

Notes from the November 2024 Meeting of IEEE Technical Activity Board

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1 Introduction

What this report is about. On November 20–25, 2024, IEEE Technical Activities Board (TAB) had its meeting in Dallas, Texas, USA. As usual, at the same time, several meetings of various IEEE groups and committees were held. And, as usual, the main questions that all these meetings wanted to address was: *What* can we do better? *How* can we do it better?

Many *ideas* were presented at these meetings to help answer these questions. The meeting organizers and people who presented their ideas and their experiences wanted all the meeting participants to share these ideas and practices with their societies.

Which ideas are included in this report. It is not possible to describe all the presented ideas – the meeting materials, when printed, would take several hundred pages. Also, there were many meetings in parallel, so it was not possible to attend all the meetings. Since it is not possible present all the ideas, in this report, I will try to present some of these ideas (of course, this will be a somewhat subjective selection).

How this report is structured. To better understand many proposed ideas, it is important to remind the readers what is IEEE and how it is structured; this is done in Section 2. In Sections 3–5, we present ideas related to the main IEEE activities: conferences (Section 3), publications (Section 4), and educational activities (Section 5).

Many ideas are about how to make IEEE members more active (Section 6), how to increase diversity (Section 7), how to make decisions (Section 8), and how to better inform the members and the general public about our activities (Section 9). Finally, Section 10 emphasizes the need to focus on grand challenges.

We need your help in implementing these – and other – ideas. Many of the presented ideas have already been implemented (or at least are being implemented) by some of the IEEE societies; my apologies for those who are already familiar with these ideas. And some are just raw ideas that still need to be formulated in more detail.

And hopefully you the reader can help us implement at least some of these ideas – and/or come up with new ideas of your own!

2 What is IEEE and how it is structured: a brief reminder

What is IEEE. IEEE is the world’s largest professional engineering society, it has more than 450 thousand members from all over the world. Its main objective: advanced technology for the benefit of humanity. IEEE organizes conferences and meetings, published books and journals, prepares policy and educational materials, prepares standards, etc.

How is IEEE structured. IEEE has what is called a matrix structure.

- First, IEEE is divided into *societies* – corresponding to different research topics. Our Systems, Man, and Cybernetics Society is one of them. Societies have Technical Committees and Working Groups that focus on different subtopics.
- Some topics – such as engineering education, AI, technical aspects of global challenges like climate change, etc. – involve several different societies, so there are also special units taking care of these *interdisciplinary topics*.
- Also, *geographically*, researchers are divided into regions. Regions also have their own organization. Within each region, subregions can form chapters, sections, branches, which can be general IEEE units, or units of a specific society, or multi-society units.
- Finally, there are *units by experience and by affiliation*: units that take care of students, units that take care of young researchers, units that take care of life members, i.e., members with many of experience, units that focus of members from industry, etc. – and in addition to IEEE-wide units, there are also similar units within societies and geographic units.

There are probably other types of units, they all work together for the common goals.

At present, IEEE structure is somewhat skewed. At present, this structure is *skewed* in favor of division into societies. It is important to put more emphasis on interdisciplinary activities, on joint activities aimed at geographical and other diversity, etc. As of now, participation of societies in such activities is sometimes spotty. It is desirable that societies become more active in inter-society aspects of IEEE. There are many examples of good collaboration – AI coalition including several societies is one of them. (However, since each new inter-disciplinary initiative means that some resources originally controlled by the society now have to be coordinated with others, there is still sometimes a resistance to such initiatives, a mindset to protect the society from the “Big Bad IEEE”.)

Coalitions are one way to enhance collaboration, another is to invite other society's representatives to meetings of the society's Governing Board, to give talks at other society's conferences, etc. – this will also help exchange good practices. Such exchange already happens, since many members of each society are also active members of other IEEE societies, so they help spread the word, but closer contacts between societies will help. Some societies even have “ambassadors” into other societies, even sometimes joint officers between several societies.

