

# Community Impact Assessment of Cisco Networking Academy Program's Gender Initiative in Bangladesh

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## Executive Summary

This gender impact assessment of the Cisco Networking Academy Program in Bangladesh was undertaken by a team of locally-based consultants from IRIS Center at the University of Maryland. Using the questionnaires and guidelines developed by Cisco, the IRIS team interviewed 82 individuals representing the required range of university administrators, government officials, NGO representatives, private sector bodies, Academy teachers, Academy male students, Academy female students, and Academy graduates. The objective was to evaluate the efficacy of the gender initiative activities, and the Women in Technology (WIT) Scholarship Program in particular, in equalizing gender access to information technology education and to discover the impact, if any, that the gender program had on the educational institutions implementing it, government policies related to gender equality of education and recruitment, and societal attitudes towards women as information technology professionals. The assessment aimed to engage women students of the Academy Program to determine their opinions about the efficacy of the gender initiative and the Program overall, as well as to identify the positives, negatives, and difficulties encountered by women students so that the Program can formulate appropriate responses and continue attracting women information technology students that are marketable in the workplace.

The analysis concluded that the Cisco Academy Program in general, and in particular the WIT gender scholarship program, has made great inroads in offering quality information technology education. Yet there remain significant challenges facing women as IT professionals in Bangladesh, and many of these are the result of deep-rooted cultural attitudes and a broad expanse of societal problems that cannot be easily addressed by an educational endeavor such as the Academy Program. Improvements to the Academy Program that can be realistically achieved, albeit ones that are less specifically gender related, represent the best opportunity for Cisco to positively impact the options for women students.

The report offers seven recommendations for improving the Academy Program in Bangladesh based on the analysis and conclusions emerging from the survey process. These recommendations encompass:

1. Add the Academy Program to the institution's academic curriculum
2. Add a follow-on round of WIT
3. Add CCNP to the program
4. Ensure that the RA is training an adequate number of teachers and implement improved quality control measures for the instructors
5. Establish a job placement cell and alumni database, including internship placement services
6. Initiate an awareness raising program among employers in the industry
7. Expand Academy Program to cover government employees

The report concludes that the above changes are realistic, implementable, and offer the best options for meeting the 30% female enrollment goal of the Academy Program as well as the human resource needs of the country.

## 1. Introduction

This gender impact assessment of the Cisco Networking Academy Program in Bangladesh was undertaken by a team of locally-based consultants from IRIS Center at the University of Maryland. The assessment was carried out under contract with Cisco during a four week period from June 15-July 15. Using the questionnaires and guidelines developed by Cisco, the IRIS team interviewed 82 individuals representing the required range of university administrators, government officials, NGO representatives, private sector bodies, Academy teachers, Academy male students, Academy female students, and Academy graduates. As per the objectives established by Cisco, the team's intention was to evaluate the efficacy of the gender initiative activities, and the Women in Technology (WIT) Scholarship Program in particular, in equalizing gender access to information technology education and to discover the impact, if any, that the gender program had on the educational institutions implementing it, government policies related to gender equality of education and recruitment, and societal attitudes towards women as information technology professionals. The assessment aimed to engage women students of the Academy Program to determine their opinions about the efficacy of the gender initiative and the Program overall, as well as to identify the positives, negatives, and difficulties encountered by women students so that the Program can formulate appropriate responses and continue attracting women information technology students that are marketable in the workplace.

The IRIS team has been involved in coordinating the expansion of the Academy Program in Bangladesh and the implementation of the gender initiative for the last 2 ½ years. It was therefore able to easily initiate contact with all of the academies and students, and to capture the interest of influential and knowledgeable actors in the realms of the private sector, government, and non-profit organizations. This accessibility to and knowledge of the information technology industry in Bangladesh has enriched the analysis process and enabled IRIS to offer a clear assessment of the Academy Program and gender initiative to date, while also providing concrete recommendations for the Program's expansion and improvement.

In the course of this exercise the research team did encounter some limitations. Respondents exhibited a tendency to provide contradictory answers on any one questionnaire. Part of the difficulty was that, even when the questionnaire was translated into the local language, respondents had some trouble distinguishing the variations between questions. In trying to clarify questionnaire answers, the researchers were very aware of the need to avoid leading the interviewees towards a particular response, especially since interviewees already have an inclination to say what they think the interviewer wants to hear. Despite the limitations evident in the numerical results, this report adequately captures the overall picture of the gender initiative in Bangladesh and offers useful insight into the cultural and contextual environment in which it is being implemented.

