelia Jankowski
Piscataway NJ USA

Jamie Moesch
Piscataway, NJ, USA

Fanny Su
Singapore

IEEE
Advancing Technology for Humanity
TO: IEEE Member and Geographic Activities Board - 16 February 2013
FROM: Wai-Choong (Lawrence) Wong, Vice Chair - Strategic Management and Analysis
SUBJECT: MGA Strategic Direction and Environment Assessment (SDEA) Committee Report

2013 Priorities:
- Finalize Japan plan details and begin implementation
- Develop an MGA Strategy for India
- Develop dashboard to monitor and measure progress of strategic items for priority countries - China, United States, India, Japan

2013 Milestones:
1st Quarter 2013
- Develop and finalize action plans for 2013
- Propose basic contents/framework of Dashboard that will work across countries
- Finalize detailed plans for Japan in conjunction with Japan Council/Section leaders
  - Also ensure Japan Professional Staff involvement
- Prepare India environmental assessment package

2nd Quarter 2013
- Finalize prioritization of Japan tactics
- Initiate high priority tactics for Japan
- Finalize and Review India Environmental Data
- Face to Face meeting with India Council/Section leaders
- Draft SWOT analysis for India
- Draft dashboard for China and US progress
  - Because tactical plans have been initiated

3rd Quarter 2013:
- 1st checkpoint in implementation of Japan tactics
- Initial Draft of Strategic Priorities and Tactical Recommendations for India
  - Project / Resources Planning
- Finalize and Implement Dashboard
  - China, US, Japan (India will be Q4)

4th Quarter 2013
- 2nd checkpoint in implementation of Japan tactics
- Finalize and Initiate high priority tactics for India
REPORT

M9550- 2 of 2

- Dashboards fully implemented
  - Used for November 2013 MGA Board Update
- Document 2013 processes and achievements

Impact to IEEE

- Data driven prioritized plan for Japan
- Data driven understanding of India
  - Prioritized strategies and tactics
  - Engagement of India volunteers/staff in planning
- Measured progress of key indicators in prioritized countries
2012 SD&EA Committee Update

Okyay Kaynak, Vice Chair, Strategic Management and Analysis

MGA Strategic Direction & Environmental Assessment Committee
30 June 2012
MGA Board Meeting
Boston, MA, USA
2012 Priorities

- Operationalize the Regional Geographical Strategy with a concentration on Japan

- Develop model that can be used in the future by MGA to evaluate countries and develop strategic and tactical plans for member/membership growth
**Significant Updates**

- Committee met face to face on 11-12 May in Tokyo Japan. Committee met with:
  - 13 members of Tokyo Section and Japan Council
  - Some key leaders of IEEJ

- Some key learning:
  - Need to partner with Industry to grow in Japan
  - Likely need to incorporate more Japanese language
  - Target professors to grow student membership
  - Culturally must be invited to volunteer
  - A key value point for IEEE is our global connections

- Major effort for the balance of the year is to validate what we learned in the Japan meeting and create plan for growth in Japan
1st Quarter 2012

- Bring the committee to an understanding of the Regional Geographic Strategy and 2012 responsibilities
  - Barry Shoop to present Geographic Strategies concepts and plans

- Discuss the tactical objectives developed by the previous committee

Status:
- ✓
Distribution and review of existing MCI (external consultants) report on Japan

Review member segmentation data for Japan

Validate data and start focused planning for Japan

Create a list of questions to be asked to obtain subjective data required (e.g. cultural differences)

Determine need for additional data or surveys

Face-to-face meeting – May timeframe
3rd Quarter 2012 Deliverables

Develop sustainable & transportable recommendations:

Member Development:
• for engaging and satisfying members in Japan

Market Development
• for member recruitment in Japan

Volunteer Development
• for volunteer training and development

Partner Development
• for engaging partners (universities, corporations, associations)
• other OU involvement (should they focus on same areas – e.g. Panel of Conference Organizers, Panel of Editors)
Document the process used for Japan that can be adopted for other countries or areas.
TO: IEEE Member and Geographic Activities Board - 19 November 2011

FROM: John R. Reinert, MGA Vice Chair-Strategic Management and Analysis; Chair, Strategic Direction and Environmental Assessment Committee

SUBJECT: MGA Strategic Direction and Environment Assessment (SDEA) Committee Report

Committee Members:

John Reinert, Chair, R5
Rami Al-Mushcab, Past Chair, R8
Cecelia Jankowski, Sec
Roger Pollard, TAB rep, R8
Parviz Famouri, R2
Keith Brown, R7
Dave Green, R3
Pete Eckstein, R1
Tuptim Angkaew, R10
Susan Hutton, Staff

2011 Focus:

1. Support Regional Geographic Strategy initiative
   o Re-Invigorate, Re-Invent geo units,
   o Operationalize the Regional Geographic Strategy

2. Develop a Sustainable Process for Strategic Assessment
   o Get the right information (data)
   o Analyze the macro and micro level data
   o Develop trend data to provide direction/projects to MGA Committees

Committee Activity, June-November:

1. General:
   a. Primary task is Regional Geo Strategy
      i. Take lead, develop example using Japan
      ii. Deliverables:
         1. Report of process used
         2. Recommendations for refinement
         3. Report on findings for Japan as an example
   b. Secondary task: develop sustainable strategic assessment process
      i. Defined initial evaluation
      ii. Review for potential process.

