Chapter 6

Results of Field Trials for Development and Testing

As mentioned in our proposal, we have conducted extensive field trials, albeit with some changes in the distribution profile.

Since we now have a large number of Aakash Project Centres (APCs), we have distributed between 130 and 280 tablets to each centre. The AADLs established by Prof. Jhunjhunwala, are also included in this list given in chapter 3. Instead of massive deployment at 10 Institutions as originally envisaged, we have limited this only to IIT Bombay and IIT Kharagpur. We have maintained sufficient stock to distribute to additional centres as these get established in regions with less number of APCs.

Each APC is engaged in the following activities:

a) Teachers participating in the T10KT workshops, conducted during vacation period, are given these tablets for use during the workshop, for conducting quizzes and for accessing e-learning contents of the workshop.

This usage has already been successfully tested in the workshop on DBMS, with over 9000 registered participants at 250 Centres.

b) Tablets are given to final year students, for projects related to further development of applications and contents.

This usage has also started. Early reports have been received from some colleges. These are included in a separate chapter. More usage will be reported within coming month, when the semester begins.

c) Tablets are given to a selected class of that college. The usage in and outside the classroom is monitored.

This usage has been extensively tested at IIT Bombay, and the results are very encouraging. Such usage in other APCs will begin with the new semester.

More importantly, a number of tablets have been deployed at IIT Bombay and the five AADLs at sister IITs for extensive development of applications and content. This amounts to very extensive field testing. These efforts include the research projects done at the level of M. Tech. dissertations.

6.1   Training and Orientation

The team at IIT Bombay acquired the necessary expertise in development of applications and content within the first 3 months of the project. Similarly teachers started using Aakash tablets in their classes in the academic year 2012-2013. In order to create a large community of teachers and students with similar expertise, the project decided to conduct training and orientation programs on a large scale.

6.2   Orientation Program for Teachers

This orientation program was conducted on 10,11 November 2012. Over 13,000 teachers from the APCs, participated in this program. On this occasion, Aakash 2 was formally launched by Hon'ble President of India, Shri. Pranab Mukherjee, on 10 November 2012. Hon'ble HRM Dr. Pallam Raju, Hon'ble Ministers of State Dr. Shashi Tharoor and Shri. Jitin Prasada, and Secretaries from MHRD, were present during this launch.

6.3   Training Program for Students

In order to train teachers and students of these colleges, we planned two training programs. The first was a 2 day orientation program for teachers, which was conducted on 10, 11 November 2012. Over 13,000 teachers from the APCs, participated in this program.

An Aakash Research Fellowship Award contest was announced for participating teachers. They were asked to form teams, and write essays on how best to utilize Aakash tablets to enhance the effectiveness of learning process, and to improve quality of education in engineering colleges. More than 2000 submissions have since been received. These are being evaluated through a peer review process.

A training program for students from these colleges, was similarly planned and conducted over 2 weekends: 23-24 February 2013, and 3-4 March 2013. More than 30,000 students originally registered for this training program. Because of the restricted lab facilities in our Remote Centres, we could accommodate only about 8,000 of these to attend the program and complete all quizzes and assignments, and they were awarded certificates. The program was greatly appreciated by the participants.

The following topics were covered in the workshop

1. Java Basics for Android

2. Introduction to Android

3. Android Environment: Installation Creating AVD

4. Eclipse IDE

5. A Simple Android Application

6. Android Building Blocks

7. User Interface and Controls

8. Resources and Supporting Multiple Screens

9. Data Storage

10. Basics of Image Handling and Media

11. Developing Web Apps on Android OS

12. Publishing your Android App

13. HTML5 on Android

14. Version control, Documentation, and various software licenses

15. Advanced Android Debugging

16. Introduction to Animation a) View Animation b) Property Animation

17. Android Canvas

18. Interactive Educational Animations on Aakash Tablet

19. Android Internals

20. Android Policy Framework

21. Android Security

22. Efficient Energy Utilization

23. Authentication Mechanism on Android

24. Handling Low Memory Scenario in Android

25. Android Permission Model

26. Data Visualization Issues on Aakash Tablets

Additionally, we also announced an Aakash Android application development contest. More than 700 students have registered for the contest, and 250 project ideas have been submitted.

6.4   Training Program for Interns

Like each year, good students from different colleges are invited to work at IIT Bombay during summer months as interns. This year, the Aakash project announced a large scale internship program. Over 3,000 students across the country applied. A total of 160 students from 80 colleges in the country were admitted to the internship program.

All these students were given extensive training in Android apllication development. Covering all the topics listed in the previous section.

In the following months, teams of interns developed several useful applications. These have been added to the Aakash repository of Open Source applications.

6.5   Development of Training Material

The video recording of all our training sessions is now undergoing post production editing. All examples and sample code used druing training, is similarly being compiled on the project Moodle. Entire training material will be released on the project portal in Open Source. This will enable the learning community across the country to freely access the material and develop experties on their own.

As planned, the content and applications developed on Aakash are released in Open Source, under creative commons license. Subsequent chapters describe the work done in this regard.