Science@Mobile Project

A Report

National Centre for Innovation in Distance Education
Indira Gandhi National Open University
New Delhi, INDIA

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Published on behalf of Indira Gandhi National Open University, New Delhi by the Director, National Centre for Innovation in Distance Education.

Content

Acknowledgements

First of all I would like to thank the Director, Vigyan Prasar to consider such an innovative project of science popularization for providing financial support. Certainly, it was an innovative use of mobile technology for science communication. It is evident by the overwhelming response of the public in a very short duration after its launching. I am highly thankful to Prof. M. Aslam, Vice Chancellor, IGNOU and Dr. C. K. Ghosh, Director, NCIDE to allow me to take up the project at NCIDE, IGNOU. I extend my gratitude to Dr. Arvind Ranadey for coordinating the project from Vigyan Prasar side and providing continuous inputs for its successful implementation.

I am highly thankful to my colleagues at NCIDE for encouraging and supporting me successful implantation of the Science@Mobile project. I am deeply thankful to the project staff- Ms. Nagamani, Project Associate and Mr. Akhilesh Kumar, Project Assistant for all types of assistant in content generation, database development and organizing various meetings for review, translation and finalization of the sms items. I express my thanks to Mr. Ajay Bhardwaj, Consultant at NCIDE for developing the web portal and the software application for Science@Mobile. I am thankful to all the internal as well as external experts who have helped us in finalization of the content of the sms items.

Last but not the least, I should thank the people who have appreciated the scheme and subscribed for the Science@Mobile to make it a success.

(Dr. Oum Prakash Sharma)
Deputy Director, NCIDE &
Project Coordinator, Science@Mobile

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Science@Mobile Project
– An Introduction

1. Background

The increasing number of mobile subscribers in India indicates that the mobile is not now the symbol of status or urbanisation. In fact, it has become the necessity of the people. It is not remained the means of communication, but it is proving to be an effective tool of teaching-learning all over the world. It is well recognized that the mobile phones could add a completely new dimension to the teaching-learning process due to a wide range of attributes such as talk, text, camera, video, radio and internet etc. According to a TRAI report, the number of mobile subscribers in India has increased to 752.19 million in December 2010. The mobiles have penetrated into the rural areas also and the number of users is increasing year after. Because of its value added functions and wide spread, the mobile have potential to be used for teaching-learning purpose.

The National Centre for Innovations in Distance Education (NCIDE) in IGNOU has been providing innovative ICT enabled solutions to make the education more effective and learner friendly. Recently, the NCIDE and Raman Chair in IGNOU in collaboration with UNESCO have organized Science Olympiad for SAARC countries. NCIDE has also developing an Online Science Aptitude Test for different kind of target group including the general public, school children of different age group and the science teachers. Basically, NCIDE

aims at using emerging technologies like ICT and mobile technology for popularizing science and technology.

As the Vigyan Prasar has the mandate to popularise science and technology among the masses, it was proposed to exploit the potential of the emerging technologies including the mobile phone for this purpose. Keeping in view the decreasing cost, increasing penetration, and adding of new features, it was thought that the mobile could be a very effective means of spreading scientific knowledge and cultivating science temper among the people. In view of it, the NCIDE in collaboration with the Vigyan Prasar undertook a science popularization project titled "**Science @ Mobile**".

2. Objectives

The basic objectives of the proposed project were :

- to exploit the potential of mobile phones for science popularization,
- to spread the scientific knowledge including science news and updates among the stake holders through mobile service,
- to create interest among the people towards science and hence to develop a scientifically empowered society in India.

3. Target Group

The target group for the **Science @ Mobile** consisted of all the educated and uneducated people including home makers and children. However, the content was categorised into three categories of people. First category included the less educated common man who needed basic scientific literacy. The second category was the educated people having no science background. The third category was the educated people having science background.

All the people were given option to select what type of information they would like to receive through mobile service.