2. Face to Face Meeting (June 11, 2011)
   a. Objective:
      i. Review progress on RGS work, develop plan to operationalize the RGS
      ii. Identify and select an approach to a sustainable process for strategic assessment
b. Regional Geographic Strategy
   i. Produce elements of a local engagement approach identifying opportunities, correlations, trends, measures of success within the framework of the Regional Geographic Strategy (RGS)
   ii. Selected target Geographic Unit: Japan
      1. Understand existing data used to develop RGS
      2. Identify missing data - what else would we like to know
      3. Acquire data
      4. Review and endorse measures of success
      5. Validate data
      6. Extract information from the data
   iii. Share results, recommendations, opportunities with other MGA Committees
   iv. Deliverables
      1. Report of process used
      2. Recommendations for refinement
      3. Report on findings for Japan as an example

c. Sustainable Process for Strategic Assessment
      1. 2008: “if we are successful…”
      2. 2009: MGA Dashboard
      3. 2010: Member Experience Roadmap
   ii. Reviewed/discussed MGA Strategic Directions (Appendix 1), Goals:
      1. Increase member engagement.
      2. Improve relationships with and between members.
      3. Increase operational efficiency and effectiveness.
      4. Enhance collaboration with other business units.
      5. Increase membership.
   iii. Reviewed committee scope within MGA Ops Manual
      1. The committee is responsible for the development and continuous assessment of the strategic direction of MGA (the member and the IEEE Geographic Units).
      2. The committee is responsible for the development of the tactical objectives (12-24 month window) and monitoring the impact to the MGA Direction
   iv. Defined initial steps relative to a sustainable process
      1. Define metrics for MGA goals (above)
      2. Develop matrix of goals vs current projects
      3. Socialize goals with MGA committees
      4. Review for additional action after above steps.

d. Developed timeline for SD&EA activities for rest of year
3. Regional Geographic Strategy Pilot
   a. Plan:
      i. Understand existing data used to develop RGS
      ii. Identify missing data – what else would we like to know?
      iii. Acquire data
      iv. Review and endorse measures of success
      v. Validate data
      vi. Extract information from the data
      vii. Share results, recommendations, and opportunities with other MGA Committees (operationalized by others)
   b. Elements of data gathering:
      i. Recruitment & retention
      ii. Population trends
      iii. Industry trends
      iv. Member Characteristics
      v. Economic indicators
      vi. Current events:
          nuclear disaster, tsunami
      vii. Competitive societies/associations
   c. Pilot Study Status – Japan Market Data
      i. Data Gathering
         1. IEEE Data
         2. Public macro/micro data
         3. Insufficient to provide desired RGS direction
      ii. Contracted MCI
         1. Leading Demographics
         2. Business & industry concentration
         3. University & research Institutions
         4. Concentration of professional engineer
      iii. University Engineering Degree Programs
         1. Size and degree program offerings & rankings
         2. Academic peer review
         3. Citations of faculty members
         4. Companies hiring graduates
      iv. Competitive Analysis
         1. SWOT Analysis
      v. Actions:
         1. Report expected by end of November
         2. Staff Analysis of information
         3. Committee analysis/December Telecon
d. Sustainable Process for Strategic Assessment Status
   i. Map current project list into MGA goals – completed
   ii. Develop potential metrics for MGA goals – in progress.

Appendix 1. MGA Strategic Positioning

<table>
<thead>
<tr>
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<td><strong>Vision</strong></td>
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<td><strong>Strategies</strong></td>
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TO: IEEE Member and Geographic Activities Board - 25 June 2011

FROM: John R. Reinert, MGA Vice Chair, Strategic Management and Assessment; Chair-Strategic Direction & Environmental Assessment Committee

SUBJECT: MGA Strategic Direction and Environment Assessment (SD&EA) Committee Report

Committee Members:

John Reinert, Chair, R5  
Rami Al-Mushcab, Past Chair, R8  
Cecelia Jankowski, Sec  
Roger Pollard, TAB rep, R8  
Parviz Famouri, R2  
Keith Brown, R7  
Dave Green, R3  
Pete Eckstein, R1  
Tuptim Angkaew, R10  
Susan Hutton, Staff

2011 Focus:

1. Support Regional Geographic Strategy initiative  
   o Re-Invigorate, Re-Invent geo units,  
   o Operationalize the Regional Geographic Strategy

2. Develop a Sustainable Process for Strategic Assessment  
   o Get the right information (data)  
   o Analyze the macro and micro level data  
   o Develop trend data to provide direction/projects to MGA Committees