3 Conferences and meetings

Conferences and meeting is where researchers report their latest results and get immediate feedback from many folks, where people get together, exchange ideas, start new collaborations. How can we make them more efficient?

Better organization. Usually, the conference organizing committee decides on the conference events – often with the help of unit's governing body. But many other folks – especially folks who attended other events – often have good ideas. This way, we can collect ideas from different populations: students and young researchers may propose some ideas, industry participants may propose other ideas. It is a good practice to *solicit* these *ideas from participants and from society members*, and try to get authors of good ideas involved in conference organization.

Some good ideas require *outside sponsorship*. Many conferences have such sponsorship from industry, from the local cities – and it is usually easier to get sponsorship for specific events – e.g., Young Professionals or Women in Engineering event. It is important to *thank the donors* at all events, this will help get their help next time.

Also, it is important to remember that we are engineers, we are not professional event organizers, many of us are not very skilled in organizing conferences. Because of this, many conferences hire a Professional Conference Organization (PCO) to help. Some of the PCO are very helpful, but some experience is far from perfect. IEEE is planning to collect the experience of hiring different PCOs and come with a list of recommendations based on this information, to pre-negotiate prices with preferred PCOs, etc.

Combine a meeting with educational events. One idea – that many societies already pursue – is to combine conferences and meetings with education events:

- to have *tutorials* and schools before the conference, to educate participants in state-of-the art topics,
- to have *public lectures* and workshops before and during the conference, to educate the public of the successes, challenges, and plans,
- to have activities for *local schools*, encouraging students to study engineering and science.

In planning such activities, it is important to keep in mind *folks from industry*, who are usually under-represented at our conferences. For members from academe, conferences are one of the venues to present and publish their results. Some industry folks participate in the conferences for the same reason. However, many people in industry work on proprietary topics, they cannot publish their results in all the details needed for an academic publication. These participants *are* more *interested in learning new techniques*, learning from experience of other folks from industry. To attract these researchers, it is important to have *industry-oriented schools and tutorials*, especially talks by folks from industry.

Making conference more fun. Another idea is to have alternative ways to organize a conference. Several societies have organized conferences on a cruise, so that people can combine learning, networking, and *fun* – and where sometimes participants are encouraged to bring their families so that families can also benefit.

In some meetings, Young Professional committees of the organizing society organizes special entertaining, networking, and educational events for students and young researchers.

How to increase conference participation. Many researchers cannot attend most IEEE conferences – due to limited funding, due to visa problems (which are unfortunately serious for conferences held in US and even in Canada), etc. There are two ways to help:

- One possibility is to also organize *online-only conferences* aimed at researchers who cannot attend the in-person conferences. They may not be as effective as in-person conferences, but they do benefit participants. IEEE recommends every society to have a portfolio of online conferences. An even better would have been to have hybrid conferences, but they are technically difficult to arrange, there are no good experiences yet.
- Another possibility is to supplement the current larger-size conferences with several *smaller conferences at remote places*.

How to increase industry participation. At each conference, it is a good idea to organize *panels and workshops of interest to industry*. It is also a good idea to organize *special industry-focused conferences*. In addition to traditional conferences, where presenters publish papers, IEEE is also organizing additional events aimed more at industry, where no proceedings are published, only abstracts appear on the web, and a large portion of the talks is by industry folks. Such meeting attract participants from industry since they learn about new ideas and developments both in industry and in the academe.

IEEE plans to have such a meeting – called IEEE Technology Summit in Glasgow, Scotland, October 2–3, 2025. This will not be a usual scholarly conference. Instead, there will be talks and panels. Societies are strongly encouraged to participate, to propose talks, to sponsor participants who will then relay, to the society, what was discussed. The main goals of this summit are networking

and exchange of knowledge. The plan is to post slides and talks online for those who cannot attend in person.

Better promoting conference results. Talk, slides, videos – all this helps the audience to better understand the presented material. However usually, what is published in IEEE proceedings of the conference is only the paper itself. It is desirable to also publicize the talks, the slides, the videos – by posting them on the corresponding IEEE website and/or on the website of the conference itself (and to keep information from previous conferences available).

