

**Technology Adoption Survey in  
Health Care Industry**

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## Comments by the Faculty

XYZ Technologies Pvt Ltd is a three year old startup that works in the IT services area. It was founded in 2008. The firm developed a software product that can be used online and was aimed at the medical profession. The product was its flagship product. The product happened to be a new concept in the healthcare sector and was being used to manage the patients better and treat them. It is currently used by many doctors.

The product has many interesting features such as patient billing, treatment and prescription generation, appointment management, performance analysis and dashboard.

The objective of the project was to find out the potential of IT in health care industry in a large Indian city. The company envisaged this project to get clarity on the medical profession's perception on the company's product and allied offers and also to use the findings to improve communication with the medical profession which in turn could help better patient management.

Towards this end the firm initiated a study titled **“Technology adoption survey in health care industry”** to find out as to how many doctors have adopted IT in their clinics, nursing homes and hospitals, so that the firm could come up with a target plan to reach the medical profession in the city. The project was relevant in the context of the firm's expansion plans across the country specifically in major cities. It was interesting that the study covered existing users and potential users. Thus the study was a combination of understanding customer satisfaction and new concept testing exercise. The objectives of the project included:

- ◆ To find out the potential for the company's product in health care business in the chosen city.
- ◆ To explore the possible ways the software can aid in health assessment of the doctors.
- ◆ To find out the target customers for the company
- ◆ To get the feedback of the product

The student surveyed around 1200 clinics. The sampling posed a problem and was innovatively overcome by the student.

It was found that dentists were major users of using computers and allied software in their clinics for patient data management, for appointments and for patient education. The student also helped in Business Development for the firm by marketing the product which was an interesting additional dimension to the study and convinced 62 doctors to purchase the firm's software product. The student through this study identified emerging segments, features preferred by existing users and features that could be enhanced. The study was an important and relevant one for the firm given the decision-making context. There were interesting opportunities in the market for the firm that were identified by this research. The study is not only useful from the perspective of healthcare management but also an interesting exercise in a product management context in the light of novelty of the product.

(Name of the company, the product have disguised. Crucial commercial information and findings have not been included. Information given is for academic purposes)

**M.R. Suresh**

# Technology Adoption Survey in Health Care Industry

## Introduction

Healthcare Industry in India is poised to grow in the coming years. A few of the major factors driving the growth in the sector include:

- ◆ Increasing population that require healthcare
- ◆ Growing lifestyle related health issues
- ◆ Costs of medical treatment becoming cheaper in some fields
- ◆ Thrust in medical tourism
- ◆ Increasing penetration of health insurance schemes
- ◆ Increased disposable incomes of families
- ◆ Government initiatives and a greater focus on Public Private Partnership (PPP) models.

The growth of the health care industry in India is spectacular similar to the pharmaceutical industry and the software industry in India. A large scope offered by the health care industry is yet to be tapped. According to experts the health care industry in India is likely to be a growth engine for the Indian economy in the oncoming years. The health care sector includes manufacture of health care instruments, health care in the retail market, hospitals and allied services.

Healthcare sector that has witnessed positive upward trend even during recessionary conditions is likely to contribute to higher revenues, along with IT Services and Education sectors.

Use of Information technology in medical establishments

**Quality indicators**—if designed appropriately can capture and allow the comparative analysis of patients or groups of providers for quality assurance functions.

**Reducing errors-** Technology can reduce manual error.

## **Accounting and Billing in the Hospitals**

**Information support for clinical decision-making-** ERP based solutions developed for speciality medical clinics provide treatment suggestions based on the patient's signs and symptoms.

- ◆ Decision support information for management of administrative functions, such as activity-based costing, productivity reporting, patient recall, and patient education.
- ◆ Electronic data interchange, including telecom-dentistry, data sharing with other health professionals, and third-party payers.
- ◆ Information technology can effectively be used to enhance quality of healthcare by improving both clinical and business operations. They also offer scope for patient involvement.

## **Opportunities in Health Care Industry**

- ◆ Scope for FDI and PPP in healthcare and medical services business.
- ◆ The National Rural Health Mission (NHRM) has provided substantial allocation towards up gradation and capacity enhancement of healthcare facilities.
- ◆ Setting up of more AIIMS like institutes and up gradation of existing Government Medical Colleges.
- ◆ A proposal to further increase in allocation for National Rural Health Mission and launch of the National Urban Health Mission to meet the needs of the Bottom of Pyramid and slum dwellers in urban areas

## **Challenges in Integrating IT in Health Care Industry**

- ◆ Lack of standards
- ◆ Lack of awareness in using IT for better patient management
- ◆ Lack of in-house IT domain knowledge
- ◆ Reluctance of medical, nursing and other staff to adjust to change
- ◆ Apprehensions around technology failures (paper systems appear more reliable)
- ◆ Lack of proper vendor support
- ◆ By analysing opportunities and challenges company came up with new product to increase the efficiency and to reduce the errors in health care industry.

