

A Review on e-Healthcare System: Delhi NCR

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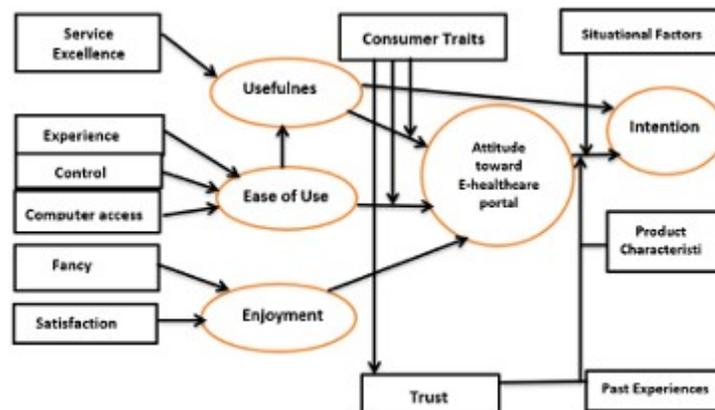
ABSTRACT

India is a country where medical needs are going to be increased day by day. e-Healthcare system is going to increase the efficiency of the healthcare system day by day. There are different types of e-Healthcare programmes going to be offered day by day. But on the other side it is also facing different types of problems day by day. To collect the data of the e-Healthcare system in my project I designed a questionnaire. It serves as the source of the primary data which is collected from the people who gave their answers in that questionnaire. Questions are both open & close ended. This questionnaire provides us the unique data which provides us the information regarding the e-Healthcare system in India. As a result, we collected the data from the persons who belong to the different cities & different regions of the Delhi NCR either they belong to the rural area or they belong to the urban areas. After collecting their answers, we get a unique data collaboration at one place which helps us to calculate about the trend of the e-Healthcare in the society. This project helps us to map the perception, attitude & satisfaction levels towards the trend of the e-Healthcare system. This data gives us the meaningful conclusion regarding the future of the Online Healthcare System in India. It will also help us identify that what improvements we need in our healthcare system to establish it as the well-established business in the Indian Society. This data also helps various organizations during their survey.

INTRODUCTION

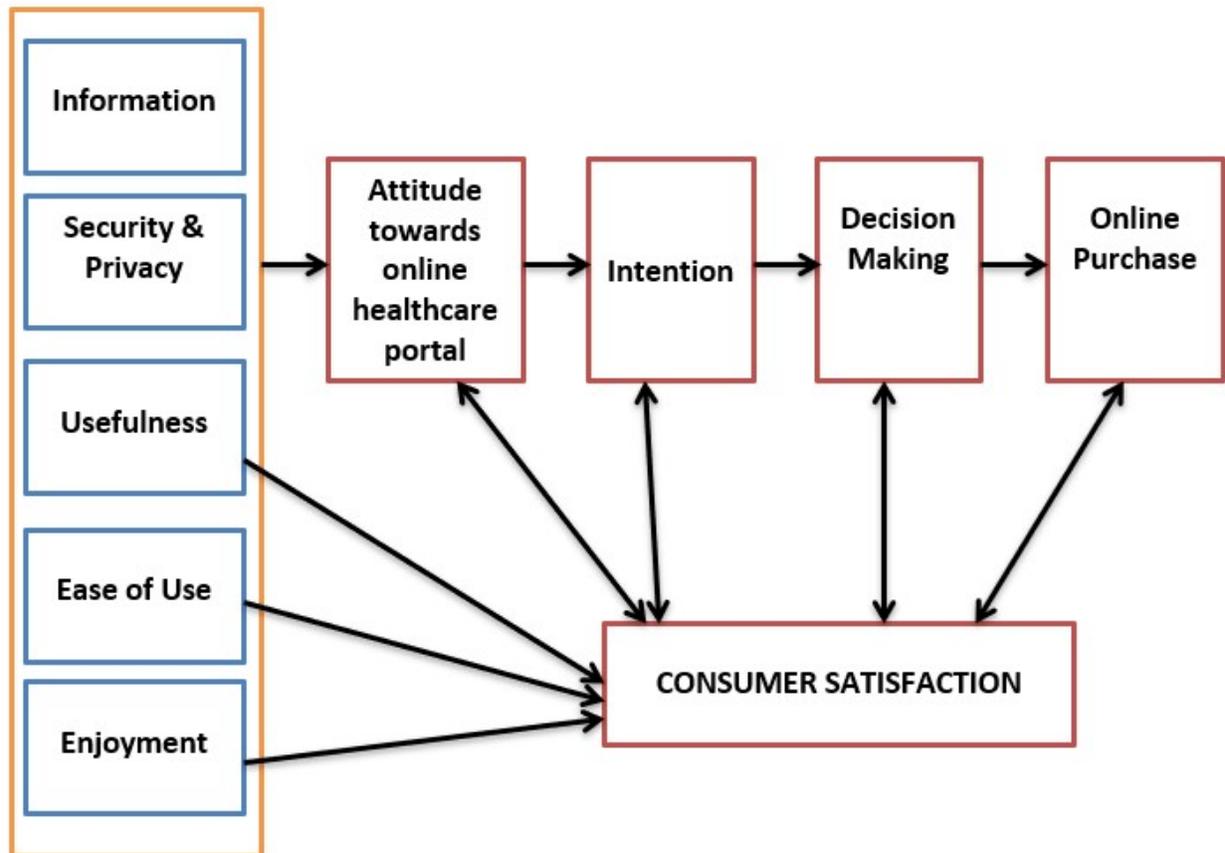
As the new millennium moves well into the second decade, marketing is turning out to be more challenging at the organization, state, national and international levels with new media, new technologies and greater complexities in satisfying a highly heterogeneous mix of consumers. Numerous organizations have involved themselves in creating marketing activities to satisfy the needs and wants of a different group of consumer segments. India is a vast country with complex socio-economic characteristics that are reflected in its medical systems. The concept of **market** is very essential in marketing. The American Marketing Association defines a market as the aggregate demand of the potential buyer for a product or services. A person who consumes products or avails services for personal use and