4 Publications

In terms of publications, while IEEE is very successful, there is room for improvement, both from the viewpoint of authors and from the viewpoint of the potential readers.

How to improve the reviewing process. Peer review is how we select the papers that will be published, how we help the authors of promising papers to make their papers better. This process is still not perfect:

Selecting adequate *reviewers* is often not easy – since it is difficult to always accurately gauge the reviewer’s and the author’s research areas. As a result, sometimes, papers get reviewed by reviewers whose areas of expertise are somewhat different from the paper. There exist automatic matching tools, but they usually decide based on keywords, and the resulting match is not perfect. With the current progress in AI, it is natural to look for an AI-based tool that would provide a better match. IEEE and other publishers are trying to come with such tools.

Sometimes, reviewers – often busy people with not enough free time on their hands – do *not* do a very *thorough* reviewing job. To avoid this, some non-IEEE journals publish reviews (anonymized and otherwise edited if needed) together with the accepted papers. The very idea that the review will appear in print makes many reviewers to be more thorough.

There is also still a *bias* – conscious or unconscious – when for the same drawbacks, famous authors and authors from well-known institutions get the benefit of the doubt, while similar omissions in papers by less prestigious authors may lead to a rejection. One way to decrease this bias is to institutionalize double-blind review, when the reviewer does not know the authors’ names and affiliations – but this is not a panacea, since nowadays, many authors post their submitted papers on arXiv, so the authors’ identity can be usually easily detected.

How to increase the number of inter-disciplinary publications. At present, in effect, only societies and councils can publish journals. It is possible to have inter-disciplinary journals published by several societies, but this often requires a somewhat lengthy negotiating process. On the other hand, we have technical communities devoted to inter-disciplinary topics, communities in which societies have already agreed on collaboration specifics. So, IEEE is thinking

of speeding up the process of launching inter-disciplinary journals by allowing technical communities to publish their own journals.

We need to increase the number of publications from industry – by providing examples of past successes. It is well known that many industrial and commercial successes can be traced back to seemingly abstract research results. However, going from a research paper to practical results usually takes time. Many companies focus mainly on short-term objectives, and do not see the value of more longer-term research – and even when this research is done by their employees, they do not help their employees to publish it.

- Many IEEE-published results have helped companies succeed.
- However, many other companies often have a false impression of IEEE as largely a useless ivory-tower-type research endeavor.

We need to break this impression by *publicizing* numerous *past successes* when research helped practice.

A special IEEE History Committee is actively working on this: in 2025, an IEEE History Magazine will be launched, IEEE History Summit will be held on-site, and a special IEEE-wide IEEE History Week is planned for October 6–10, 2025.

This effort needs help from IEEE societies and chapters. We encourage each society not only to collect and highlight information on how their research led to practical and commercial successes, we encourage them to collect oral history in general. History helps attract people, history often contain important lessons that can be useful in the future.

How to deal with proprietary data. A large amount of interesting developments is taking place in industry, where the authors cannot publish their results in their current form, since the data they use is *confidential*. From the viewpoint of society in general, it would be beneficial to have a related publication. This development's experience may be useful to others. Because of this, it is desirable to publish these results without disclosing the confidential data – e.g., by applying similar techniques to simulated data. This is, in principle, possible:

- This is, e.g., an established practice in the US where special agreements with defense-related funding agencies allows students who work on defense-related engineering projects defend their dissertations with examples modified on purpose.
- This is how papers based on medical data are sometimes published – the patient's data is somewhat modified to protect the patients' privacy and at the same time to allow the general conclusions to be made.

Some companies have similar practices and allow publications of the correspondingly modified data, but such practices are still rare. It is desirable to come with general IEEE-wide confidentiality-preserving practices for industry publications.