4. Methodology

For implementation of the project, basically following methodology was followed:

(a) **Development of Mobile Service Platform and software :**

With the help of the staff at NCIDE, a software and platform of managing the mobile based services was developed.

(b) **Hiring of the Gateway for providing mobile services :**

After following the due procedure, IGNOU had already identified a service provider to provide gateway services to various activities of the university. On the recommendations of the Advisory Committee of the project and due approval of the vice Chancellor, the same mobile service provider was hired for this project also to send the content into a wireless media on users mobile.

(c) D**evelopment of Contents to be delivered :**

The content such as science updates, general science facts, information about scientists, new researches etc. to be delivered through mobile, was developed jointly by Vigyan Parasar and NCIDE and it was vetted by the experts.

(d) **Server to host the Software and Contents:**

The software and the contents developed for the project was to be uploaded on some server. It may be either with Vigyan Prasar or NCIDE. But the remote access has to be with both for updating and up warding the contents.

In order to monitor the working of the project and to guide the project coordinators, a Project Advisory Committee will be Constituted.

5. Project Man Power

The project was coordinated by Dr. Oum Prakash Sharma, Dy. Director, NCIDE from IGNOU and Mr. Arvind Ranadey, Scientist- E, from Vigyan Prasar. For execution of the project two contractual staff were also appointed The project staff included Ms. Nagamani, Project Associate and Mr. Akhilesh Kumar, Project Assistant, who joined their duties on 17th October 2011. The project staff got appointed through walk-in-interview held on 16th August 2011. The main work done by them was as follows:

- The Project Associate collected the information from different sources like, books, news papers, internet, magazines, journals, etc. and segregated the compiled messages in different categories like, one line message, discovery message, international and national days, patented items, four line message on special discoveries/innovations, etc.
- There **Project Assistant helped in** data entry of the content and making the database of original content with the track records of the entries. He also assisted the Project Coordinator and the Project Associate in the activities related to the project such as organization of meetings, etc.

In addition to the above, help of the programmers at NCIDE was also taken for developing and maintaining the required software for registration of users and delivery of the content to the registered users. They helped in managing the database and the portal.

6. Infrastructure requirement

The required infrastructure like computer, printer and internet, etc and seating arrangement for the Project Associate and Project Assistant cum data entry operator was provided by the NCIDE. NCIDE provided the required space for the project staff and computers for programming and database development. The final software application developed in the project was uploaded on the server of the IGNOU with a link on website of the Vigyan Prasar.

Features of the Science@Mobile

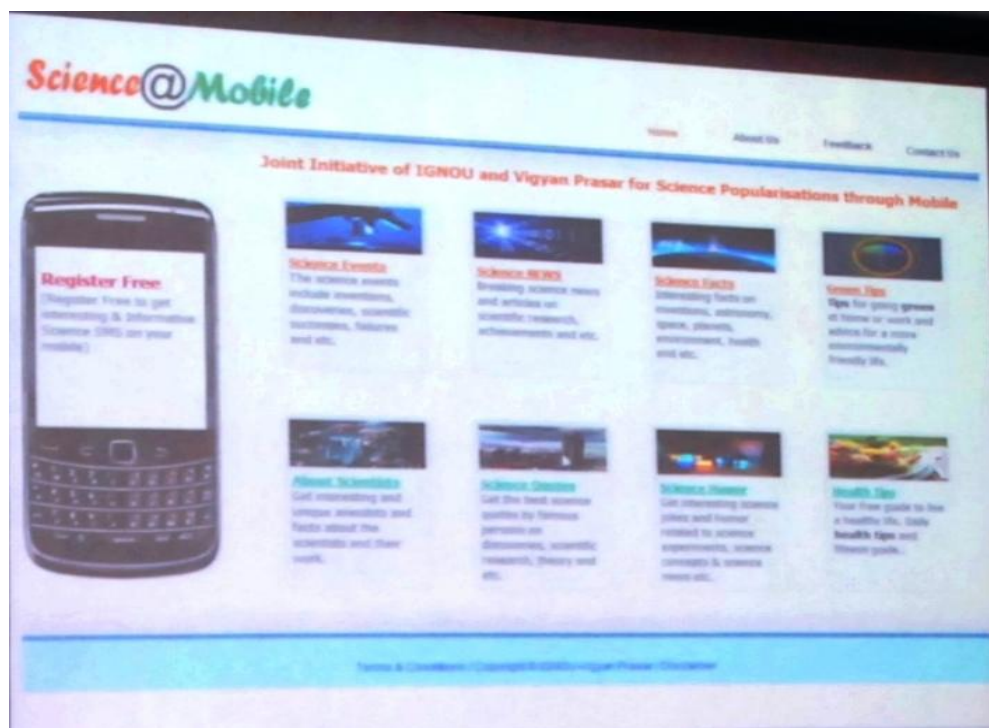The salient features of the scheme of science2mobile were as follows:

- Regular update of content through Content Development & Management System,
- Automated Database Management system
- Provision for registration through mobile phone as well as through internet
- Free of cost service to the users
- Content developed, reviewed an vetted by a panel of experts
- Provision of feedback from the users
- It can offer mobile test/quiz in a real-time
- Option to select type of content to be received
- Option to select frequency of receiving SMS- once a day or weekly

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Web Portal for Science@Mobile

Science@Mobile is a science popularisation project taken up by NCIDE (IGNOU) in collaboration with the *Vigyan Prasar*. A complete Progress Report of the Project is as follows:

1) **Development of Dynamic Website for Science@Mobile**

NCIDE internally developed a dynamic website for Science@Mobile project which had the sample sms content under each category. The portal had facility for online registration and online feedback facility, etc. The visitors could see the sample content before registering for the science@Mobile.

2) **Development of Software for Online Registration and Content Management**

The software for the Science@Mobile project was developed in hose by the NCIDE. The main modules of the software were as follows:

- Registration Module-both by Mobile and Internet.
- Administrator Module for Content Development and Management.

The software was pilot tested on 26th December 2011 by sending SMS on mobiles and was formally launched on 29th Feb, 2012 by the Vice Chancellor of IGNOU and the Director, Inter University Accelerator Centre, Delhi and its services continued till the completion of the project.

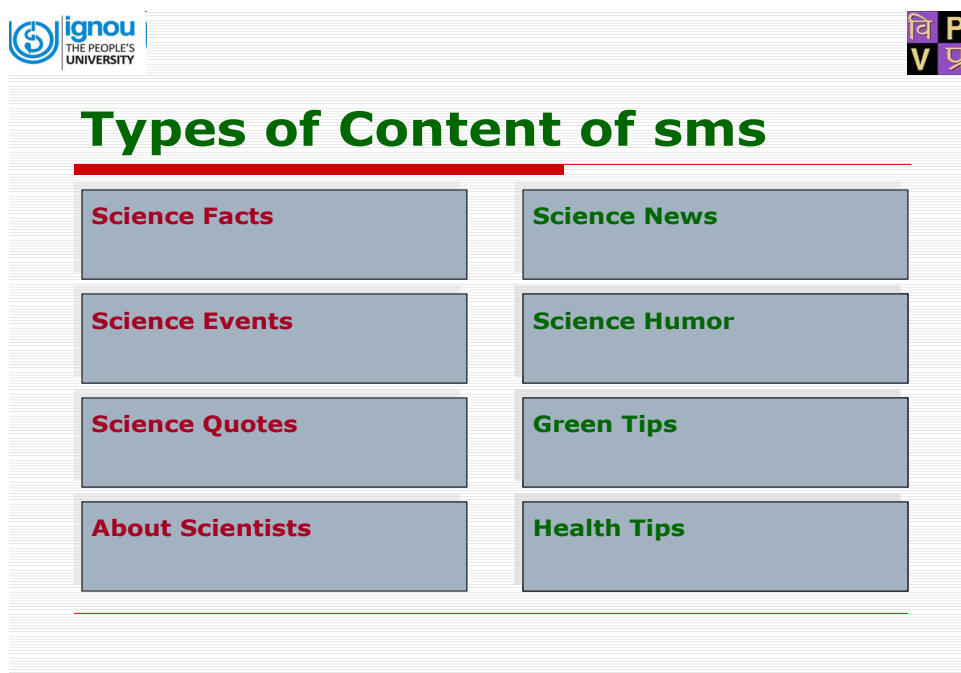3) **Selection of Service provider agency for SMS gateway**