The report will begin by providing an overview of the respondent selection process and a summary of the data analysis. This will be followed by an explanation of the conclusions resulting from the analysis, and the recommendations advocated by the IRIS team. Three best practice case studies will finalize the report.

## 2. Summary of Data Results and Analysis

### 2.1 Respondent Sampling

The interviewees were strategically selected to ensure an appropriate mix of male and female students, graduates, administrators, and instructors from each institution, as well as broad representation from the other interviewee categories. The IRIS team then added additional interviewees based on the responses arising from the initial interviews and recommendations offered regarding additional key informants. For example, several respondents considered that internet service providers (ISPs) represented one of the greatest potential employers of Academy Program graduates. Based on this information, an ISP representative was added to the list. Other similar additions resulted in a final, total respondent size of 82.

Such flexibility and judgmental sampling was used to select the respondent pool in recognition that an understanding of the information technology needs of the country, especially regarding Cisco certification, and the sector's opportunities for women graduates, would only be as good as the knowledge-level and perceptiveness of the respondents. The numerical breakdown of respondents is presented below, while a more complete list can be found in Annex 1.

<b>Respondent Category</b>	<b>Respondent Sub Category</b>	<b>Number of Respondents</b>
Current Students		
	Female	19
	Male	15
Graduates		
	Female	12 (10 through WIT)
Instructors		16
University Administrators		5
Private Sector		
	Employ Cisco graduates	4
	Do not employ Cisco graduates	2
Donors		2
NGOs		2
Government Officials		5
<b>Total</b>		<b>82</b>

*Table 1: Numerical breakdown of respondent categories*

### 2.2 Questionnaire Results and Analysis

The interview process successfully provided the research team with a confident impression of the effectiveness of the WIT scholarship program in attracting otherwise reluctant women students into the Academy classes, the obstacles and opportunities awaiting women in the information technology industry in Bangladesh, and the effect of the Cisco Academy Program on the policies and attitudes of the industry regarding women information technology professionals. Most importantly, the assessment process resulted in a number of clearly defined challenges facing the Cisco Academy Program, which if addressed properly, can lead to greater utilization of the Academy Program in

Bangladesh and ultimately play a significant role in the growth and development of the country.

Overall, questionnaire results indicate that the participation of women in the industry and their access to information technology education remains in its infancy. Despite this, great strides have been made in encouraging women's entry into the profession, and their example has demonstrated to employers the utility of a more gender diversified workplace. The assessment results must be viewed concomitant with the understanding that it is still considered groundbreaking for women to occupy professional positions in Bangladesh. In an unconventional and field-oriented profession such as networking, that women have a presence at all is an achievement. With this contextual information in mind, the following paragraphs offer a more specific look at the data results and a more nuanced interpretation of the current scenario in Bangladesh.<sup>1</sup>

Among the 34 current male and female students interviewed, 17 were in co-ed classes and 6 were in women only classes. Of the 16 instructors interviewed, only one was female. Half taught co-ed classes and half taught both co-ed and women only classes. 14 out of 17 women students in co-ed classes answered on the questionnaire that they are comfortable with men in the class, yet a majority proactively expressed their preference for women only classes. While this result was not numerically reflected through the questionnaire, concurrence with this revelation was offered by some other respondents. One representative of a government organization that also offers information technology training mentioned that his organization also conducted assessments of their program and found that women only classes were strongly requested. The reasons given were consistent and explained that the culture conditioned women to be less aggressive in asking questions and less physically pushy in accessing lab equipment. In an over crowded country of 127 million, it is normal and accepted for individuals to push to the front of a line and use physical proximity to express impatience. However, this is a less accepted practice for women vis-à-vis men, leaving them disadvantaged during limited lab hours.