Roadmaps. In addition to papers describing current successes, IEEE is also publishing *roadmaps* for different technical areas. Each roadmap is a collaborative effort by leading industry and technology folks. A roadmap is not easy to produce, but it is a valuable document of interest to industry – and industry is eager to participate, since such a roadmap affects the future development of the corresponding technical area – and companies want to contribute to this influence. Researchers from the academe are also interesting, both to contribute to this influence and because these roadmaps are peer-reviewed publications, usually very highly cited. To make roadmaps more widely accessible to the general audience, a good idea is to hire technical writers.

A roadmap is one of the possible ideas to focus not on industry successes but rather on industry challenges. Even without starting the ambitious process of creating a roadmap, we can go to industry folks, and them for their longer-term challenges – and publicize these challenges in society’s magazine, newsletter, etc. – so that society members can focus on and hopefully help to solve these challenges.

Publications from industry: challenges related to open access. More and more funding agencies require that authors who get their funding publish *Open Access* – when the author (or his/her institution) pays the publication costs, and everyone can access the resulting paper for free. Many funding agencies from European Union go even further: they require that all sponsored publications only be published in open-access-only journals. As a result of this pressure, many journals switch to open-access-only mode. This works for many authors from the academe who:

- either have grants that sponsor their research – and can therefore pay the publication cost from their grants,
- or whose institutions sign an agreement with publishers where the university pays a bulk sum, so that its faculty can publish for free.

However, this is a serious problem for authors from industry who do not have such grants and such agreements.

One option is to have a special open access publication in which neither the author nor the reader pays – the expenses are covered by the publishing unit. This publication model is known as *Diamond Open Access*. IEEE is planning either to launch such a journal or to switch one of its journals to this format. In many societies, the Society’s magazine plays a similar role: the authors do not pay for publication, and all society members – and sometimes everyone – have free access. It costs money to maintain such a publication, but societies do it since that provides additional advertisement for the society.

How to gauge the quality of industry papers and journals. In IEEE – as in science and engineering in general – we gauge the quality of papers and journals by the number of citations. However, industry journals often do not have citations, so how do we gauge their quality? How do we gauge the impact of these publications?

How to make access to publications easier? Now come challenges for readers. *Search for publications* is sometimes not easy. IEEE Xplore has a large number of publications, with good search tools – but with the current success of AI/ML techniques we need to make these search tools even more efficient. This is especially important for storing and processing data – which many authors publish with their papers.

Search is especially difficult *for* papers on *interdisciplinary topics*. For many such topics, unless there is already an interdisciplinary journal devoted to this topic, most related papers appear in different journals published by different societies. To make related searches easier, IEEE has a special option of organizing a *virtual journal*, that contains links to papers published on this topic in different (actual) journals.

Even when a publication is found, access to this publication is not always easy. This problem is due to the fact that in the past, IEEE only published hardcopies, there was no internet and no publishing software. IEEE is digitizing these *past publications*, but this process is not yet complete. IEEE needs help with this, since in the past, many newsletters and workshop and conference proceedings were published by individual IEEE societies – or even by local chapters. IEEE does not have copies of many of these publications, societies need to help by providing these copies or by digitizing them themselves.

IEEE Xplore publishes not only papers from IEEE conferences and journals, it publishes many papers from other engineering societies – and for old papers from these societies, we face the same problem – that they only exist in hardcopies. To deal with this challenge, IEEE, in collaboration with other engineering societies, launched a special Engineering and Technical History Wiki ETHW www.ethw.org

Many people all over the world would appreciate the possibility to read the articles in their own language. Of course, we cannot manually translate thousands of articles into many languages, but with modern AI successes, *automatic translation of technical articles* has become a real possibility.

Need for additional material. Even when the publication is found and its softcopy is accessible, many potential readers are not satisfied. Namely, many *young readers* do not like to read papers, they *look for videos*. We may like it or we may not, but it is a fact of life. To solve this problem, IEEE encourages authors to provide video and other supplementary materials with their publications.

Designing such a material requires additional efforts, but this effort is not wasted: it increases the effect of the paper, often leads to more citations – which is the main way to gauge the quality of a paper and, by combining the effect of all published papers, the quality of the journal where this paper is published.