not for manufacturing or sale is a **consumer**. A consumer is somebody who takes the decision whether to buy or not is the customer. Thus, a customer is the target to be influenced by the marketing and advertising effort. **Online healthcare** portal broadens the target audience to men and women of all class. At first, the users are mainly young men with the knowledge of technology and students of colleges. Now the trend is changing. As the access to technology becomes easy and people becoming getting aware, the use of portals has increased. E-health tools are designed to improve health surveillance, health-system management, health education and clinical decision-making, and to support behavioural changes related to public-health priorities and disease management.^[1]



Flow Chart of Consumer intention to buy online

Customer satisfaction depends upon perceived performance and delivering value to consumer's expectations. If the service performance fails to fulfill the expectation of consumer, the buyer is dissatisfied. And if performance exceeds the expectation, the consumers are delighted. Satisfied consumers avail the service from the portal again and again and they do promotion by word of mouth about their experiences with the services. A good portal always focuses on delighting their consumer with their services and promises only what they can deliver to consumers. Consumer expectations are based on their past experiences, the option of the friends, marketers, competitor and promises. Marketers have to be careful to set the right level of expectations if low then they fail to attract more buyers. If they raise the expectation too high, buyers become disappointed. Today's most successful companies are delivering performance to match the expectation of consumer. Although, the consumer firm seeks to deliver consumer satisfied relative to competitors. They do not try to exceed consumer satisfaction. A company always increases the customer satisfaction by lowering the price or enhancing its services for consumers, but this may lead to lower profits. The marketer must have continued to generate more consumers' value and satisfaction but not give away the house.^[3]



Flow Chart of Consumer Satisfaction

Consumer Perception is a motive drive which influences behaviors in order to satisfy that need, i.e. the motive. Motivation provides a basic influence upon the buyer, while perception is operationally critical. A motive generates temperament to act. Perception triggers the behavior of consumer in a certain way. On the basis of past experience to perceive is to see, to hear, to touch, to smell and to sense something or relation and to organize, interpret and find meaning in the experience. For instance, the average Consumer may be exposed to 1500 ads during a day, however, he consciously perceives only about 75 of them and perhaps 12 of these could be related to his behavior. This consumer perception towards a product is what a consumer wants from services and what actually forces or drives them to go for a product or service. When it comes to influencing consumers to buy a product or service, their perception of the brand must be taken into account. This perception may vary based on the consumer or a certain demographic of consumer. Consumer perception can be developed from a variety of factors, such as their personal experience or how they have heard from other people experienced the product. The internet access has transformed how people experience services and builds their perceptions. Social media and review websites provide access to reviews and details that help consumers form their own perceptions about brands and their products.^[2]

"Consumer expectation" is defined as to the total perceived benefits a consumer expects from a company's product or service. If the actual experience consumer has with a product exceeds the expectation, they are typically satisfied and delighted. If the actual performance falls below the expectation, they are typically disappointed in portal. The main idea of online healthcare portal is not having good looking websites that could be listed in a lot of search engines and it is not about the creativity behind the website design. It is also not about to circulate information because it is all about creating relationships and generating money. (<https://core.ac.uk/download/pdf/6818994.pdf>) Marketing is mainly concerned with handling and transportation of goods from the point of production to the point of consumption.