It is interesting to note that most of the students, both female and male, from Bangladesh University of Engineering Technology (BUET), the most expensive and competitive program with the best facilities, did not feel the need for women only classes. This could be due to the higher caliber of students it attracts and the higher socio-economic status from which most of them originate. It is also significant to point out that the WIT scholarship recipients differed from the non-scholarship women in their evaluation of the greater effectiveness of women only classes. While the questionnaire did not specifically address the question of preference for women only classes, about half of the recipients pointedly mentioned that they wanted women only classes and liked it better than their other academic experiences with co-ed classes. There is however an element of regional variation in this result, with Chittagong University of Engineering Technology (CUET) students heavily representing the pro women only class responses. This is probably explained by the conservative nature of the Chittagong district. Whatever the regional underpinnings may be, such results offer some indication that the gender scholarship program has been successful in attracting and providing an environment for women students who might have otherwise been less likely to join the Academy course because of male predominance in the field, aggressiveness in the classroom, and worries about

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<sup>1</sup> For the individual questionnaires, see Annex 2. For the datasheet of questionnaire results, see Annex 3.

male disregard for their capabilities. Instructors confirmed this impression when asked if specific teaching techniques worked better with women students. One of the respondents again noted that he spends additional time outside of scheduled lab hours with women students who feel more comfortable accessing the equipment and asking questions in a less structured environment and in the presence of other women.

A somewhat related issue to the gendered class composition is how well women seem to perform on the course work compared to men. 14 out of 16 instructors and 10 out of 15 male students felt that women performed equally well as men. Some exception was granted to performance with hands-on use of the equipment. In this case, women seemed a little less certain, probably reflecting the cultural reality that men have greater exposure to mechanical equipment throughout their life than women. Men have the freedom of movement to spend time with friends playing with electronic equipment and putting parts back together, or joining a crowd of people in a public space while a car's engine is being inspected. The same is decidedly not true for women, who have little close-up exposure to the workings of mechanical equipment beyond what their academic or professional training offers them, and who are simply not visible in public spaces. A similar issue is how well women are academically prepared for the rigors of the course. 8 out of 50 students and instructors mentioned that women students seemed less academically prepared than men. This is a low percentage, but still points to the cultural reality described above in that women are provided with less opportunity to gain the kind of preparation, academic or hands-on, required for networking courses.

Despite some disadvantage, most respondents recognized the equal academic ability of women to excel in the field when given the opportunity, and consider that women's reasons for joining the program are similar to those of men. The majority of both male and female students said that they joined in order to increase their career prospects and to learn more about an industry that interested them. Instructor impressions generally concurred with this answer, though there is evidence that attitudes about women's traditional role remain very much at the surface. One instructor, when asked about women students' reasons for joining the Academy Program, responded that it was probably to make them more attractive as wives and to increase their status in the family. Since the majority of instructors are male, and as this attitude towards women's ultimate goals remains somewhat typical even if at times un-admitted to interviewers, it appears that the classroom environment for women still poses challenges and requires continued reversal of traditional gender stereotypes. The questionnaire responses do not adequately capture the extent of the problem, since interviewees are very much aware of what the "right" answer should be. The present analysis therefore has relied on impressions, anecdotal stories, and a local experience with and understanding of traditional cultural attitudes.

It is positive to note that despite the continued challenges, enrollment in the Academy Program has been cited by 44 out of 45 students and graduates, both male and female, as having a positive impact on their life.<sup>2</sup> Women students and graduates were asked if other family members assisted with domestic responsibilities during their studies, and nearly all of them affirmed the support of their family. This is unsurprising since most of

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<sup>2</sup> This refers to questions 16-19 for female students, questions 3-6 for male students, and questions 10-11 and 17 for graduates. 44 out of 45 respondents checked at least one positive change for at least one of these questions.



the women would not have been studying in the first place if they did not come from supportive families.

As mentioned earlier, one of the most cited difficulties for the women students was in accessing lab equipment and gaining practical experience. To some extent this has to do with the shortage of lab equipment, as well as the greater difficulty for women in staying late at the lab because of dangerous nighttime commuting. In addition, cost was frequently cited as a prominent difficulty for both men and women. The price range and level of subsidization varied markedly between the 9 institutions, beginning at Tk. 8,000 at Chittagong University of Engineering Technology (CUET) and going to Tk. 30,000 at Bangladesh University of Engineering Technology (BUET). It is interesting to note that all but one of the institutions offers some form of discount for females enrolling in the course.

From an institutional and societal perspective, the increased entry of women in the profession through the Academy Program has had some perceptible positive influence. While very little to nothing has changed at the policy level in either the government or within the host institutions, 9 out of 16 instructors have noted a more positive learning environment with the addition of women to their classes. The co-ed classes have put students in an interactive environment where male students have had to learn about acceptable behavior towards women in a professional environment and to re-evaluate ideas about women's capabilities and roles. 9 out of 15 male students have indicated that women make a positive contribution to the classroom environment, though this encouraging news towards the societal impact of the gender program is tempered by one remark that women were a positive addition simply because they provided good company. This is indicative of attitudes that prevail despite the positive influence of the gender initiative.