5 Educational activities and resources

General activities. Many societies produce educational resources aimed at different audiences. Often:

- educational materials *for school kids and students* and *for general public* are free, while
- educational materials aimed *for professionals* – especially those working in industry – require payments.

Some societies provide materials in different languages, thus helping those who are not yet fully skilled in English.

It may be a good idea to launch, for the general public, a special publication about technologies.

Activities related to entrepreneurship. Of special interest are tools to *help* interested students and young professionals *to become entrepreneurs* – it is of interest since while a significant portion of innovative ideas come from small start-ups, engineering students are often not well prepared for the corresponding non-technical challenges. Many universities offer such classes for interested engineering students, often taught in collaboration with the Business School, but this is often not enough: there is a difference between academic knowledge and the actual practice.

Interested students and young professionals need help. IEEE units can (and some do) organize special training materials, workshops, provide mentorship when successful entrepreneurs teach and consult novices. For example, one important lesson that successful entrepreneurs emphasize is that at some point, when the start-up company starts growing, it is important to hire a non-engineer CEO with MBA degree: engineers can often handle the initial stage of the company's growth, but very few engineering CEOs succeeded on later stages of the company's growth.

6 How to make IEEE members more active

We need more volunteers. IEEE as a whole, its societies and units, do a lot of work – and there are many ideas of how to further enhance our activities. But to implement all these great ideas, we need people volunteering to spend time on them. A lot of volunteer work is done by members of numerous committees and boards, but usually, becoming a member of a committee or a board means a significant time commitment.

How to get more volunteers. Many IEEE members are willing to help, but they do not have enough time to make such a commitment. To involve these people, IEEE recommends its units to institutionalize and practice *microvolunteering*, when people volunteer for – and get appreciated for – a certain amount of work, an amount which is much smaller than the usual commitment.

7 Diversity, equity, and inclusion (DEI)

Diversity-related challenges. People are of different gender and age, they belong to different ethnic groups, they live in different countries, they work in

different places, etc. All this needs to be taken into account. From the IEEE viewpoint, there are four related challenges:

1. Talent known no borders, there are talented male and female engineers in every ethnic group, in every geographic area. However, for historical and cultural reasons, in some regions, in some ethnic groups, proportion of professional engineers is lower than in other places. In many places, the proportion of female engineers is lower. We need to *encourage more people from these under-represented groups to become engineers*. The more talented people take on engineering challenges, the more humanity as a whole will benefit.
2. IEEE is a professional society that helps engineers work together. Joining professional society helps engineers work together. Among many under-represented groups and geographic areas, proportion of engineers who are IEEE members is also lower. Among engineers working in industry, proportion of IEEE members is also lower. We need to *encourage engineers to join IEEE*. For this purpose, we need to better understand what obstacles prevent them from joining, and we need to work on eliminating these obstacles.
3. Among the IEEE members from under-represented groups, the proportion of those are active in IEEE leadership is also smaller. The lack of these members in governing bodies of IEEE units make it more difficult to properly take the interests of these groups into account when making decisions. We need to *increase the diversity of our governing bodies*, be it diversity based on gender, ethnicity, race, age, geography, or professional affiliation. We need to broaden the pipeline that produces new leaders.
4. Finally, we need to make sure that benefits to humanity resulting from our research is fairly distributed among all the groups. For example, 60% of the world population do not have access to Internet – and thus cannot use any internet-related tools. More tools are needed for seniors – by 2030, more than 1 billion people will be older than 60.

Diversity is everyone's business. The ultimate goal of these efforts is to make the world a better place for all the humanity. It is therefore everyone's business, not just the goal of the corresponding committees.

We are engineers, we are often too concentrated on specific technical issues, and, as a result, we sometimes lose focus on the big picture. From the viewpoint of the big picture, the fact that across gender, across geographic areas a lot of potential engineering talent is under-used means that we have a huge potential for growth and improvement. We all need to help with this.

