



Engagement of Virtusa ISQ practice in Sri Lanka’s higher education system for improving quality assurance and testing education in the country

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1. Overview

As the first company in Sri Lanka to start an independent software testing group, Virtusa faced many resourcing challenges. There were no trained software testers and few opportunities for lateral hires. Despite the number of IT and programming programs available from public and private sector higher education institutes, none offered courses in structured quality assurance and testing. The few software companies that performed testing relied on developer testing, or testers with business knowledge and analytical skill but no experience with industrial testing methodologies.

Pushed by the demands of a rapidly growing organization, the ISQ practice in Virtusa's Colombo ATC had to pioneer a solution. It began with the development of a rigorous in-house training program. Next, they partnered with several premier higher education institutes to improve quality assurance and testing education in Sri Lanka through the 'Campus Reach' program, a CSR program which contributes to improving the education system in Sri Lanka. This has been beneficial not only to Virtusa, but also to Sri Lanka's software industry as a whole.

2. Problems faced by the Virtusa Colombo ATC

The shortage of trained quality assurance resources posed a significant challenge to working in Sri Lanka's software service industry. Not having the right resources at the right time leads to lost billable opportunities, lost projects, damaged client relationships, resource burnout, and increased hiring costs. Without structured industry standard education programs in quality assurance and testing, Virtusa faced many issues in building and growing the ISQ practice in Sri Lanka.

- **Investing in in-house training resources for Quality Assurance (QA) engineers.** Using industry-standard vocabulary, proven test design and testing methodologies, and a knowledge of standard process frameworks is crucial to sustained growth in the software service industry. To achieve this, Virtusa had to invest the time of trainers, the cost of providing lab facilities, and salaries for employees in training.
- **Long turnaround times for resource requests.** The training program at the Virtusa Colombo ATC takes 3 months to complete. This includes 6 weeks of classroom training with hands on lab sessions, and 6 weeks in a 'rigor project', a guided real world training project that is part of Virtusa's CSR program.

Because of the nature of the industry, resource requests rarely have 3 months lead time. This makes it difficult to fulfill resource needs on time. One solution is to train enough resources to maintain a larger bench, but that leads to unsustainable salary overhead that impacts the company's bottom line.

- **Attrition of trained resources.** There was a high demand for trained quality assurance resources in other organizations, who didn't have or weren't willing to invest in the resources to develop their own in-house training programs. This led to attrition and salary management issues as these organizations lured away Virtusa's trained employees.
- **Lack of standard QA knowledge in the overall resource pool.** Due to the lack of standard quality assurance knowledge among the development, business analyst and project management groups, testing resources had to educate their fellow team members to effectively establish consistent, high quality output and improve the overall quality of software.

3. Solution: Collaboration with higher education institutes

Virtusa leadership in the Colombo ATC came up with the idea to collaborate with higher education institutes to provide quality assurance and testing education to Sri Lankans. This solution involves two programs:

- 1) **Start a quality assurance and testing certificate course that covers standard theoretical knowledge, collaborating with SLIIT (Sri Lanka Institute of Information Technology), a semi-governmental higher education institute.**

Objectives:

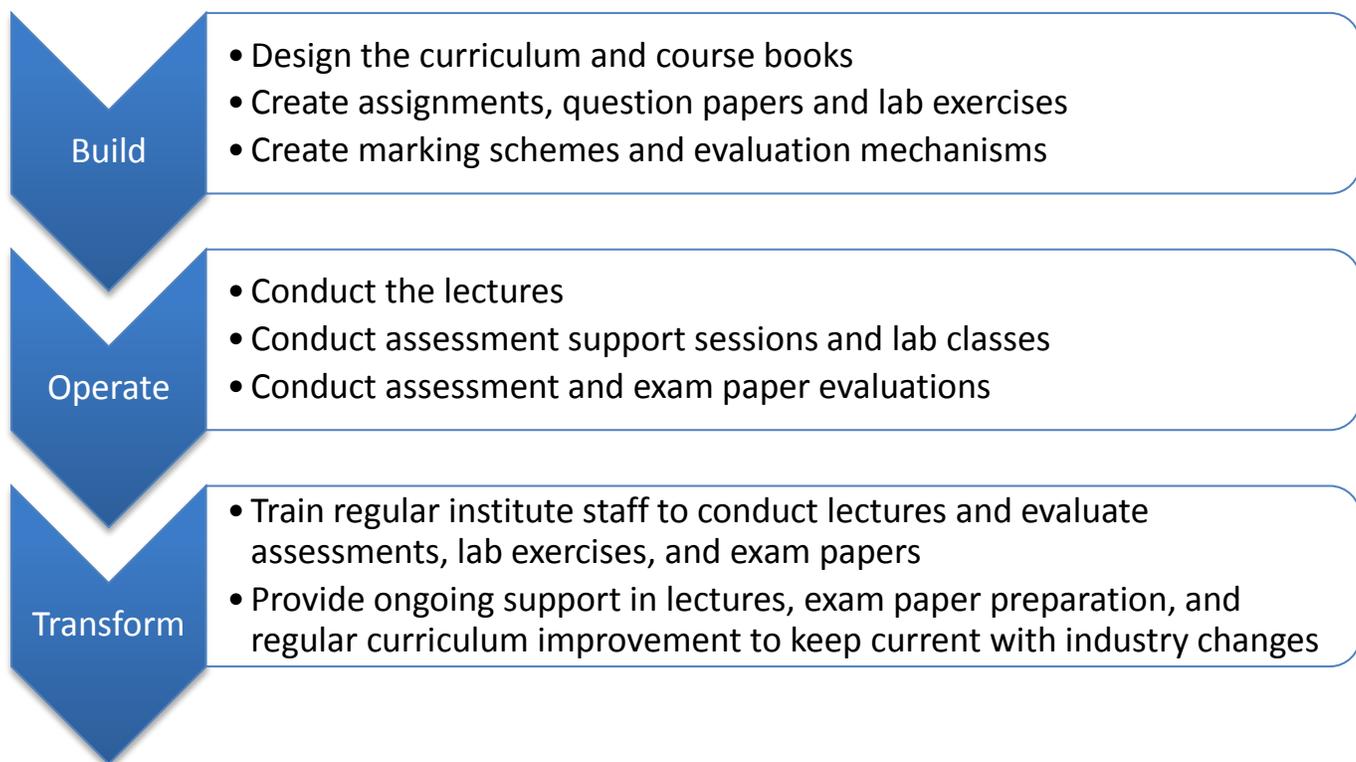
- Create a ready to hire testing resource pool with standard knowledge, cutting down the cost of training and the time to bill a new resource
- Reduce competition for trained testing resources from other companies

- 2) **Introduce quality assurance and testing as a subject to the curriculum of private higher education institutes**

Objectives:

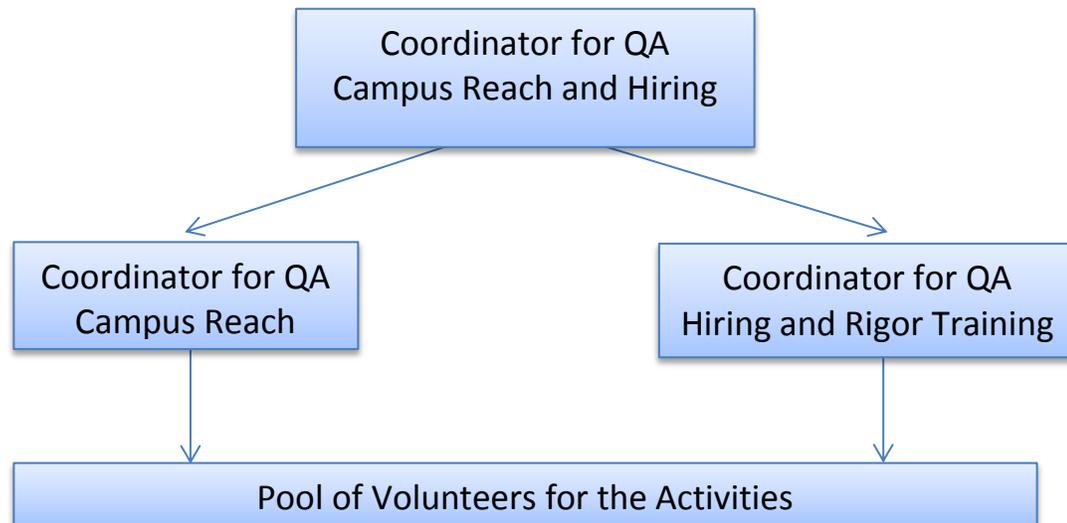
- Create a ready to hire testing resource pool with standard knowledge, cutting down the cost of training and the time to bill a new resource
- Drive standard QA practices in the country's software industry