Private sector employers of women information technology professionals appreciated the improved work environment resulting from a higher percentage of women employees. While there were few concrete examples of how the environment had changed for the better, employers did note that women did extremely well in the marketing aspect of their jobs. It was explained that this was the case because often clients are suspicious that they will be cheated when employees make on-site calls. However, when it is a woman making an on-site call the client is more trusting of her work because women are viewed as more innocent. While it is not immediately obvious if this is a positive development for women as IT professionals since they are being valued mostly for their stereotypical gendered qualities and for the perception they create for clients rather than their skill at networking, it has caused employers to appreciate women employees and to understand the utility of hiring them. Whatever the reasons, women seem to view the situation as a positive step forward. Employers did also explain that women have recently been entering the workforce to occupy office jobs dealing with database and coding components, which are intellectually challenging, well paid, and require typically "male" qualities. In this capacity, women have outperformed many of the men. All of the graduates who were interviewed, except one who was unsure, thought that they were receiving equal pay with men.

Educators, instructors, government officials, and private sector representatives were questioned regarding the greatest opportunities for information technology graduates in the near future. 20 out of 32 respondents, or 60%, chose the private sector as having the

greatest demand for graduates. 13 out of 32 respondents chose NGOs in addition to the private sector. This is an expected result since there are so many NGOs in the country and many of them are microfinance oriented with an added need for sophisticated networking systems. Although very few respondents wanted to check in the box for government jobs, many said as an aside that the government has the potential to be a huge employer. At present, it is not organized enough to go online, but with e-Governance initiatives<sup>3</sup> receiving a lot of attention and donor funding, and an ICT Act<sup>4</sup> waiting for approval, it is only a matter of time before the government becomes a larger recruiter.

Most of the industry demand is in the area of network administration and network security, confirming the relevance of the Academy Program to the needs of Bangladesh. Through the course of the interviews, all students directly or indirectly said that the Academy Program certification was relevant and useful to them. While everyone appreciated what they learned in the program and regarded it as a good start, most felt that they needed education beyond CCNA. 19 out of 34 respondents (56%) directly mentioned the need for expansion of the program to include CCNP, while a number of other students expressed the need for certain networking skills that are part of and can be attained from the CCNP course. Students also complained about the need for more practical exposure and said that they did not feel confident on the job after graduating. Often this has to do with the outdated equipment being used by the institutions. The provision for an internship program was also a popular request, and it was felt that this would give the students added practical experience to increase their confidence and knowledge level.

This leads into the issue of job placement following completion of the program. Many former students expressed difficulty with finding a job upon graduation. At the same time, many of the private sector and government representatives stated their great demand for qualified network professionals, especially those with Cisco certification, but had not even received any applications from Academy graduates. There thus seems to be a disconnect and lack of communication between employers' needs and job seekers. Part of the problem may be that the institutions offer little in the way of career counseling or job placement. The other reason is that the ICT field is so new in Bangladesh and changing so rapidly that students have no way of knowing which companies have recently been formed and which ones have a new need for networking skills. There has so far been no effort to maintain a local alumni database and there is no central point of contact for employers wanting to locate Academy graduates. When instructors were asked what their female students did after graduation, none of them could answer the question. This is indicative of the lack of guidance about future career planning for students and the current terminal nature of the program.

Women graduates who had found jobs for the most part did not feel that they had more trouble than male students. However, most newspaper advertisements for information technology jobs openly state that they will accept only male applicants. Some employers

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<sup>3</sup> E-Governance refers to greater access to information, increased efficiency of government agencies, improvement in government transparency, and provision of online government services through the application of ICT. Definition is taken from *Policy Brief on "Information and Communication Technology" CPD Task Force Report*, Centre for Policy Dialogue, 2001.

<sup>4</sup> A comprehensive regulatory structure providing a legal framework for all manner of electronic communications, commerce and data/information processing.

mentioned that they are extra careful when interviewing female candidates to determine if they are planning on getting married or having children right away, and thereby quitting before a few years have passed. Despite the reality that many women in Bangladesh do place higher priority on family and end up quitting their job once they are married, there did not seem to be any counseling available to women graduates that would assist them to negotiate better with a potential employer and adequately sell their skills.