Service provider agency for SMS gateway, named a Netcore Solutions Private Limited company has been engaged for the gateway services based on the recommendation of Project Advisory Committee and approval in the University from the VC, IGNOU. This agency was selected by the IGNOU for other SMS services in the University, by following due procedure. The service providing company, (Netcore Solution Private Limited) identified for this purpose was already providing its services to the IGNOU. Therefore, the same company was engaged on the same terms & conditions and rate.

Development of Content for SMSs

The content of the sms to be sent through mobile was the key component of the Science@Mobile project. The content was developed in-house with the help of the Project Associate which was reviewed and edited by the expert committee and the Project coordinator. A brief report of the same is given below:

Type of the Content of sms

There were mainly eight categories of sms developed under this project

Development of Content for SMS

The text for the SMS, used in the project were mainly developed in house by the project Associated which were selected and reviewed by the Project

Coordinator. The sms items included Science facts, Important Days & Events, Science Quotations, About Scientist, Health Tips, Science Humor, Science News and Green Tips. Total 1000 sms items were developed in the first round of the project.

In addition to the 1000 SMS items finalized by the experts, around 500 more items were developed. These items were also reviewed and edited by the experts.

Translation of SMS item into Hindi

As decided by the Project Advisory Committee, the finalized sms item were translated into Hindi also for this purpose a two day meeting was held in the first week of June 2012. All the sms were translated in the meeting.

Expert Committee Meeting for Review and Vetting of Content

In order to review and finalise the content of the SMS used for Science@Mobile project were held. A meeting for review of SMS items was held on 30-31st January, 2012. At that meeting around 1200 sms items were discussed and reviewed. Finally around 1000 sms were selected after through editing by the expert committee. The selected item were digitized and converted into the database. (A copy of minutes is enclosed as **Annexure-A**)

Project Advisory Committee Meeting

In order to review the progress of the project and to give guideline for effective implements of the Project Advisory Committee(PAC) was constituted. During the period of one year, the PAC had four meetings. The meetings were held on 26th August, 2011, 11th February, 2012, 21st March, 2012 and 30th May, 2012. The minutes of all the meetings of PAC are enclosed as (**Annexures-B,C,D&E**).

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Launching of Science@Mobile

On occasion of National Science Day, Vigyan Prasar in collaboration with National Centre for Innovation in Distance Education (NCIDE) of Indira Gandhi National Open University (IGNOU) has launched an innovative scheme of popularizing science through mobile devices named 'Science@Mobile'. The scheme Science@Mobile was launched by Prof Amit Roy, Director, Inter-University Accelerator Centre, on 29th February, 2012 at National Science Centre, Pragati Maidan, New Delhi.

Dr. C.K. Ghosh, Director, NCIDE in his welcome note briefed about the Project. Therein he mentioned that the collaboration with Vigyan Prasar for Science@Mobile is a beginning for a long term relationship between two organizations. He informed that the target group of the scheme Science@Mobile includes all the educated and uneducated people including

homemakers and children. The content is grouped for three categories of people. First category includes the less educated common man who needs basic scientific literacy. The second category includes the educated people having no science background whereas the third category belongs to the educated people having science background.

Prof. Amit Roy, Director, Inter-University Accelerator Centre, New Delhi in presence of Prof. M. Aslam, Vice Chancellor, IGNOU officially launched the Science@Mobile scheme by activating the web portal of Science@Mobile and thus formally launched the scheme of Science@Mobile.