One way to help is to understand that sometimes, unconsciously, we contribute to the obstacles that prevent engineers from under-represented groups succeed – this can be patronizing attitude, poor understanding of cultural differences, etc. All of us need training on this. We need to hear – from the folks

from the under-represented group – what they perceive as obstacles, and work on eliminating these obstacles.

One such issue is language. For example, it is known that using “he” to describe a generic engineer may feel unwelcome to females. This is not the only example of such subtle things. IEEE has recently issued a special standard P3400 on inclusive language.

How to increase geographic diversity of IEEE membership: an idea. IEEE already has a policy of decreased membership fees for people from developing countries, several IEEE societies have similar discounts for their society memberships.

How to increase diversity in governing bodies: general advice. Very few people become successful leaders without mentoring, good leaders are the ones whose leadership qualities were enhanced by leadership training. There are several ways to organize such training:

- we can directly train promising future leaders by having them attend IEEE-level training or by organizing such training directly in the unit;
- we can also train promising trainers – both from under-represented group themselves and from the general membership, so that they will be able to lead training activities in the unit;
- also, many successful leaders mention that their success was largely due to individual mentoring; it is therefore desirable to set up mentoring programs.

As of now, we have general leadership training efforts, but, as is well known, one-size-fits-all solutions are rarely optimal. Different groups will benefit from focused training modules, modules that emphasize appropriate role models and focus more on issues special for this group.

We can have both:

- synchronous training: in-person or online, and
- asynchronous training, when training materials are posted online.

When to organize an in-person training? A good opportunity is the time of the society’s flagship conference, when many society members – and especially many active society members who are potential future leaders – come together. Following this idea, IEEE plans its own general training workshops at the time of the most attractive inter-disciplinary conferences such as the IEEE Conference on AI.

In organizing such training, IEEE relies on experience of societies, on ideas proposed by societies – we all need to help IEEE design such training workshops and modules.

How to increase generational diversity in governing bodies. When organizations elect leaders, they naturally look for people with experience, people who are very active in their unit. As a result:

- younger members are often under-represented in the governing bodies – since they lack such experience, and
- senior members are also sometimes under-represented – since many of who are retired and not as active as they used to be.

Because of this, interests of these groups is often not well represented in many decision-making bodies. What can we do about it?

Some societies explicitly allocate several positions in their governing bodies to young professionals. Other societies' policy is to always consult with the chair of their Young Professional committee when making decisions potentially affecting younger members. For this purpose, some societies form what they call NextCom – Next generation Committee – that is formed by young researchers and that functions in parallel and in collaboration with ExCom – Executive Committee formed by the society's elected leaders.

How can we find future leaders? Future leaders are those who actively voice their opinions: they describe challenges, they ask questions, they propose new ideas. (It is good to have a person who is somewhat confrontational – when a person is not happy with the current state, and is enthusiastic to help improve the situation, this is great. But it is also important to avoid promoting those who are too confrontational to leadership positions – a successful leader need to be able to be diplomatic.)

When a volunteer is found, and he/she is successful in one role, once his term expires it is a good idea to try him/her in a different role: the more a person is familiar with many different aspects of IEEE activities, the more successful he/she will be in each of these activities.

A good idea is to codify DEI. Many societies have enthusiastic volunteers who help with DEI activities, but in such an important issue, it is not enough to rely on enthusiasm of volunteers. It is more efficient if the main principles of DEI should be codified in each unit's documents, e.g., into Bylaws and Constitution. IEEE does not formally require this, there has to be a buy-in by the unit members – otherwise, a formal codification will not help.

Specific practices: examples. Many institutions inside and outside IEEE have had successful efforts in this area. For example:

- Several IEEE societies have *special grants to help people from under-represented groups attend conferences*. Some societies created a *special DEI fund* that can support this and other activities – this enables them to fund many different activities without going through a cumbersome approval process every time.
- In some IEEE societies, during the society's conferences, members of the DEI committee *approach active participants from under-represented groups* and ask them to participate in the society governance as members of different society's committees. This way, the group's interests will be

properly taken into account. These representative also serve as role models for their groups, thus potentially further enhancing the number of this group's members in the society – and their activity in the society.

