Report on the Conference: **How does Silicon Valley Evaluate Foreign Education and Experience?** held on Friday, March 13, 2009, organized by the Shorenstein Asia-Pacific Research Center (S-APARC), Stanford University. The conference was supported by the Sloan Foundation, ETLA Finland and the University of Colorado, Denver.

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Objectives:

IT firms in Silicon Valley access talent globally, recruiting from colleges abroad and recruiting firms, and personnel transfers from overseas affiliates. Another strategy is to open offshore operations – although this restricts access to a few locations, in countries with large labor pools this may spur innovation, while providing access to domestic markets.

The conference, the fourth in S-APARC's annual Globalization of Services series, explored SV IT firms' assessment of foreign education and experience, the career paths of foreign engineers, and the impact on firms' capacity for scale and innovation. The intent was to understand whether selecting from a global labor force enables US employers to select just the "best" worker or is motivated by other considerations. The conference was attended by, including panelists. Link: http://aparc.stanford.edu/events/how_does_silicon_valley_evaluate_foreign_education_and_experience/

Report on presentations:

The conference was inaugurated by Professor Philip Martin of University of California, Davis, and Dr. Michael Teitelbaum, Sloan Foundation, who laid out the broad themes of the West Coast Initiative of the Science and Engineering Workforce Project, of the National Bureau of Economic Research.

The conference's base paper, by Martin Carnoy and Rafiq Dossani of Stanford University, presented the preliminary results of an ongoing study of graduating engineers in India and China, with a focus on a recently completed survey of Indian students; comparisons with developed country universities were also presented. Among the findings: students at the average Indian university are taught the same syllabus in computer science as at the best Indian and global universities. However, teaching methods differ, with a considerably greater emphasis on lectures and supervised work compared with developed nation universities. For example, the average Indian student

spends one hour outside class working on coursework for every three hours spent in the classroom or closed laboratory. By comparison, the average Stanford student spends three hours in unsupervised work for every hour of supervised work. Large differences were found for the proportion of work done in small groups, and humanities and science courses (including courses on entrepreneurship and foreign languages). These might have implications on quality in the workplace, such as the ability to work in teams or on innovativeness. These issues are under exploration in the present study.

Bill Pearson of Intel presented 3 case studies to illustrate the issues surrounding the use of overseas engineers. In the first case study, Intel needed to change its then-current strategy of using temporary workers on lower-end long-term projects. The reason is that it was a costly strategy due to rapid attrition. Intel decided to use its India subsidiary as a place to do this work. A team of 35 persons was built up over 18 months, recruited from 25 different companies. While the engineering skills were adequate, there were challenges with team building. These includes employees expectations on status, eg., whether she would be titled as a manager or not, regardless of work content; communications styles, eg., the Indian employees rarely disagreed with US-based colleagues, regardless of whether they actually disagreed or not. Learning from this, Intel looked at recruiting engineers with communications skills for a second project in India and having them work within smaller teams of 6 persons. This approach was significantly more successful. A third initiative was to outsource work to a vendor, with deliberate strategies including being willing to look at different geographies. Learning from the first two cases, Intel insisted that recruits to its project be both skilled and be willing to take the initiative. In summary, Pearson summarized the learnings as follows: good technical skills are available in many locations around the world so that, at this time, education is a 'check-box' item. The most successful engineers are those: (1) with deep technical knowledge rather than language or technology specific skills, (2) who take ownership for their work, (3) who are flexible, work well in teams and have strong communication skills. In this context, American experience or experience of working with American teams is a plus.

Otto Schmid of NVidia provided experiences of running a startup in an earlier part of his professional career. He noted the lack of experienced technical talent of recruits from India vis-à-vis China and other Asian countries. Although technical education was similar across countries, the difference was that Indian engineers quickly moved into managerial positions. This appeared to prevent the building up of deep technical expertise and a sense of direction. By contrast, Chinese engineers seemed more culturally attuned to working in startups, being mature and less hierarchical. Schmid attributed this to a greater influence of the family and hierarchical influences on the Indian engineer vis-à-vis the Chinese engineer. He concluded that while, in consequence, Indians at the starting level are not suitable for SV startups, once they have a few years of experience, they are suitably qualified when compared with other engineers. Unfortunately, by that time, they would have moved up a managerial hierarchy and would be dissatisfied with being the outpost of an SV firm with limited infrastructure. Schmid noted that when his startup was bought by NVidia, 70% of the 30-strong China staff ultimately left to join startups as they did not like the more

hierarchical nature of the new set up. Summarizing the difference between engineers recruited in the U.S. versus engineers recruited in Asia, Schmid noted that in Asia, hiring the right manager, the right technical talent and the right competence for a particular project were critical; whereas, in the US, it was more important to provide an environment that was creative and challenging, with room for professional growth.