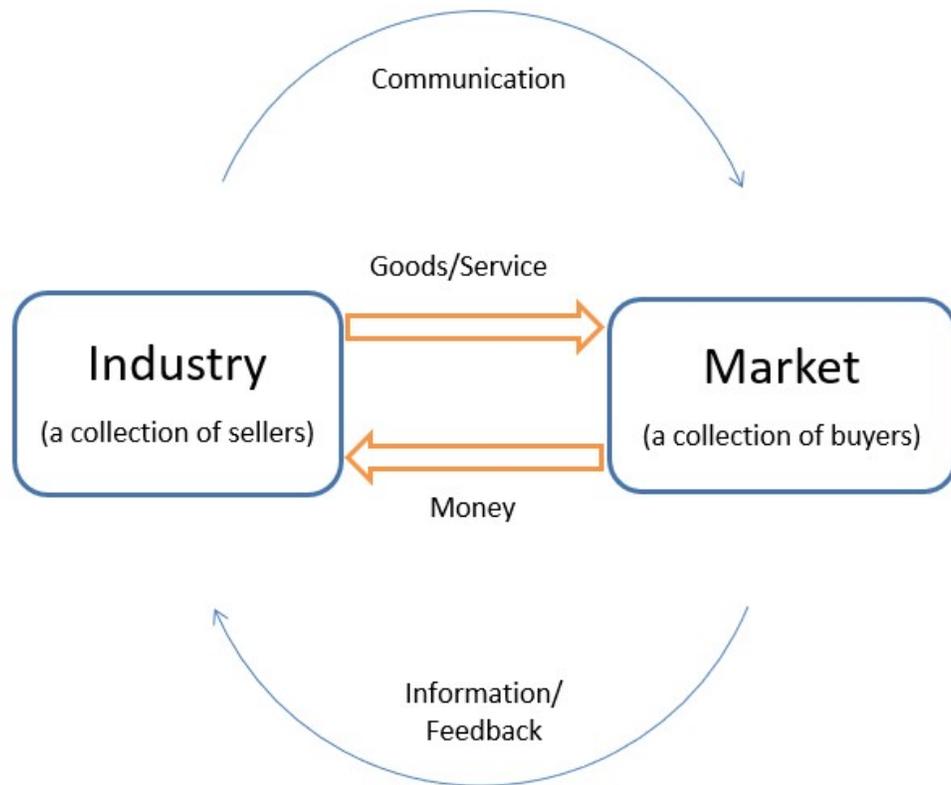


Figure: A Simple Marketing System

Online Healthcare Portals (E-Health)