Prof. Amit Roy, in his inaugural lecture mentioned that the society without the appreciation and knowledge of science is incomplete. He expressed that, if we do not understand the power and application behind a phenomenon, we would live in darkness and consider it black magic and hence the spread of knowledge is very important.

Prof. M. Aslam Vice Chancellor IGNOU in his presidential address, congratulated NCIDE and Vigyan Prasar for such innovative use of mobile

phones for science popularization in the society. He mentioned that, IGNOU itself is an innovation towards democratization of higher education in the country. Moreover, right from its inception, the IGNOU has been using the modern technology for accessible and effective education in the society. He expressed that, it is good to explore the potential of mobile for teaching-learning purpose including science popularization. However, he cautioned to be careful about the side effects of such technologies and also not to be addict of them. He suggested that while selecting the sms, we should be careful that they are good and useful for a common man.

Dr. O.P. Sharma, project coordinator of Science@Mobile from NCIDE highlighted the features of the scheme; he mentioned that the scheme is free-of-cost to the users. He emphasized that the user have a privilege to select the type of content and frequency to receive sms on their mobile as per their choice and interest. Users can subscribe to the service by messaging "SCIMBL" to 092230516161 or clicking the link provided at Vigyan Prasar and IGNOU websites www.vigyanprasar.gov.in and www.ignou.ac.in. It is mentioned that the present service is available only in English.

Dr. Rama Sharma, Director, National Science Centre, New Delhi was present for the function.
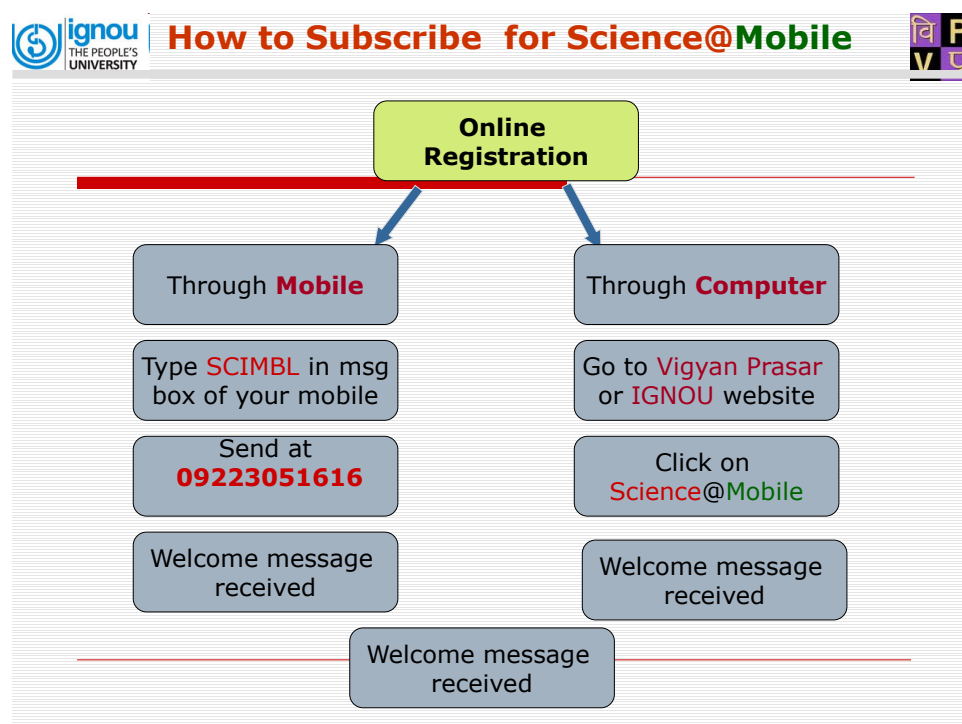

Ms. Kinkini Das Gupta, scientist, Vigyan Prasar also addressed the audiences. Dr. Subhodh Mohanti, Director, Vigyan Prasar, in his vote of thanks mentioned that the role of Vigyan Prasar is many fold and will keep working with the new ideas and innovations to be implemented for the betterment of society.