- IEEE has come up with *a special award to a society that achieves the best diversity* of its membership. The resulting healthy competition enhances societies' DEI efforts.
- In the US, in addition to year-long efforts to promote diversity, there are several months when the focus is on one specific under-represented group. For example, in January the focus is on African-Americans, in March the focus is on women, in October, the focus is on Hispanics, etc. In many places, such concentrated efforts lead to better effects than spreading ourselves too thin overall all such groups during the whole year.

Important comment. First, while the terms Diversity, Equity, and Inclusion (DEI) adequately describe the objectives of this idea, to many people, especially in the US – this term is tainted by many policies that interpret it not as a way to help more under-represented groups achieve fair representation, but as a quota system, when, e.g., a university's program has to accept a certain percentage of female students, even at the expense of lowering the admission standard for some groups.

IEEE understands that the goal is not to mechanically guarantee equal representation – this would require no efforts at all – but to allocate efforts to encourage, nurture, and help people from under-represented groups to succeed. Because of this misuse of the term DEI, several universities are using other names for these efforts, such as People, Culture, and Environment; Fairness, etc.

8 How to run decision-making meetings

Why we need such meetings. Societies, chapters, etc., have to make decisions. Sometimes – e.g., when selecting new members of the society's Board of Governors – the decision is made by all the Society members. However, in most other cases, it is not realistic to have several thousand people vote in all the cases when the decision needs to be made – there are many issues related to funding, to selecting meeting venues and times, etc. In such cases, decision is made by the governing body during its in-person (or online) meeting.

How to make such meetings more productive. For many proposals, there are usually many good arguments both for and against it. For example:

- some folks may propose to establish a new award honoring research in a reasonably new research areas,
- but other folks may be against this proposal – since increasing the number of awards leads to “awards inflation”, when the perceived prestige of each award decreases.

There are usually many issues to discuss, in many of them there are arguments for and against. So, to make the meeting most effective, a good advice is for every potentially controversial issue to *first discuss it in a committee* – and if the topic does not fit any of the existing committees, to form a special ad-hoc committee for discussing this (and related topics). The committee should include respected people representing different sides of the argument, representing different constituencies. If needed, a committee can invite an outside consultant to mediate and to help the committee come up with a compromise decision.

The whole governing board can still change the proposed decision and even vote against it – but at least all the main discussions have already been done at the committee level. So this will save time and thus, make the meeting of the governing body more productive.

Need to save meeting time by avoiding duplication. Usually, the idea is that presenters at such meeting prepare their slides beforehand. However, in practice, slides are often posted at the last minute. It is desirable to post the first version of the slides at least a week before the meeting, so that presenters can look at each other's slides – and especially at the unit leader's slides – and avoid duplication.

It is desirable to make the meetings as open as possible. Members of the unit deserve the right to know how decisions are made, and, if physically possible, to express their opinion on the decisions that may affect them. It is therefore desirable to make *meetings* of the governing boards and of the committees as *open* as possible, by announcing the meetings to the unit members and by explicitly encouraging unit members to attend. For example, IEEE encourages everyone to attend the meetings of IEEE Directors and the meetings of IEEE Societies Presidents – and at the meetings of the Presidents, any attendee can participate in the discussions.

Inviting members to the meeting of the governing board or the corresponding committee also helps find future leaders, people who are actively interested in the discussed topics, who have interesting ideas, who are willing to contribute to the work of the unit.

Of course, some issues involve some confidential information – e.g., when the body needs to select one of several candidates for an award or for a position. In this case, according to Robert's Rules – that govern all IEEE business – the committee can announce an *executive* session, meaning that only members of this body can be present.