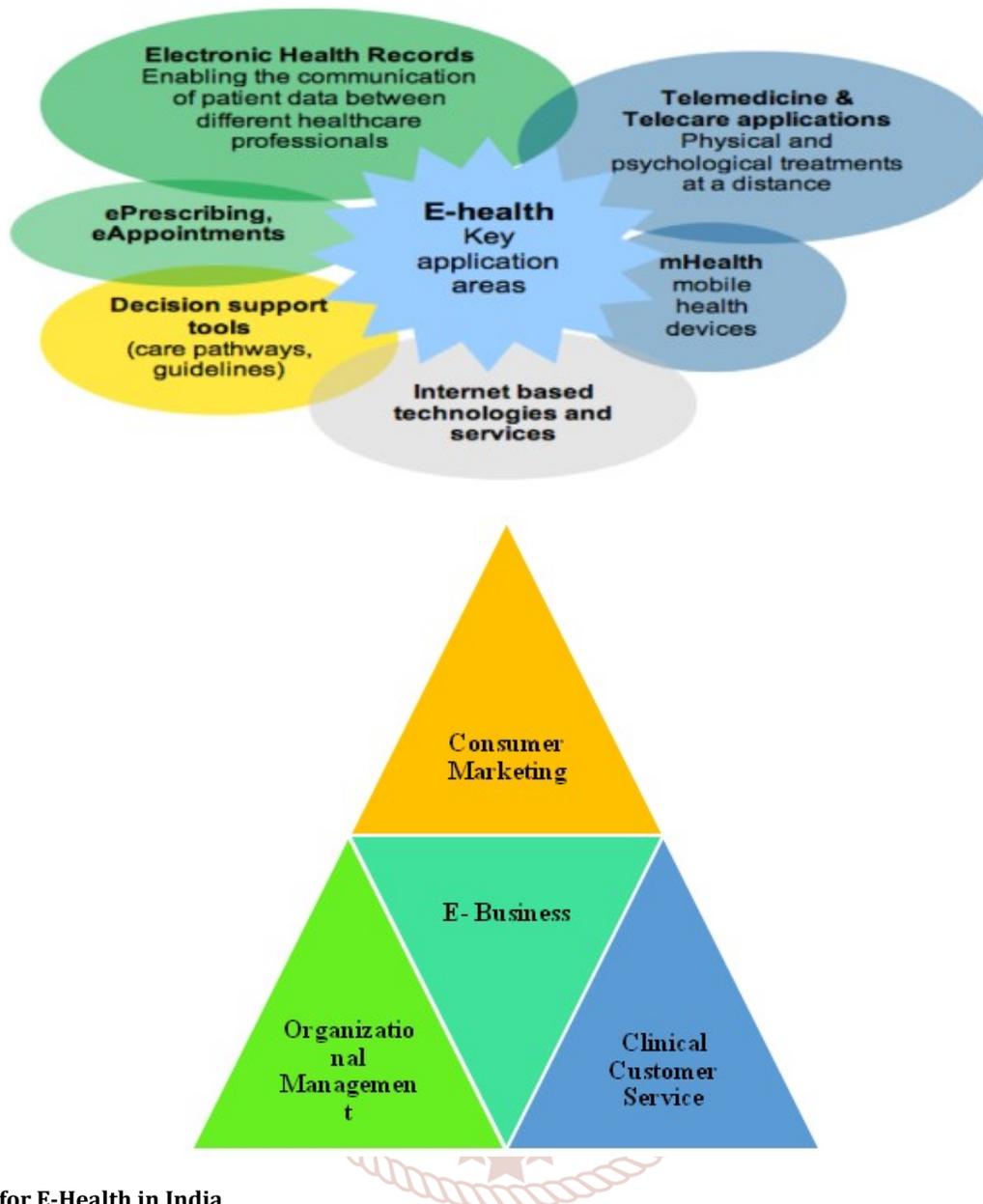
Nowadays, everybody talks about e-health, but few people have come up with a clear definition of this relatively new term. Barely in use before 1999, has this term now seemed to serve as a common "buzzword," used to characterize not only "Online Pharmacies", but also virtually everything related to computer technology and medicine. E-Health describes the application of information and communication technologies across the whole range of functions that affect the health care sector. The term eHealth encompasses a set of disparate concepts, including health, technology, and commerce. The term was apparently first used by industry pioneers and marketing people rather than academics. They created and used this term in line with other "e-words" such as e-commerce, e-business, e-solutions, and so on. In an attempt to carry the promises, principles, fervor (and hype) around e-commerce (electronic commerce) to the health arena, and to give an account of the new potential the Internet is opening up to the area of healthcare. Intel, for instance, referred to e-health as "a concerted effort undertaken by leaders in healthcare and hi-tech industries to fully harness the benefits available through concurrence of the Internet and health care." Because the Internet created new opportunities and challenges to the conventional healthcare information technology industry, the use of another term to address these issues seemed appropriate. These "new" challenges for the healthcare information technology industry were mainly:

1. The capacity of consumers to interface with their online systems (B2C = "business to consumer");
2. Improved potential outcomes for institution-to-institution transmissions of information (B2B = "business to business");
3. New potential outcomes for peer-to-peer communication of consumers (C2C = "consumer to consumer").

It appears quite clear that e-health encompasses more than a mere technological innovative development. I would define the term and concept as follows: E-healthcare is an emerging field in the intersection of medical informatics, people health and business, referring to health services and information delivered or conveyed through the Internet and related technologies advancements. In a more extensive sense, the term describes not only a technical development, but also a state-of-mind, a way of thinking, an attitude, and a commitment for networked, global thinking, to improve health care locally, territorially, and globally by using information and communication technology.