Although employers in all sectors were eager to hire certified Academy graduates, the interview process revealed that there are many other training institutes in the country falsely claiming to offer Cisco certification. In other instances, students achieve the industry standard certification that is offered online, but cheat in the process. The result is that numerous job applicants claim to have the appropriate qualifications, but in actuality have no relevant skills for employers. In some instances this has created a bad impression of so-called Cisco graduates.

Overall, respondents in all categories were complimentary of the Academy Program and requested expansion. As further recommendations, students requested that the knowledge of teachers be improved. In some cases it was mentioned that the teacher didn't seem to know very much more than the students. There was also a loud call for better equipment. Although Cisco subsidizes the initial equipment bundle, the institutions are unable to properly update the equipment. In other cases key parts may be difficult to import, making the whole machine unusable. Finally, as mentioned earlier in the analysis, many students found it very difficult to make the required tuition payments.

### **3. Conclusions**

It is clear from the analysis that the Cisco Academy Program in general, and in particular the WIT gender scholarship program, has made great inroads in offering quality information technology education. Some overall conclusions include:

- The scholarship appears to be initially successful at attracting women who would otherwise not have considered joining.
- The program has been generally successful in developing the self-assuredness, technical knowledge, and confidence of both male and female students.
- There is a high demand for Cisco certified graduates in the job market.
- There is high demand for access to CCNP in addition to CCNA.

Despite these positive results, the analysis has revealed areas for improvement. One of the most striking findings coming out of this assessment is that the majority of concerns voiced by respondents have very little to do with Cisco's gender initiative. This does not indicate that women's access to courses and entry into the job market are nearly equal to that of men. Rather, it reveals that the challenges facing women as IT professionals in Bangladesh are the result of deep-rooted cultural attitudes and a broad expanse of societal problems that cannot be easily addressed by an educational endeavor such as the Academy Program.

A significant factor hindering women's better utilization of the course is the tenuous law and order situation that makes any after-dark travel for women a very real danger. While evening meetings for the Academy Program are generally preferred so that students can pursue work or other study during the day, this automatically limits the options for

women students and the amount of time they are able to stay on campus to use the equipment or access study materials. In a country where a majority of students do not have computers or internet access at home, the ability to spend more time on campus is directly relevant to their ability to understand the material fully. Transportation is also an issue for employers who require their employees to make on-site visits, and it becomes simpler to just hire men for the position rather than worrying about how to accommodate the extra cost and hassle of hiring another car and driver for a female employee.

The second greatest difficulty facing women students is the attitude that their primary responsibility remains domestic and that their abilities in the workplace are less than that of men. While many men will be reluctant to state openly that they believe this since some measure of political correctness about gender remarks is usually practiced, it remains an underlying attitude that makes women's professional endeavors a struggle.

The respondents recognized that the gender issues mentioned above are beyond those that Cisco can be expected to address. Improvements to the Academy Program that can be realistically achieved, albeit ones that are less specifically gender related, represent the best opportunity for Cisco to positively impact the options for women students. There is a real need for greater awareness within the community of how to locate Cisco certified graduates and to ensure that their stated qualification is genuine. Concurrently, students and alumni require greater counseling on how to search for jobs, how to articulate to employers why their certification is unique from the industry certification, and how to present themselves during interviews. Finally, greater access to practical networking problems is needed as a supplement to the course.

#### **4. Recommendations**

While a number of recommendations for the improvement of the Academy Program in Bangladesh have been mentioned throughout the report, this section serves to recap the issues and to offer a more specific plan for implementing improvements. Based on the results of the assessment as well as IRIS' own experience working with the Academy Program for the past 2 1/2 years, IRIS recommends the following course of action:

1. Add the Academy Program to the institution's academic curriculum
2. Add a follow-on round of WIT
3. Add CCNP to the program
4. Ensure that the RA is training an adequate number of teachers and implement improved quality control measures for the instructors
5. Establish a job placement cell and alumni database, including internship placement services
6. Initiate an awareness raising program among employers in the industry
7. Expand Academy Program to cover government employees

Since transportation and safety issues are a significant barrier to women's greater participation in and utilization of the Academy Program, one solution is to integrate the Academy Program into the normal academic curriculum of each institution. While this would be a protracted task requiring the agreement of each university Vice Chancellor, it would help to solve the timing and safety issues confronting women students since the courses would be offered as a part of the regular curriculum, enabling more day-time scheduling. Integration into the academic curriculum would also help to increase

enrollment since family members would not question the need to take extra and expensive courses in addition to the student's normal university degree.