## **XYZ Company's Product**

Product is new to market and new to the company. Company has introduced the software for Dentists and planning to launch other products for other Doctors.

### **4 Ps of Company**

**Product** - Simple online software for dentists (for patient data management, medical records management and appointments management). The unique selling proposition of product is its calendar which allows scheduling the appointments and accordingly sending a message to inform the patients and the doctors about the timings.

**Product description** – The product is the software which would be used by the dentists / doctors in their respective clinics / hospitals.

- ◆ It is software as a service
- ◆ It is providing appointment scheduler with SMS and e-mail.
- ◆ By a single click the clinic staff, doctor can generate bills and it also helps in accounting
- ◆ With the help of this software the clinic can easily import data from other software
- ◆ A large number of patient records
- ◆ Patient would also get her 'login id' for her prescriptions and treatment plans
- ◆ Doctors get practice profiles with the dash board facility to evaluate their monthly income and expenses.
- ◆ Doctors can also use by multiple practice enabled system of software
- ◆ Virtual receptionist is also a part of software, **which can directly book an appointment over phone without any manual help.**

**Price** –The product has been priced according to the different needs and requirements of the doctors and has been individually tagged as P 1, P 2, P 3 and P 4.

**P 1:** The personal scheme of the product targets the stand alone doctors/clinics. The price quoted is Rs. 699 per month with only one user and can hold up to 200 appointments per month. The advantage of this scheme is that it personalises the services of the individual doctor compared to the other doctors who competing in the same area. The doctor can avail the facility and measure the profitability of the clinic and analyse the performance of any given month or year.

**P 2:** This package has been designed for those doctors who have a clinic in partnership. During the course of research it was observed that there were doctors who liked to share the rent or the expenses of the clinic. The price of this product is Rs. 999 per month and can be used for three users with a combined number of appointments of up to 500 per month. The package has been designed keeping in mind the usability of doctors and their contribution to the clinic using which the doctor can compare each of the other doctor's performance and can also change their consulting fees or any other profitable strategy to attract the patients. The doctors can add additional offers with software, for example, a patient coming for a dentist consultation can also get an offer for having his health check up with a general physician or get a diet consultation from a nutritionist with the same consulting fees.

**P 3:** This package has been designed for nursing homes and small/ medium health centres with single or multiple different specialities priced at Rs. 1699 per month and can be used by seven users with a combined number of up to 1000 appointments. The usability of the software has been designed in such a way that it can act as a Dashboard to the management / doctor. It can give an individual analysis of every doctor and provide his performance chart. The main advantage of this package is that the doctor can consult another doctor in the centre using the software. Thus it does the job of creating a network within the clinic, exchange of x-ray reports and other such test reports and mutual consultation. This allows an accurate and personalised service to the patients.

**P 4:** The P4 package has been priced at Rs. 2999 per month and can be used by fifteen users with a combined list of 2500 appointments per month. The package is almost the same as P 3 except that that it is aimed at larger hospitals and health centres having more than ten doctors.

**Place** – Company has launched this product in Bangalore and is planning to launch in Mumbai, Delhi, Kolkata, Hyderabad and Chennai. The places have been selected keeping in view of the number of doctors, technology

used by them. It is assumed in these major cities a majority of doctors are quite computer savvy and may prefer personalising the service using this software. These cities have been chosen in view of the wide range of specialist doctors who are the target customers for company, specifically, dermatologists, paediatricians, dentists, homeopathy, Ayurveda doctors and healing centres, orthopaedicians and such other specialists who are identified by an internet search. For web presence company has an active team on social media such as Facebook, twitter and many other web sites to inform the doctors about their product.

**Promotion-** XYZ Company participates in every major dental association meeting in India and makes presentations about its Product.

XYZ Company has actively participated in health shows, outdoor events and in interactions with health experts and thus has ensured its visibility to doctors in every corner. Newspaper advertisements, speciality magazines for dentists have been the prime targets for the readers. According to XYZ Company executives the product in itself is an advertisement with ongoing message alerts to the patients as well as doctors. In addition, the reports, the prescriptions generated and the website also promote the product through an efficient SEO ( Search engine optimisation).