Four Areas of E-Health

E-business includes online acquisition processing between health care providers and suppliers, online electronic claims processing, eligibility authorization from insurance companies, and consumer purchase of prescription drugs and health insurance. **Consumer marketing** includes the use of Websites to display organizational information to attract new patients and provide information on wellness and disease-specific information to existing patients. **Organizational management** includes posting employee information on a company Internet Website, delivering programs related education, listing job announcements, and announcing employee health benefit programs. It also includes administrative processes such as billing management and strategic planning. **Clinical customer service** includes patient access to medical information via electronic health records (EHR) allowing them to conduct risk assessments of their own health and include patient-physician interaction using e-mail. E-mail communication can provide an opportunity for patients with Internet access to e-mail their queries and receive responses from their physicians. This form of electronic contact shows promise as a means of enhancing level of communication and facilitating interactions between patients and the healthcare delivery system.



Challenges for E-Health in India

The challenges for an efficient, sustainable E-Health system are numerous:

1. **Incentivisation:** Incentivizing all the stakeholders involved is a major challenge and raises the question of who will pay the bill since the cost of infrastructure, medical drugs, doctors' fees, and other operating costs could be very high. Hence, there is a need to divide these costs among different entities.
2. **Cost Containment:** Providing health care to India's population is costly, and introducing ICT would require extra upfront investment. There is a need to manage the costs in such a way that the overall cost of health care goes down. This could be achieved if the overall health care budget includes more money for ICT. An eHealth program would need to generate large numbers of beneficiaries for costs to be justified.
3. **Information Exchange:** Health information exchange needs to be demand driven, with proper access and control mechanisms in place. The challenge is to motivate and encourage key stakeholders—patients, medical service providers, insurance companies and the government—to pull as well as push the right kind of information from the system.
4. **Adoption and Resistance:** In India and across the globe, there is reluctance on the part of patients and doctors in fully adopting eHealth. The right kind of technology must be utilized in the right way so patients as well doctors feel comfortable in adopting eHealth practices. Companies not only have to prepare the best technical systems but also make sure that they are easy to understand and use. Success will require multiple public awareness programmers on the benefits of eHealth.
5. **Staffing at Different Levels:** eHealth is not just about having technology in place. It should also have an identifiable, approachable and well-qualified human interface. Getting the right people to use these technologies in order to provide proper health care services is very important. Hence, there is a need to hire the right people and train them properly so that they are well equipped to carry out the task of providing health care to remote areas.