Each of these programs is structured to operate in three stages:



4. Program operation

The Virtusa ATC in Colombo has an established CSR program called 'Campus Reach' which collaborates with higher education institutes. The ISQ practice has introduced a branch called 'QA Campus Reach', run by the practice in conjunction with the corporate Campus Reach program. They have assigned a coordinator from the practice to oversee the QA Campus Reach program and QA hiring. A group of volunteers comprised of Senior QA engineers and other high level staff from the ATC QA pool was set up to support these activities.



The group started the QA curriculum programs with 5 institutes:

- University of Colombo School of Computing – Bachelor's and Master's degree programs
- Open University of Sri Lanka – Bachelor's degree
- National Institute of Business Management – Bachelor's degree and diploma level in Colombo and Kurunegala Institutes
- Sri Lanka Institute of Information Technology – Bachelor's degree
- Asia Pacific Institute of Information Technology – Bachelor's degree

The curriculum was prepared using industry standards as preferred by each institute.

5. Lasting benefits

The Virtusa Colombo ATC has benefited from these programs in many ways:

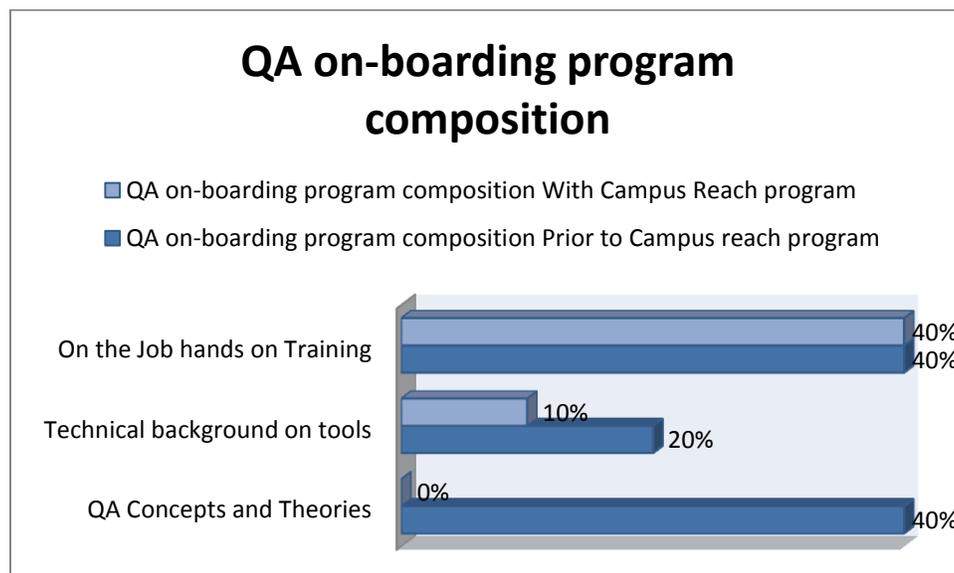
Direct benefits:

1) SLIIT certification program

- Reduced the training duration of standard in-house training by 50% and of other essential training required before a resource can be utilized by 85%
- Increased the ability to hire from a knowledge ready group. Over 75% of each class was hireable and Virtusa has hired over 50 resources out of this program

2) Quality assurance and testing curriculum programs

- Reduced the training duration of standard in-house training 50% and of other essential training required before a resource can be utilized by 85%
- Increased the standard QA and testing knowledge in the total pool of candidates available for hiring. According to the results of the hiring interview process, over 50% of candidates had standard QA knowledge. Most institutes enacted the program as an elective, lowering this percentage; however, feedback from lecturing staff and students has been overwhelmingly positive.
- QA on-boarding program consists of 6 weeks classroom training and 6 weeks of Rigor Project. Training covers 'QA Concepts and Theories' and 'Technical background on tools' and is essential for a fresh graduate to start working on client projects.