### **Objective of the Study**

The objectives of the project included:

- ◆ To find out the potential for the company's product in health care business in the chosen city.
- ◆ To explore the possible ways the software can aid in health assessment of the doctors.
- ◆ To find out the target customers for the company
- ◆ To get the feedback of the product
- ◆ Preliminary Concept testing for new products for specialities other than dentists.

### **Research Design:**

Largely a descriptive research design was used as it would give insights about the target market and used both qualitative and quantitative data.

**Data Collection:** Primary data collection



## Source and sampling

### Primary data collection through questionnaire method

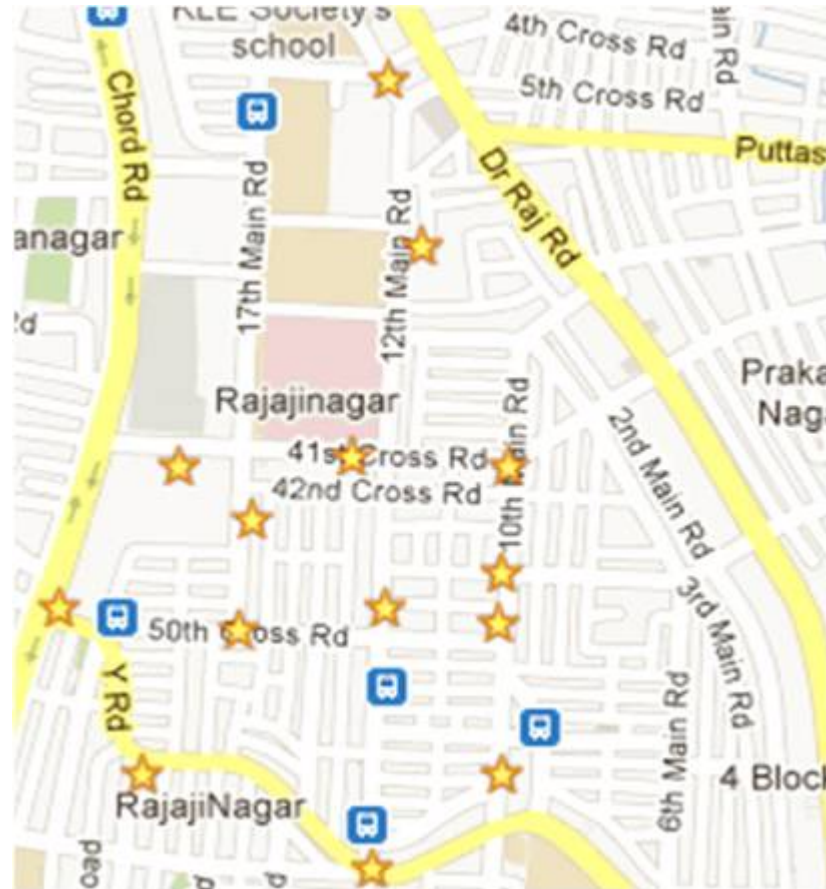
#### Sampling Method

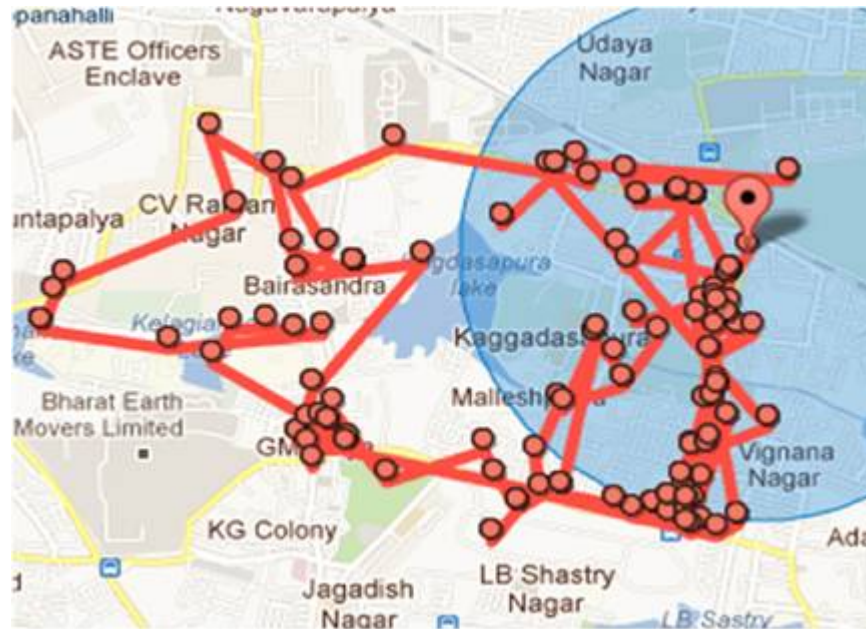
Bangalore city was divided using a map into small blocks and sub blocks, and in each block sub blocks were selected in a random manner. Within the chosen sub block doctors/ clinics were contacted.