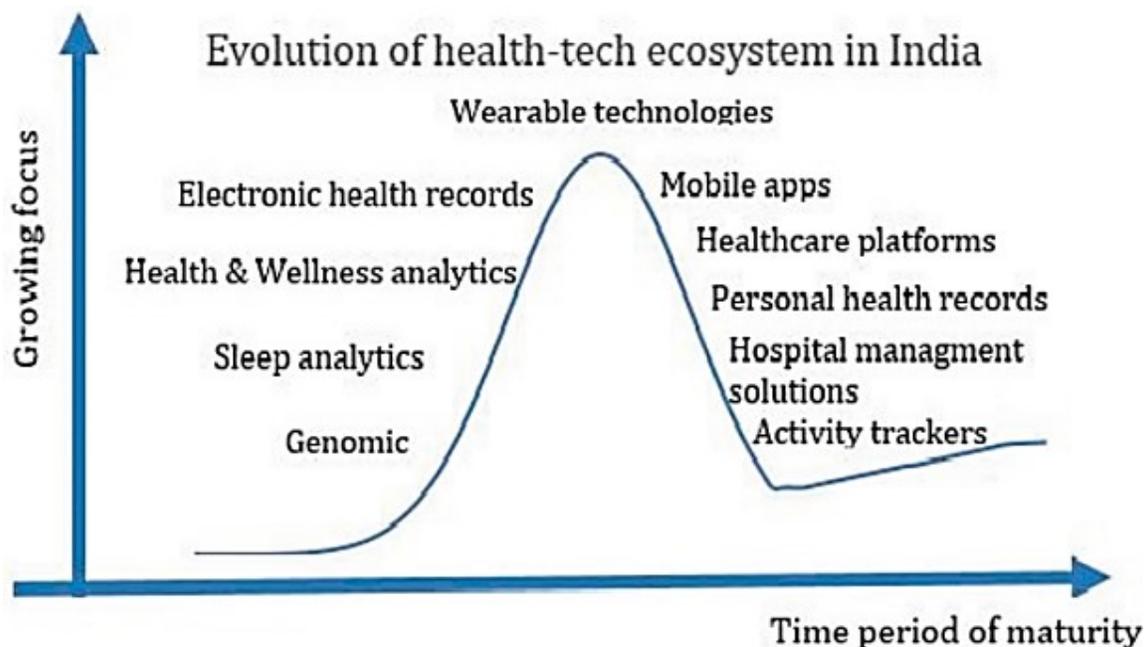
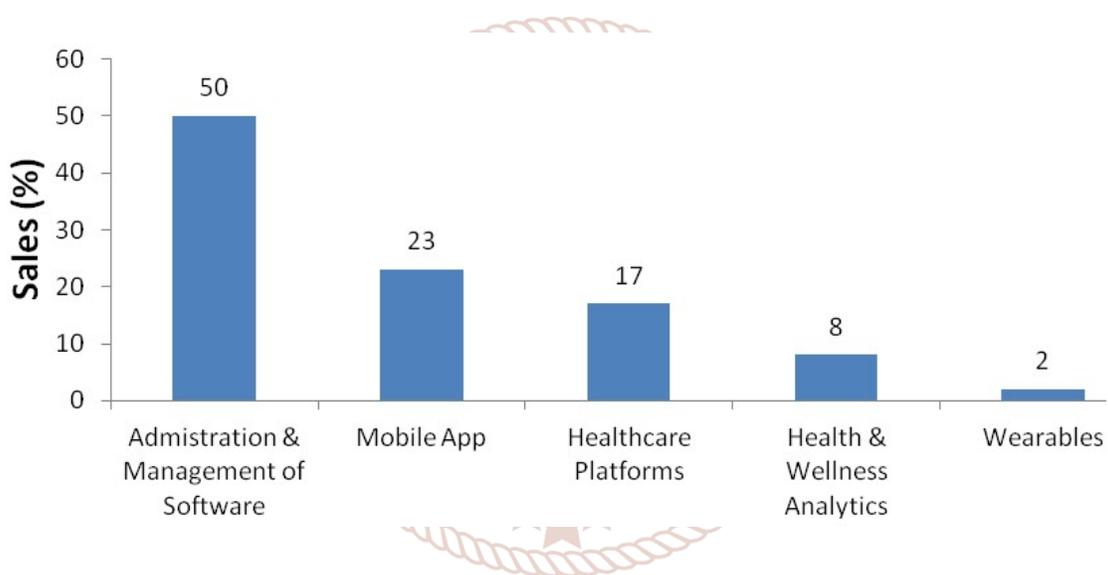
6. Evaluation: It is the processes needs to be fair and done by an independent third-party observer. There is a need for setting benchmarks in order to track progress. These could be taken from best practices from local projects or from notable projects in other countries such as Sweden, Singapore, etc. An independent body could be built for this purpose which would provide ratings. The resulting evaluation would provide a continuous learning loop which would also inform the eHealth framework itself.

7. Power Sharing: The entire system of health care should be such that it can be driven by both the government central and state. Power, responsibility, accountability, rewards and risks must be well defined in advance so as to avoid any conflict of interest.

8. Managing Information: The information collected should be media enrich (containing video, image, text, etc.). This information should be properly archived, accessible, retrievable, secure, and readable from remote locations using different technology platforms. "One patient, one record" needs to be implemented, so as to avoid duplication of information. Innovative and cost-effective health informatics solutions need to be created to meet this goal.

9. Education: e-Health is not just about providing health care service when someone is unwell, but it should also be used to promote preventive health care to improvise the standard of living and reduce health care costs in the medium-to-long term. This will also help in improving and enabling higher productivity elsewhere in society. But achieving this requires bringing people into the system and educating them about the different preventive measures to avoid disease outbreaks like H1N1, or other seasonal diseases.^[5]

Segmentation of companies in Indian health-tech market



The 10 essential E's in "E-health (Online Healthcare Platform)"

As such, the "E" in E-health does not only stand for "electronic," but implies a number of other "e's," which together perhaps best define what e-health is all about (or what it should be).