E.Subramanian of TCS described TCS's global recruitment process. Driven by its scale, TCS relies on an HR sourcing group that aggregates the requirements of HR from business units via an allocation group. The HR sourcing group uses a range of approaches to fulfill its HR needs, with a focus on campus hiring. Campuses are reviewed in detail and accredited for this purpose, after which a long-term program of engagement with accredited colleges/universities at various levels (faculty projects, student internships, laboratory development, etc.) commences. Upon hiring, recruits undertake a 6-9 month training process to acquire complementary on-the-job skills, such as the tools that the firm works with, the organization structure, communication with clients, etc.

Raja Raj of Wipro presented an analysis of Wipro's global recruitment strategy. Communication skills, the importance of domestic markets and technical competence underlay all recruitment strategies. Examples were provided to illustrate differences across several countries. Analyses were also presented to show the differences in global talent pools across verticals and in depth. Internships were used to identify potential long-term employees. For this, the firm had active support programs with several universities and colleges both in India and overseas. All recruits were subject to intense in-house training to acquire complementary skills (similar to TCS above).

Ivan Ernest of Google focused on the "Google way" of recruiting. Engineers are always recruited at the same level initially and designated as Members of Technical Staff. Prior to recruitment, a detailed dossier is reviewed by Chairperson Larry Page. Periodically, engineers go through a peer review to determine where they should be located in terms of work and status. This is then reviewed by a team of senior persons (who do not know the employee). An employee can at any time petition for a review of his HR status and seek a promotion.

Robert Lee of Achievo described Achievo's unusual multi-locational system, arguing that having several developer locations was an advantage because of proximity to clients, as well as for recruitment. The key was to achieve critical mass in a single location, which was usually once staff strength crossed 300 persons. The firm sent its best Asian engineers to the US for further training, largely on-the-job. At client locations, such as in the Bay Area, the focus was on the best, bilingual local talent available, rather than staffing through H1B deputies. At its China operations, an active internship program in partnership with the leading Chinese universities was in place.

Praveen Singh of Arada argued that India could now do core development work, something not possible earlier. He attributed this to better education and the presence of a larger number of similar firms in Bangalore. However, embedded wireless work, the

high end concept and design still needed to be done in SV due to the lack of adequate expertise in India. He also argued that the high end educational institutes in India were not usually the best ones to recruit from. Their graduates wanted hierarchy and a short time frame to rise-up the organizational chain, without offering greatly superior technical skills. So, Arada had, after initially focusing on IITs, moved recruitment to the next tiers, such as the NITs and smaller colleges.

Ashish Dixit of Tensilica argued, in contrast to Praveen Singh, that a product of a good school in India combined with some US experience was the ideal combination for their Pune office of 25. As he noted, "There is something about education from an excellent school in India that sets people apart. These schools tend to follow the US education model. US work experience brings about a positive change in a person's willingness and ability to proactively engage. Engineers with a combination of the above are world-class!" However, he noted that the Indian office tended to view themselves as service providers to the US team, rather than a part of the team. In other words, perhaps as a consequence of the US team's greater experience and skills, there was a lack of unity with the US team. This needed to be managed and is a problem that is lessening with time as more and more 'break-out' individuals in the Pune operation are developed. They are often much better off with subsequent SV experience that Tensilica can offer them.

Anuradha Parthasarathy of Global Executive Talent argued that an emerging trend is for the globally-distributed location of engineering talent. This reflects fast-rising overseas engineers' quality. Undoubtedly, problems exist due to local cultures and systems: hierarchical styles, expectations of rising up the organization, etc., but this raised the question as to whether these could be worked around or could be leveraged through alternative management models. She raised the issue of location: does it make sense to use the overseas engineer in SV or is it better to do the work in the cheaper location overseas, given the difficulties of coordination and organizational 'defects' such as the acknowledged problems of hierarchy.