Logistics:

1. Committee Telecons: March, April May  
2. Face to Face Meeting: June 11, 2011, Hoboken, NJ  
3. IEEE Community for communication/records

Committee Activity:

1. Assess utilization of Regional Geographic Strategy (RGS) within MGA Committees and identify support requirements  
   a. Developed questionnaire for committee contact (See Appendix 1)  
   b. Identified sub-teams within the committee to contact/interview committee chairs  
   c. Identified Committees to contact  
      i. MELCC, Mini Thomas, Chair  
      ii. Geo Unit Operations, Babek Behesti, Chair  
      iii. IT Committee, Bob Parro, Chair  
      iv. Conferences Ad Hoc, Okyay Kaynak, Chair
d. Performed initial contact with committees for reporting at Face to Face meeting.

2. Face to Face Meeting
   a. Objective:
      i. Review progress on RGS work, develop plan to operationalize the RGS
      ii. Identify and select an approach to a sustainable process for strategic assessment
   b. Regional Geographic Strategy
      i. Assessed status and feedback from committees
      ii. Decided a more active approach is required: “refocus”
      iii. Produce elements of a local engagement approach identifying opportunities, correlations, trends, measures of success within the framework of the Regional Geographic Strategy (RGS)
      iv. Select target Geographic Unit: Japan
         1. Understand existing data used to develop RGS
         2. Identify missing data - what else would we like to know
         3. Acquire data
         4. Review and endorse measures of success
         5. Validate data
         6. Extract information from the data
   v. Share results, recommendations, opportunities with other MGA Committees
   vi. Deliverables
      1. Report of process used
      2. Recommendations for refinement
      3. Report on findings for Japan as an example
   c. Sustainable Process for Strategic Assessment
         1. 2008: “if we are successful…”
         2. 2009: MGA Dashboard
         3. 2010: Member Experience Roadmap
      ii. Reviewed/discussed MGA Strategic Directions (Appendix 2), Goals:
         1. Increase member engagement.
         2. Improve relationships with and between members.
         3. Increase operational efficiency and effectiveness.
         4. Enhance collaboration with other business units.
         5. Increase membership.
      iii. Reviewed committee scope within MGA Ops Manual
         1. The committee is responsible for the development and continuous assessment of the strategic direction of MGA (the member and the IEEE Geographic Units).
         2. The committee is responsible for the development of the tactical objectives (12-24 month window) and monitoring the impact to the MGA Direction
iv. Defined initial steps relative to a sustainable process
   1. Define metrics for MGA goals (above)
   2. Develop matrix of goals vs current projects
   3. Socialize goals with MGA committees
   4. Review for additional action after above steps.

d. Developed timeline for SD&EA activities for rest of year
   i. Recognize impact of Sections Congress on staff needed to support objectives

3. Summary:
   a. Primary task is Regional Geo Strategy
      i. Take lead, develop example using Japan
      ii. Deliverables:
         1. Report of process used
         2. Recommendations for refinement
         3. Report on findings for Japan as an example
   b. Secondary task: develop sustainable strategic assessment process
      i. Defined initial evaluation
      ii. Review for potential process.
Appendix 1. Questionnaire for Committee Contact on RGS:

1. Is the committee familiar with MGA Strategic Directions and Regional Geo Strategy?

2. Does the committee have a defined set of objectives for the RGS?

3. Are the objectives aligned to the Regional Geo Strategy/MGA Strategic Directions?

4. Does the committee have a process to assess programs and projects with respect to RGS?

5. What data does the committee currently have available?
   a. What data is needed to support RGS. (Micro data)
   b. Trending information needed
Appendix 2. MGA Strategic Positioning

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SD&EA Committee Update

John Reinert, Vice Chair-Strategic Management and Analysis

19 February 2011
MGA Board Meeting
Miami, FL, USA
Agenda

- Strategic Direction and Environmental Assessment Committee Membership, 2011
- 2011 Direction
- Status
SD&EA Committee Membership
2011

- John Reinert, Chair, R5
- Rami Al-Mushcab, Past Chair, R8
- Cecelia Jankowski, Sec
- Roger Pollard, TAB rep, R8
- Parviz Famouri, R1
- Keith Brown, R7
- Dave Green, R3
- Pete Eckstein, R1
- TBD
- TBD, R10
2011 Committee Direction

- Support VP Michel initiative
  - Re-Invigorate, Re-Invent geo units,
  - Implementation of Regional Geographic Strategy

- Develop a Sustainable Process for Strategic Assessment
  - Get the right information (data)
  - Analyze the macro and micro level data
  - Develop trend data to provide direction/projects to MGA Committees
Committee Status

- Committee Selection wrapping up
- 2011 Goal Definition underway
- Identifying background resources to guide committee
- Initial Telecon Scheduled for February 9, rescheduled to week of February 21
  - Telecon Schedule
  - Face-to-Face Meeting