Since the meetings are open, and some issues are related to social issues – such as technical aspects of climate change or diversity – some meetings attract media attention. Media representatives are not always skilled in technical issues, they may (and sometimes do) misunderstand the stands, and create the false impressions. To avoid such situations, IEEE recommends a special procedure that is legal but not explicitly mentioned in Robert's rules – what IEEE calls *light executive sessions*. At such sessions, member of the unit can attend, but outside folks are excluded. Before the beginning of each such session, attendees are reminded that by selecting to attend they promise not to disclose the

discussion to people outside the unit.

It is important to have tolerance for failure. When making decisions, it is important to take into account that some ideas do not initially succeed, and try to give these ideas a chance. For example, it is well known that reasonably recently, neural networks – which is now the main tool in spectacular AI successes – were considered a not-very-promising research direction. A renowned researcher even said, at that time, that neural networks is a research topic typical for very weak universities :-(

It is important to have well-prepared minutes of the meeting. IEEE units usually have minutes of each meeting. Minutes list what proposals were made, what was discussed, what decision were made, etc. Coming up with useful minutes is an art. Many minutes are not perfect, they are either too short or too long:

- When the minutes are too short, they often list the decisions, but do not provide enough details about the reasons for these decisions, about the arguments in favor and against these decisions that were discussed at the meeting. As a result, when the leadership's terms expire and the new leadership takes over, they are often puzzled by the previous decisions, and start the same discussion again – thus wasting time that could be better used by moving ahead.
- On the other hand, when the minutes are too long, the interested future readers will drown in too many details, while all they want is a gist of the issue. Units that have longer minutes sometimes argue that many interesting related ideas appear during the discussions, and having these ideas recorded in the minutes helps to preserve these ideas. This is somewhat true, but in long minutes, these ideas drown and cannot be easily found. It would be much more efficient not to include these ideas in the minutes, but rather to supplement the minutes with a separate document in which these ideas are clearly listed in all necessary detail.

It is also important to check with all the participants whether the minutes correctly reflect what was said at the meeting. Even if you capture the words verbatim, it does not necessarily mean that the meaning was captured correctly, since the same phrase can mean different things in different contexts. The goal of the minutes is not necessarily to capture the exact words, but rather to convey the meaning as closely as possible.

It is important to communicate the body's decisions to the unit. It is important to convey the *decisions* of the governing body to the folks who form the corresponding unit – via a newsletter, via a targeted email, etc. It is also important to convey the *motivations* behind each decision. This will help people better understand why this decision was made – and it will also help future leaders of the unit to make decisions in similar situations.

9 How to better inform the general public about our activities

Many IEEE members help to solve practical problems, often in collaboration with researchers from medicine, business, social sciences. There are many success stories. We need to showcase them to the world. We are engineers, many of us are not very skilled in public communication, so we need to get help from folks who have such expertise – professional communicators, influencers who know how to promote idea of social networks, etc. IEEE can help, but we also need members to come up with more success stories. It is especially important to promote what we do in terms of social issues and global challenges.

This will help to better educate general public about what we do, this will also encourage more school kids to select science and engineering – and the world clearly needs more engineering talent.

More examples of industrial applications of technology will encourage companies to contact us about their technology-related challenges – or at least challenges that can be potentially resolved by using technology, so that we will be able to help them, and this will lead to even more successes.

10 Need to focus on grand challenges

We need to focus more on the big picture, on society challenges – after all, the goal of IEEE is the benefit of humanity. At present, a significant part of our research and development is motivated by what technology is available – e.g., now a lot of publications use AI and machine learning – but we also need to think more of what society as a whole needs, and help find gaps in current technology, gaps whose filling can help us benefit the humanity even more.

Because of this focus, we need to have more collaboration between societies and units: many grand challenges requires many societies to deal with different aspects of the corresponding problems. For this, we need to have IEEE-wide infrastructure that would enhance collaboration easier. IEEE calls this a concept of *One IEEE*.

Conclusion

These are some of the ideas presented as the November 2024 IEEE TAB meeting. As we have mentioned, many of the presented ideas have already been implemented (or at least are being implemented) by different IEEE societies, and some are raw ideas that still need to be formulated in more detail.

Help us implement at least some of these ideas – and come up with new ideas of your own!