sms Delivery and Response

Subscription to Science@Mobile

In order to subscribe the science2mobile service, one could register in two ways- either through mobile by sending sms at 09223051616 or through computer by clicking on the science@mobile link given on the websites of IGNOU as well as on Vigyan Prasar. A flow diagram for registration is as given below:

Response to the Science @ Mobile

The response of the peoples towards the scheme of science popularization through mobile is overwhelming. Presently more than 69,653 people have

registered for Science@Moblie which includes about 45,513 through mobiles and around 24,203 through internet. The internet subscribers include 65% students and 35% others which indicates that the scheme is most liked by the students. Such a big response is highly encouraging and it shows that majority of the people like to gain additional knowledge, provided right kind of information relevant for them is given. It is interesting to mention that one third of the people registered through internet belongs to the rural area, which shows that the science@mobile has reached to the rural areas also where there is more need of science literacy.

Frequency of SMS sent

Initially the science SMSs were sent twice in a day for 15 days. But because of the problem of budgetary provisions, the SMSs were sent twice in a day between 29th Feb to 9th March 2012. Thereafter, it was once in a week upto 20th March 2012. After 20th March, 2012 SMS have been sent on the occasion of important days and events only which was 2-3 times in a month.

Parliament Question on Science through Mobile

After launching of the scheme of Science@Mobile, a Parliament Question was received on 20th April, 2012 regarding details of the aims and objectives of the scheme. Which was replied by the NCIDE in time.

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Financial Receipts and Expenditure

A total amount of Rs. 7,20,000/- was received from Vigyan Prasar in two installments, out of which an amount of Rs. 3,44,382/- has been utilized on various activities. The Utilization Certificate is attached as Annexure-F. A balance of Rs. 1,95,619/- has been refunded to Vigyan Prasar vide Cheque No. 139250 dated 26.03.2015.

Expenditure on Delivery of SMSs

So far total 4,85,403 number of SMSs for the month of March and April, 2012 were sent to the subscribers of Science@Mobile. All the bills (related to the payment of SMS) received from the Netcore Solutions Pvt. Limited, were forwarded to the *Vigyan Prasar* for payment. The budget sanctioned for sending the SMSs is Rs. 50,000/- per year.

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Newspaper and Media Coverage

The launching of Science@Moblie has been widely covered by the print as well as electronic media. More than 15 news papers and websites have published this news in detail. A list of the same is given below:

Sl. No.	Title of the news	Newspaper
1.	Vigyan ka gyan denge mobile par mupht sms	Hindustan (Hindi)
2.	Ab syllabus mein confusion door karega bas ake sms	Nav Bharat Times (Hindi)
3.	Science lessons now available on mobile phones	Business Line, The Hindu
4.	Mobile sms ke zariye Vigyan ki Padhai	Rashtriya Sahara
5.	Mobile sms ke zariye karein Vigyan ki Padhai	Live Hindustan.com
6.	Mobile sms se karein padhai	Punjab Kesari
7.	Ab aapko ungaliyon par yaad rahengi science ki guththiyan	Dainik Bhaskar
8.	Mobile phone dega vigyan ki jaankari	Khaas Khabar
9.	IGNOU to popularize science through mobile phones	Web India
10.	Science lessons now available on mobile phones	The Times of India

11.	Science lessons now available on mobile phones	Sci-Tech
12.	IGNOU launches scheme to popularize science through mobile phones	The Times of India
13.	IGNOU to popularize science through mobile phones	Zeenews.com
14.	IGNOU launches scheme to popularize science through mobile phones	NBS News
15.	IGNOU to popularize science through mobile phones	Moonminds
16.	Science lessons now on mobile phones	The Hindu
17.	IGNOU to popularize science through mobile phones	Sentinelassam.com
18.	Mobile sms ke zariye vigyan ki padhai	Samay Live

(A set of copies of news/clips is enclosed as **Annexure-G**)