1. **Efficiency** - one of the promises of e-health is to enhance efficiency in health care, thereby diminishing costs. One possible way of diminishing costs would be by avoiding duplicity or unnecessary diagnostic or therapeutic interventions, through improved communication possibilities between healthcare foundations, and through patient engagement.
2. **Enhancing quality of care** - expanding effectiveness includes not only reducing costs, but at the mean time improving quality. E-health may improve the quality of health care for instance by permitting comparisons between different providers, involving consumers as additional power for quality assurance, and guiding patient streams to the best quality providers.
3. **Evidence based** - e-health interventions ought to be evidence-based in a sense that their effectiveness and efficiency should not be expected but demonstrated by rigorous scientific evaluation. Much work still must be done around there.
4. **Empowerment of consumers and patients** - by making the knowledge bases of medicine and personal electronic records accessible to consumers over the Internet, e-health opens new doors for patient-centered medicine, and empowers evidence-based patient choice.
5. **Encouragement**- of a new relationship between the patient and health professional, towards a genuine partnership, where decisions are made in a shared manner.
6. **Education**- of physicians through online sources (continuing medical education) and consumers (health education, tailored preventive data & information for consumers)
7. **Enabling** information exchange and communication in a standardized way between healthcare establishments.
8. **Extending** the scope of health care beyond its conventional boundaries. This is meant in both a topographical sense as well as in a conceptual sense. E-health empowers consumers to easily obtain health services online from worldwide providers. These services can range from simple advice to more complex interventions or products such a pharmaceuticals.
9. **Ethics** - e-health includes a new form of patient-physician interaction and poses new challenges and threats to ethical issues such as online professional practice, informed consent, privacy and equity issues.
10. **Equity** - to make healthcare services more equitable is one of the promises of e-health, but at the mean time there is a considerable threat that e-health may deepen the gap between the "wealthy" and "poor". People, who do not have the money, skills, and access to computers and networks, cannot use computers effectively. As a result, these patient populations (which would really profit the most from health

information) are those who are the least likely to benefit from advances in information technology, unless political measures ensure equitable access for all. The digital divide currently runs between rural vs. urban populations, rich vs. poor, young vs. old, male vs. female people, and between neglected/rare vs. common diseases.^[8]

Pros and Cons of Online Healthcare (E-Health)

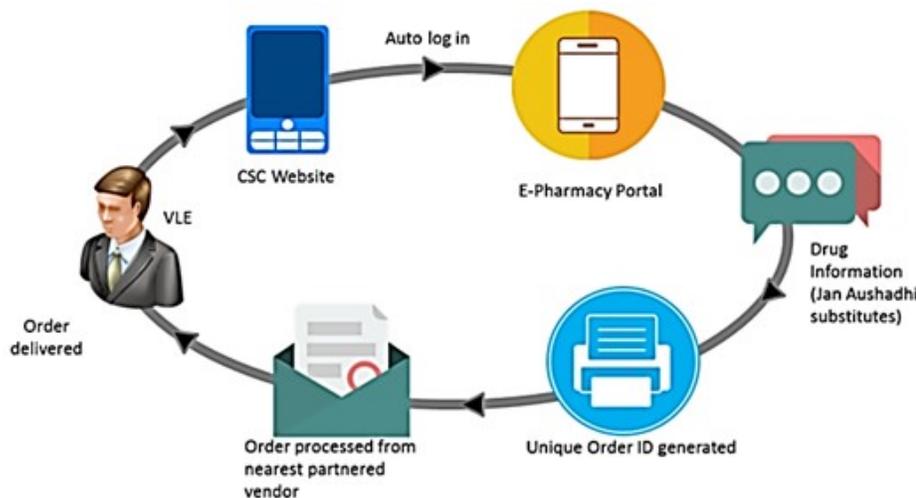
E-Health aids overstretched health framework in accomplishing efficiencies and cost reductions in the allocation of staff and resources but it can also, as the report contends, enhance the quality of service and provide more prominent equity in patients' access to care, with patients who may already have had difficulty issues with a doctor face-to-face now able to receive care in their home or community at the time that suits them. Categories of eHealth incorporate virtual health (v-Health), in which health care providers work together and deliver health care services remotely, and mobile health (m-Health), where patients themselves can access services remotely by using a wireless network through the standard functions of their device or through a specially designed mobile application. The most exciting and useful opportunities eHealth technologies advancement offer medical professionals are in the territories of communication and data collection. Tablets and smartphones double as medical monitoring gadgets as well as tools for sharing information. Video conferencing is used for both collaborative meetings and data or information collection. Always connected to their hospital's information or date base systems, health care professionals are able to consult and exchange data or information at their point of need. The issues which emerge for all information systems regarding the security of data, data integrity and privacy are particularly acute in the case of intense medical information. Nevertheless, these issues do not appear to be a deterrent to many prospective patients. Although the study found that few respondents had utilized v-Health or m-Health services, there was solid enthusiasm in accessing these online services when they become more available, particularly for other people in the respondents' care. In addition, the overwhelming majority of respondents were willing to utilize email for non-urgent issues, for example, prescription refilling, their confidence bolstered by a secure system and a record of the communications. As the study points out, similar services already exist in the US, where they have diminished visits to the doctor by 25% and doctors report that patients develop more prominent trust in practices willing to employ the new technology innovation. The concept of v-Health or m-Health and then posed a series of scenarios to see if concrete details would dampen the enthusiasm. In spite of the fact that the majority of respondents were willing to utilize the services described, they were "cautiously optimistic", their main concerns being the quality of care and privacy. There was also significant concern about losing an individual relationship with a doctor, keeping the framework secure and about the potential for patient abuse in the case of online prescription renewals. The biggest hurdle to e-Health is the difficulty for consumers to find accurate and reliable information or data. The two critical indicators of e-Health, quality of information are source credibility and information completeness. According to Medical experts' suggestion, health information provided by a source that is not credible is detrimental to consumer outcomes. Also, unless health data or information is complete, it is likely to mislead the consumer into making incorrect decisions. The completeness of health information