The data results have indicated that WIT is successful in attracting more women to the course. Now that this has been confirmed, it is time to institute a follow-on round of WIT. Rather than using WIT to enroll women directly in the CCNA course, it is recommended that the first round apply to IT Essentials with a follow-up round for CCNA. Such a strategy takes into account the assessment results indicating that women often start the program with less academic and hands-on exposure than men. By first taking IT Essentials, women can enter CCNA with more confidence and on a more level playing field. The additional advantage of beginning WIT with IT Essentials is that it may broaden the pool of applicants into other disciplines. The skills taught in IT Essentials are not specific to networking, and are useful to other professionals, especially those in such fields as business, architecture, and public health. Professionals in these and other fields would benefit from Cisco IT training, but may not consider applying to CCNA.

As has already been discussed in the data analysis section, most employers and students felt that networking is one of the most in-demand skill sets required by information technology employers. At the same time, they recognized that while CCNA provides the best quality certification available in the country, some students still require further training. CCNP was roundly requested, and would not be overly difficult to initiate given that the infrastructure and teacher base has already been firmly established. The culture in Bangladesh encourages study, and if an additional certification is available, there will be students waiting to sign up.

At the same time, this would be an advantageous opportunity to work with the Regional Academy to ensure that teachers meet the high standard required of the curriculum. Teacher quality control measures to date have not been effective in stemming student complaints about incompetent instructors. There would also be the opportunity to assist the institutions in emphasizing the recruitment of female instructors. While assessment results did not reveal objections to male teachers on the part of women students, the fact remains that women are abysmally under-represented as instructors. This leaves women students without an identifiable role model in the classroom and makes it less likely that women students will feel comfortable looking towards their instructor as a mentor and career advisor.

The difference that good instructors can have on the outlook and attitudes of the students was born out by interviews at Shahjalal University of Science and Technology in Sylhet. The legal main contact provides charismatic leadership and an understanding of the importance of a mentoring relationship between students and teachers. The result is a student body with a noticeably larger picture view of the world and higher confidence compared to Academy students from other institutions. This example needs to be emulated across the country and instructors need be made aware of their broader function above and beyond lecturing. If instructors are trained to instill confidence in their students and to take full advantage of the interactive nature of the program, then students will graduate with an appreciation of the unique learning experience Cisco provides and the ability to articulate to employers why CCNA qualifies them for employment. Not all students need CCNP for their professional goals, and instructors should be trained to help

students weigh their options rather than automatically considering further study the answer to their situation.

The need to establish a job placement cell is perhaps the most tangible recommendation coming out of this assessment. Students continually lamented their lack of practical experience upon graduation, and their difficulty in identifying those employers that specifically want Cisco certified graduates. On the other side, employers expressed frustration in locating certified graduates. There is a decided need to fill this communication gap and facilitate knowledge of and interaction between both parties. The placement cell may also assist students in finding internships to give them the necessary practical experience before they graduate. The Prime Minister's Office already has a program to subsidize information technology internships in the private and public sector. This government program is not being fully tapped, and could represent one mechanism through which the placement cell facilitates internship opportunities for students. As mentioned earlier, students also require coaching on how to search for jobs, how to present themselves confidently at interviews, and how to explain their qualifications. Many of the students interviewed did not even seem to realize that they are part of a worldwide program encompassing 500,000 students all achieving the same certification. The placement cell can offer these kinds of career counseling services.

One idea of how the job placement service can be handled in addition to creating a physical space is through an online forum and searchable online job listings. A database of alumni can also be maintained to facilitate relationship building and possible professional links between alumni and current students. The other advantage to such a database is that it provides ready access to a list of graduates in order to respond quickly to recruiter inquiries.

While the Academy Program has developed a solid reputation in the country among those familiar with it, it was found that the program is little known among industry stakeholders in general. And as already touched upon earlier, fraudulent training centers claiming to offer the Cisco curriculum are confusing employers. There is a decided need for industry-wide information sessions, encompassing the private sector, NGOs, and government representatives to raise awareness about the Academy Program initiative and what it hopes to accomplish for the human resource needs of the country. Branding of the Cisco Academy Program in Bangladesh has not been accomplished or attempted, despite the sophisticated press kits and marketing strategies that Cisco provides.

