# *Mini-Workshop Proposal – Setting a SE Research Center in India: Goals, Models, Approaches, Feasibility*

Feb 25, Afternoon, Mysore, during ISEC 2010

## Background

India is perhaps the only main software producing country which does not have a focused software engineering research center – US, Australia, UK, Germany all have well established and well funded research centers in Software Engineering. So far lack of national research capability has not hurt the industry much due to the nature of the work, but going forward, clearly if the industry is to achieve its goals of moving into higher value services, strong R&D capability within the country is essential. Some capability is being build by different companies individually, but these are not a replacement for a national center for software engineering. For example, only a national center in an academic institution can address issues such as high end education programs, developing standards and frameworks, collaborating with other national and multi-national bodies, etc. As such a center should interact heavily with industry, it should only be set up in one of the major IT destination of India.

This workshop will discuss all issues relating to the possibility of setting a national center on software engineering in IIIT Delhi.

## Possible Goals of the Center

Though the final agenda and goals of the center will be decided in consultation with various stake holders, some of the goals of this center could be to

- Engage in research in various aspects of software engineering, particularly those that are of importance to the Indian software industry
- Develop research manpower for the industry through PhD program and a MTech program in software engineering (perhaps a special MTech/MS program for working professionals)
- Develop frameworks and models, particularly in areas where there is a need

Initially, the center will not focus on undergraduate level education, or for lower end training programs in different aspects of software engineering, for which there are already a host of private players servicing the need.

## Center Organization – A Possible Model

Such a center in India can be considered successful in the long term only if it helps industry in its long term growth and potential, particularly in areas where industry will find it harder to sustain on its own. Due to this, one key guiding principle of this center is that it must have strong linkages with industry to identify problem areas, as well as for doing research. Similarly, due to the global nature of software and software industry, it is

important for the center to have international participation and linkages also. To start the discussion, the following is proposed:

- The center be headed by a Director, who will be a faculty member at IIIT Delhi.
- The center should have some key partner or sponsor at the national level – either DIT or Nasscom or some other such body.
- The center will have an advisory board which comprises representatives/senior researchers from companies in India. It may have some international researchers. This board will help set the agenda and directions, as well as evaluate the performance of the center.
- There would be some faculty from IIIT Delhi in the center. In addition, it will also have **people from partner companies on deputation** in the center to work for no less than a year or two. There would also be **researchers recruited directly by the center** - these will be on contracts of a few years and will be paid through projects/grants received by the center. Finally, there will be **students** who are doing their thesis - they are key members of this center. (To motivate people from companies to come on deputation, they may be allowed to enroll in MS (or MTech) or PhD program. And during their stay, the R&D they do can contribute towards their degree. Further, to make it useful for companies, these people can work on projects and problems that are of interest to the companies.)
- The center may also have focused labs. A lab may focus on specialized area like testing, performance modeling and tuning, architecture, program checking and testing, etc. The labs may be in collaboration with corporations. And some corporations can set their own lab also - in that case they will have to provide the main manpower and full funds for the research manpower and students.

## Workshop Agenda

The aim of this mini-workshop is to come up with suggestions on how to make this center a reality. The workshop will be organized in discussion format (no paper presentations), though an opening presentation will be made to get the discussion going. Some of the issues that can be discussed are:

- What should be the charter/objective of such a center
- What can be the financial model for the center, so it is self-supporting
- Such a center must collaborate well with the industry. What are possible models for collaboration (some are mentioned above)
- Organization of the center

## Organizers

To develop this concept further, a small group has been formed comprising of: Pankaj Jalote, IIIT-Delhi; Sriram Rajamani, MSRI; Gautam Shroff, TCS; Subu Goparaju and P. Srinivas, Infosys; Santonu Sarkar, Accenture; TV Prabhakar, IIT Kanpur; Saugata Ghoshal, IBM IRL; Sanjeev Agarwal, IIT Kanpur; Umesh Bellur, IITB.

For attending the workshop, or for any clarifications or suggestions, please send an email to jalote@iiitd.ac.in, with the subject "SE Center Workshop"