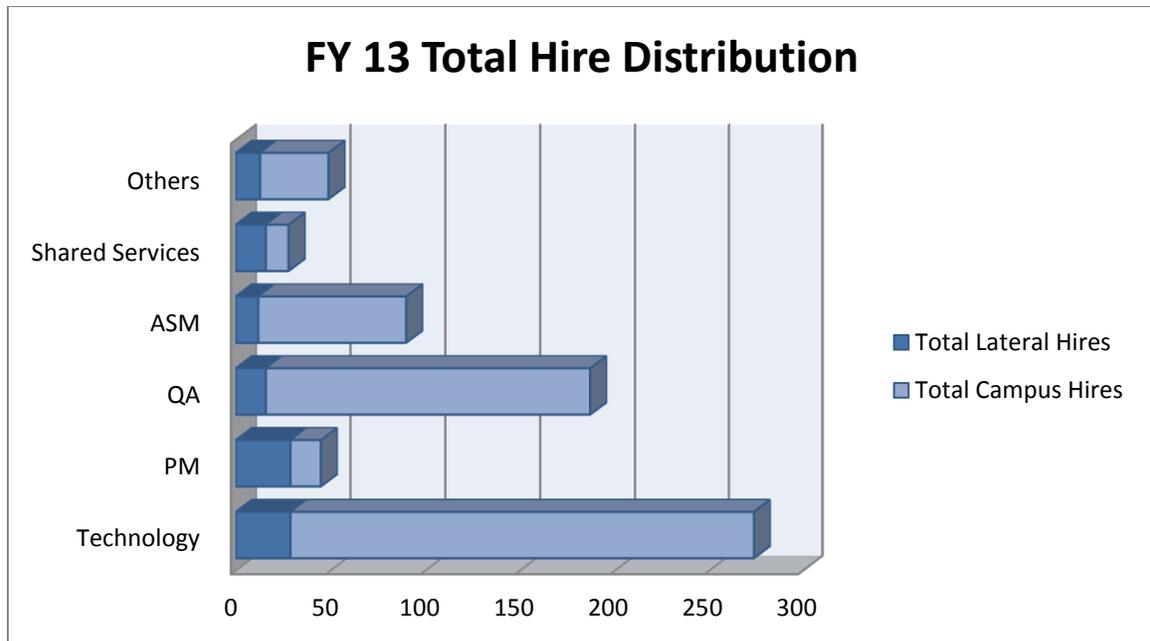
Indirect benefits:

This program gave the pool of over 30 ISQ volunteers the opportunity to keep their knowledge current with industry changes, improve their soft skills, and network outside of their immediate project groups as well as outside Virtusa.

As an organization, Virtusa has built and maintained a strong relationship with the higher education system in Sri Lanka. This provides the opportunity to obtain the strongest resources that are trained in up-to-date industry standards.

The increased pool of new graduates with industry ready knowledge is a benefit not only to Virtusa, but to Sri Lanka's IT industry as a whole, and to the graduates themselves who can find jobs more easily.

Lateral vs. campus hires for FY 13						
Track	Technology	PM	QA	ASM	Shared Services	Others
Total Lateral Hires	29	29	16	12	16	13
Total Campus Hires	245	16	171	78	12	36



6. Contact information

For more information please contact Brian Bernknopf.

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About Virtusa

Virtusa provides end-to-end information technology (IT) services to Global 2000 companies. These services, which include IT consulting, application maintenance, development, systems integration and managed services, leverage a unique Platforming methodology that transforms clients' businesses through IT rationalisation. Virtusa helps customers accelerate business outcomes by consolidating, rationalizing, and modernizing their core customer facing processes into one or more core systems.

Virtusa delivers cost-effective solutions through a global delivery model, applying advanced methods such as Agile and Accelerated Solution Design to ensure that its solutions meet the clients' requirements. As a result, its clients simultaneously reduce their IT operations cost while increasing their ability to meet changing business needs.

Founded in 1996 and headquartered in Massachusetts, Virtusa has operations in North America, Europe and Asia.