Yatin Trivedi of Synopsys argued, similarly, that the quality of overseas engineers overseas is rising fast and is of adequate quality to do global-class work. Like Anuradha Parthasarathy, he raised the issue of location: does it make sense to use the overseas engineer in SV or is it better to do the work in the cheaper location overseas, given the difficulties of coordination and organizational 'defects' such as the acknowledged problems of hierarchy. His view was that cost considerations would trump others and that, already, new management models were emerging that made such work efficient. He noted that already, in Synopsys, global teams where over half the engineers were not local to the team manager, were the norm. This put a significant burden on the manager, with regard to distributing the work, facilitating communication, motivating the team and ensuring adequate face-time. He stressed that differences between SV and other locations remain. SV offers the most experienced, skilled labor pool; strength in the more complex technologies such as analog technologies, system-design strengths, embedded-software strengths and relatively easy transitions of engineers to different roles, including from team member to leader and vice-versa. In addition, SV offered

research expertise that was critical in his field, including through interaction with universities.

Agenda

How does Silicon Valley Evaluate Foreign Education and Experience?
Friday, March 13, 2009
Shorenstein Asia-Pacific Research Center, Stanford University
Supported by the Sloan Foundation

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http://aparc.stanford.edu/events/how_does_silicon_valley_evaluate_foreign_education_and_experience/

8:00 Breakfast
9:00 Welcome and introductions

Philip Martin, UCDavis, Michael Teitelbaum, Sloan Foundation

9:15-10:30 Why hire engineers from overseas: findings from a quality study on Indian and Chinese engineers

Martin Carnoy, Rafiq Dossani and Prashant Loyalka, Stanford University

Discussant: TBD

1045-12:30 The experience of large IT firms

Roberto Soleto, Cisco, Bill Pearson, Intel, Otto Schmid, NVidia,Raja Raj, Wipro

Discussant: Petri Rouvinen, ETLA, Finland

1:00-2:30 Lunch at Google, Mountain View, hosted by Raj Shah and Ivan Ernest

Presentation, panel discussion and campus tour

3:00-4:15 The experience of startups and small IT firms

Robert Lee, Achievo, Praveen Singh, Arada, Ashish Dixit, Tensilica

Discussant: Martin Kenney, University of California, Davis

4:30-5:30 Recruiting engineers from Asia

Anu Parthasarathy, Global Executive Talent, Badri Gopalan, Synopsys, Yatin Trivedi, Synopsys

Discussant: Manuel Serapio, Colorado University

Feedback

1. My sincere thanks to you for inviting me to speak at the conference yesterday. Even though general information were known to me and there were many commonalities in their messages, one take away for me was that depending on the type of industry yo uare in and the size of the company/clients you are trying to serve, your recruiting, nurturing and retention problems are quite unique - Google being the prime example of uniqueness.

2. Thanks for hosting a very interesting and lively conference yesterday. One of my research projects is on global start-ups, in which I have found many of issues relating to hiring and retention that were mentioned by yesterday's speakers.

3. Thank you for inviting me to the 4th annual Globalization of Services conference at Stanford University. The conference was well organized and I had fruitful discussions with the participants.

4. Many thanks for inviting us to the conference. It was very informative. We had quite some good discussions there. I really enjoyed the conference as well.

5. Was my pleasure to be a part of the event. As always, I learned alot and it always is an experience to attend one of your events.

6. It was a pleasure talking with everyone at the event Friday. Thank you for the invitation.

7. Thanks VERY much. I really appreciated the atmosphere--on the one hand, very professional and thankfully nonpolemic, and on the other hand very informal. I was quite pleased to hear Yatin Trivedi remark, "Well, since we're among friends, I would answer this way..."

8. Thank you very much for Friday's conference. The participants' knowledge and experience provided breadth and depth to a topic that is generally not well understood yet has such great import to the Silicon Valley.

9. Always a pleasure to participate in your conferences and meet different kinds of people from the academic and corporate world. This time was it was even better with the intimate setting - round seating and all. Ofcourse the Google lunch was a great intermission. Also I felt almost all the presentations were of very high quality and honest.

10. Thank you for an excellent conference!