

Panel Chair (Ali) summarizes the key issues and requests Arthur for some inputs on future directions before opening discussions to the floor.

Marketing of EC techniques

Arthur believes that the main issue lies in the marketing of EC techniques. He explained that there are two marketing directions, internal and external. Internal marketing refers to the explanation of EC capabilities, competitive advantages over other techniques as well as convincing other research fields to open their doors. He suggested the writing of a book written in plain English comprehensible for business communities. External marketing refers to the defining of the needs and competition. He cited the example of GP workshop as a good example where there is interaction between the industry and academia.

On the other hand, the audience believes that the main issue is the development of convincing case histories of successful collaborations instead of any books as suggested by Arthur. One (University of York) also pointed out that the norm where real-world problems are considered as future work in many conference papers is not encouraging any industrial participation. One gentleman from Siemens highlighted that people from the managerial level is only interested in getting the job done and there is, of course, a need to speak the same language. And there is a definite need to spell out clearly the advantages of EC techniques over classical approaches since there are many conservatives within the business community.

Framework is not enough

One member of the audience highlighted that the industries will not look for collaborations with the EC community simply because of the framework! He explained that each company has different needs and it is up to the academia to earn the trust to rope in the big projects. He pointed out that the relationship between the industry and academia must be developed slowly; start with successful collaboration of small projects before bigger ones will come.

Issues in getting industrial attention

Panelist Andy (Parmee or Garry?) admitted that there is a distinct lack of industrial applications in PhD projects and reflects that this is a top-down situation where they need to actively source out for industrial interest in EC techniques. Arthur added that there is a communication problem between the industry and the academia. There is a need for other forms of interactions and paper publications are definitely not enough. Specifically, there is a need to market the industrial needs.

Paul draws the chicken and egg analogy for the relationship between industry and academia. The industries want to see evidence of successful EC application but no one really wants to risk the application of a new technology.

Andy suggests that conferences may not be the ideal place for communications with the industry and one-to-one interaction is definitely a must. Ali took the opportunity to

reiterate the rationale for the two prong approach for business and academic aspects. Gentleman from University of York reaffirms that it is very hard to get industrial participation from experience. Further, it will take a lot of effort, i.e. many one-to-one meetings.

Coello Coello highlighted problems in getting industrial project because of the country (Mexico) that his institute is based in. Further, there is a misconception that EC techniques are universal optimizers and there is a lost of faith in EC techniques when there found it to be contrary.

Andy reinforces the issue of misconception due to the availability of GA source codes from the internet. Companies would spend a couple of weeks evaluating these codes and will dismiss EC, in general, if the codes are found to be unsuccessful in that particular application.

Education and industrial Participation

Gentleman from University of York added that it can be frustrating on the part of the industries in collaboration with universities. This is because PhD students typically spend up to a year on literature review and industries don't like waiting.

Andy pointed out that students should not be part of any industrial projects in the first place. That is the rationale of keeping academic and industrial work separate in his case.

Coello Coello pointed out that the attitude of the students in Mexico is such that there are more interested in getting papers published rather than participating in any industrial projects.

Suggestions to get industrial attention

Ali posed the questions of getting industrial attention to the audience.

Gentleman (Mark) from University of York suggested the placing of a session in business oriented conferences where he had no problems getting tie-ups from these occasions. He also suggested that having some publications in business oriented journals such as the Wall Street will help create awareness about EC techniques. He also advised Coello Coello that it will be more beneficial to go for long term collaborations rather than the short ones.

Paul explains that the model can help initiate the first steps between industrial and academia interactions as it specifies clearly their roles and how they can interact.

Gentleman from Siemens believes that the first step would be to boost the reputation of EC by collecting successful cases studies. Arthur agrees with that observation and claims that it is imperative to clear the "bad" reputation and define the competitive advantages of EC techniques in simple and plain English. He also states the need to improvise based on the market competitive to get industrial collaboration.

Andy suggested that it is possible to conduct one-day training workshops but it is going to be difficult to get participants. He also reflected that it was easier to market new technologies in the past. Ideas such as Special Session on real-world applications as well as training workshops at industrial conferences were voiced. Once again, Mark highlights the benefits of having publications in non-technical journals to raise awareness.

Getting new members into the workgroup

Ali asked whether Mark and the gentleman from Siemens are interested in having a more active role with this workgroup. Siemens can contribute by offering scholarships and internships so that the EC community can build up on the repertoire of successful case studies. Mark indicated that he is willing to take up the role.

Paul wanted to know about the means of communication between members of this workgroup. Ali states that there will be a core group of members who will communicate on a frequent basis.