Employers have no idea that there are currently 300 Academy graduates and another 700 in the pipeline. Instead of hiring an in-house networking expert, many employers are spending large fees to outsource their networking needs while remaining unhappy with the results. Industry stakeholders need to be proactively told about the Academy Program and the benefits to their organizations of hiring Cisco certified Academy graduates. Once knowledge of the program has circulated, employers will begin demanding that any outsourcing work is undertaken by Cisco certified graduates. The level of professionalism will consequently rise to meet the standards set by the Academy Program.

Finally, it may be beneficial for Cisco to begin exploring the information technology educational needs of government offices. While the government is currently not organized enough to put to use the skills learned from the Cisco curriculum, it is

gradually recognizing the inevitable requirement that it become more e-friendly and has begun to revise the recruitment policy to mandate Cisco certification for outsourcing work. Ministries are starting to realize that job placements need to be made based on the background and qualifications of individuals rather than just political decisions, thereby creating scope for the Cisco curriculum to be introduced into the civil service training requirements.

## **5. Best Practice Case Studies**

The following inspiring case studies of women Academy Program participants provide examples of the real-life struggles facing women professionals in Bangladesh as well as the opportunities offered through enrollment in the Cisco Academy Program.

### **5.1 Cisco Graduate Joins the Largest Telecommunications Company**

Rubaiyat Koli grew up in Dhaka, where as a meritorious student, she had high expectations regarding her future academic achievements. She dreamed of becoming an engineer after completing her higher secondary education from Holy Cross College, one of the best institutions in the country. In order to pay for her CCNA tuition, Rubaiyat spent two years tutoring students at home. Today, her hard earned money spent on Cisco certification has paid off. She is enjoying a prestigious career working for the largest telecommunication company in Bangladesh, Grameen Phone.

Prior to her enrollment in CCNA, Rubaiyat had cultivated an inclination towards core networking. She used to browse websites to learn more about it, and through these online educational materials solidified an interest in core routers. Using CDs and other resources, Rubaiyat taught herself C Programming and Linux. Later, while she was studying Electrical and Electronics Engineering at Ahsanullah University of Science and Technology (AUST), the CCNA Program was just being incorporated at AUST. Rubaiyat enrolled in the first batch of CCNA in April 2003.

Rubaiyat joined a batch of 20 students, including 6 females. The 25% discount offered by AUST to all female participants was a great support for self financed students such as herself. In April 2004, she became one of the 12 students who successfully completed the course, out of which only 2 female students made it to the end. Around the same time she appeared for an interview at Grameen Phone. The employer was impressed with her Cisco networking certification and hired her as the Systems Engineer of Grameen Phone. In less than one year, she had achieved both her Industry Certification and economic empowerment.

“The Cisco Networking Academy Program at AUST has given me the qualification and the confidence in myself to apply for a specialized department of managing a telecommunication network. I got this rewarding job that I enjoy only because I am confident that I have a better stand than other applicants as I am a Cisco graduate with the skills needed in the telecommunication world. During the interview, I answered the network related questions correctly and they were impressed with my knowledge and confidence,” said Rubaiyat.

Her interest and motivation are leading her towards becoming a successful networking professional. Rubaiyat said, “My goal is to educate myself with Cisco Certified Network Professional (CCNP). Since I am working in the field of telecommunication and mobile technology I would like to learn more on Wireless Lan and Network Security if offered at a discounted price.”

Rubaiyat’s CCNA instructor, Debanon Datta of AUST, is proud of her performance at Grameen Phone and her ability to compete with 16 other short listed applicants based on her advanced practical knowledge and genuine interest in networking skills. “She is performing well in parallel with other fellow male employees and can handle pressure at work. Her communicative skills, presentation, and interactive participation in the class helped her to understand the CCNA curriculum better. She is making significant contributions in the field of telecommunication for her confidence in networking,” commented her former instructor.

According to Rubaiyat, there is significant opportunity for Bangladeshi female networking graduates in both the telecommunication and ISP (Internet Service Provider) sectors. “In a less developed country if we are educated in IT we can fight in the job market equally with men. Today my confidence has increased because I am not only a BSc Engineer but also a proud CCNA. This international certification has given me a specialized qualification to survive in this competitive world,” Rubaiyat added.