**Sample size was 1200.**

Location history of a sub block is shown in the screen shot as below for information

The star marks in the map are clinics and nursing homes (indicative).





### Findings from the questionnaire based survey

- ◆ Out of 1200 doctors 45 % of the doctors are using computers. (Company's product is software as a service, for SAAS internet connection is mandatory)
- ◆ Out of 1200 doctors 32 % doctors are using Internet connection
- ◆ Out of 1200 doctors 21 % were already using software.
- ◆ 110 of the respondents were existing customers.
- ◆ Around 142 doctors were using various other software products like HMS (Hospital management system), Homeopath, and other customized software.

### Concept testing

Company is going to launch other products targeted at General Physician, Dermatologists, Orthopaedicians, Ophthalmologists and Diagnostic centres.

But many doctors are not aware about such products in India. After meeting the doctors to find out the awareness about the product a demo was given. The likelihood of adoption and features wanted were probed.

A few questions that were raised were:

- ◆ Uniqueness of the concept- Does it solve the problem?
- ◆ Believability of the concept-How much they like the concept?
- ◆ Importance of the problem- How likely would they buy?
- ◆ Interest in the concept- Their reaction to the price?
- ◆ Is it realistic, practical and useful - Problems they see in use?

**Business development and learning from business development  
As part of the sales and business development funnel concept was used  
to generate leads for XYZ Company:**

- ◆ Suspects: has the need for software
- ◆ Prospects: has need and ability to pay
- ◆ Customers: existing users of the product
- ◆ Clients: repeat purchaser of the product
- ◆ Supporters and Advocates: Existing customers who refer other doctors to use company's product.
- ◆ Around 1200 doctors were contacted for business development and initial promotion and convinced around 62 doctors to buy the company's products.

**Learning from business development**

Many doctors were using computers, internet for medical purpose and patient data management and were ready to pay for the software. Doctors were using excel and other software which were not very beneficial to them and were on the lookout for a better software.

The features liked by doctors based on the demonstration of the software were calendar for appointment and SMS reminders to patients.

Doctors expressed that virtual receptionist, Dash board and SMS reminders were the unique features of the product.

The software was perceived as user friendly. XYZ Company was charging price on the basis of usage. Doctors liked the pricing strategies for the

product. Many doctors perceived that XYZ Company's product was a very different product from the existing ones.

### **Recommendations**

- 1) Company should develop patient education software for dentists.
- 2) Software for diagnostic centers to be developed as all the diagnostic centers are users of IT.
- 3) Feedback related issues- Company ought to send SMS to the patient from Doctor's name or clinic's name, as many patients ignored SMS messages in XYZ Company's name.
- 4) Doctors are reluctant to the dash board function of the software because of exposure of income and expenditures details to external entities including XYZ Company as the product is online software. Company must assure the doctors of privacy of information.
- 5) Existing customers to be used to give reference about the product
- 6) Company can target health magazines, health events to advertise on a large scale so that the traction is achieved.
- 7) Company can print prescription pads for doctors to increase the visibility of the product. This would help in increasing patient awareness and would enable them to can find out doctors name, address and contact number, and in scheduling appointments.
- 8) At present company has developed software mainly for dentists, It should try to develop customised software for other specialities like Dermatologists, Orthopaedicians and Paediatricians.
- 9) Company should chalk out make new strategies to deal with general physicians. They constitute a big segment as many doctors are general physicians. However, they do not have time to use computers and software based products
- 10) It is envisaged that around 24 % of doctors contacted would adopt IT for their clinics in the next 2 years. There is a great opportunity for XYZ Company to target them as a first mover.

## Limitations

- ♦ Research was limited to only Bangalore city
- ♦ XYZ Company is developing software only for doctors
- ♦ Not a time series study. It was done at a particular point of time
- ♦ Doctors were too busy, and sometimes gave limited information

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