## **5.2 From a Small Town to the Ministry of Science and ICT**

Rawnak Anjuman grew up in Nawabgong, a tiny district town on the western border of Bangladesh. During her BSc level of education, Rawnak’s personal initiative and dedication led her to pursue computer programming such as Fortran, C++, Oracle 8, Visual Basis, MatLab, and MatCad. Her interest in programming grew with each completion. While Rawnak awaited her final exam results in Electrical and Electronics Engineering from Rajshahi University of Engineering and Technology (RUET), the Cisco Certified Networking Associate (CCNA) Program was just being incorporated.

In mid 2003, Rawnak enrolled in the 2<sup>nd</sup> batch of CCNA along with 27 other students. Due to economic hardship, this would not have been possible but for the 50% discount offered by RUET to all female participants. In 2004, she became one of the 20 students who successfully completed the course, of which 7 were female. In the beginning of 2005, Rawnak appeared for an interview at the Ministry of Science and ICT and was selected to work on the project “Establishment of Technology Dissemination Cell,” a team assignment tasked with bringing the Ministry under full network coverage and establishing e-governance in their own as well as other Ministries.

“RUET and the industry certification of the Cisco Networking Academy Program have provided me with the equalization of opportunity and equipped me to compete in the job market. During the interview to work as the Assistant Programmer at the Ministry of Science and ICT, I was still a student of CCNA, not even the CCNA graduate. Just being a prospective CCNA graduate had changed my life. I moved to Dhaka, leaving my family and friends behind, to work for the Ministry, which is a dream for many,” said Rawnak.

Rawnak is not ready to stop with her CCNA. “My vision is to equip myself with Cisco Certified Network Professional (CCNP). I have special interest in the field of



telecommunication and mobile technology. I would like to enroll in the Fundamentals of Wireless Lan and Network Security if offered at a discounted price.”

According to Rawnak, the utilization and application of the skills learned in the CCNA curriculum has given her a cutting edge in the practical field. “I find myself in a much better stand today just because I realized the value of the international certification of networking. I am glad I got the opportunity,” Rawnak proudly stated.

### **5.3 One of the First Female CCNA Instructors in Bangladesh**

Nusrat Jahan Tania grew up in Dhaka and later completed her higher secondary education from Mymensigh Girls Cadet College. Today she is a role model for all female students as a CCNA instructor.

Nusrat graduated with brilliant results in Computer Science and Engineering from Ahsanullah University of Science and Technology (AUST) and then joined as a lecturer at her alma mater. While the Women in Technology program was being incorporated at AUST, she found the curriculum of CCNA interesting and well developed. Nusrat was keen to join the latest instructor training course, and had to struggle to find sponsorship on her own since AUST could only afford to train one instructor and had selected a male.

Nusrat felt that a female instructor would contribute to one of the overall objectives of the program – providing training for women as well as men. Bangladesh has the lowest CNAP participation rate for females in the Asia-Pacific region. Last year, there were no female instructors in the Bangladesh program, and very few role models for female students. “Why not me?” was Nusrat’s question to herself. She addressed the gender discrimination of AUST by securing USAID funding and completing instructor trainings in both CCNA 1 and CCNA 2. She is one of the first four female instructors teaching CCNA students and has been promoted to Assistant Professor of Computer Science and Engineering in AUST in addition to being a CCNA instructor. “Female students are more comfortable in female instructor classes as they are less aggressive than men and thus get a fair chance to participate in my class,” said Nusrat.

She is looking forward to the instructor training for CCNA 3 and 4 and thus achieving the industry certification. “My immediate goal is to complete my CCNA certification. Then I would work towards Cisco Certified Network Professional (CCNP). In addition to all these, I plan to get a Master degree and PhD in networking. I want to further educate myself in mobile computing under network curriculum, wireless communication, and software implementation in distributed/ network environment,” she said.

Dr. Jobair Bin Alam of Bangladesh University of Engineering Technology (BUET), Nusrat’s CCNA instructor, recognized her potential as an exemplary female Cisco instructor with genuine motivation and interest. “Her dedication to teach CCNA is praiseworthy as she had to pursue a scholarship for getting the instructor training at BUET. Her class performance, cooperation, attitude to learn, communication skills and perseverance are worth mentioning. She deserves all the success in her career,” commented her former instructor.

According to Nusrat, “If you have a picture of success ahead of you, you will make it. I would like to be an incentive for female students. I want to support them pass through the

period of struggle with the help of the international certification of networking. She proudly stated, "I am glad I can make a difference in so many lives."