is only considered the single most important criterion in healthcare decision making. The most vulnerable people in our society may be the least able to get benefited from e-Health because of cognitive, social, and cultural hurdles. These hurdles include literacy level, cultural differences, language differences, access to technology and educational deficiencies. Only through conscious efforts to address these barriers, e-Health initiatives can be expanded to meet a broad range of society's need and want.^{[6][7]}

Online Pharmacy (E-Pharmacy)

Online pharmacies in India have impressively improved due to growing E-commerce in India. An online pharmacy is an Internet-based retailer of prescription drugs, and the term encompasses both legitimate and illegitimate pharmacies.

Online pharmacies have been tremendously increasing in India, with the rise attributed to little regulation of the industry. Online Pharmacies available in India are Netmeds.com, 1mg.com, mChemist.com, Merapharmacy.com, Medplusmart.com, Careongo.com, and Buydrug.in etc. Online shopping for medicines or health products is the latest phenomenon in Indian e-commerce. E-commerce is gradually revolutionizing the healthcare industry trends of India to transform the way we purchase medicines, herbal products and fitness devices for the better health. Existing pharmacists or pharmaceutical companies are going online or internet based with their merchandise for sale and offline delivery, while existing or upcoming startups with innovative business models are entering the online pharmacy (E-Pharmacy) marketplace in India.^[10]



Source: Frost & Sullivan

E-Pharmacy Model

Research Methodology

A structured questionnaire was used to collect the data. It serves as primary data to answer the research questions and objectives pertaining to online healthcare portals in India. The survey consists of distinct sections, each of which contains questions pertaining to different parts of the study. In view of time and cost constraints as well as the large population of Internet users in the country, convenience sampling was used to collect data from the current Internet users in India. Even though the sampling method adopted has limitations in terms of generalizability compared to other sampling methods, it is assumed that the sample represents the whole population of internet users in India. The survey was conducted via email and social networks. This survey questionnaire was emailed and shared link to internet users who agreed to participate in the survey. This step was taken to avoid to complain from other internet users and also to increase the responsiveness from the respondents for the survey. Questions are open and close ended will provide valuable information for the study so that a better understanding of online healthcare portals in India can be achieved.

Suggestions

The following suggestions can be put forward based on this project:

1. Businesses should consider online marketing and promotion as a key business tool in coming times.

Deeper penetration of broadband services, smartphones and a higher level of literacy is expected to significantly boost online business in the near future.

2. Strong product and service branding on the internet can provide marketers with a powerful and less expensive advertising option.
3. Advertising has to be more appealing and target specific. This could be achieved when the advertisements have virtual reality.
4. A perceptual mapping of consumer's needs and preferences in an online healthcare portal should be done in order to fill gaps that exist in current portals
5. An awareness program on the use of internet and its multifarious application could increase the usability in the field of healthcare.
6. There is a significant scope to make the tools more user friendly and have provision for online chat for solving customer queries on a real time basis. Future start-ups may also focus on this aspect and improve customer satisfaction.
7. Healthcare portals should have an easy switch-off option for the significant number of consumers who are averse to automated mails so that they can be given an option to stop receiving such mails.
8. The software design for online healthcare portals needs to be such that system management and also system use are fairly simple processes that can readily be grasped by non-technical health professionals.

9. Government should establish consumer protection machinery to monitor Internet purchasing which could enhance the buyers' confidence in online availing the healthcare services and products.

Conclusion

This project was conducted with the primary objective to map the consumers' perception, attitude and satisfaction levels towards online healthcare portals. Based on this information, a sincere effort has been made to draw a meaningful conclusions that would help future online healthcare businesses. Internet today is viewed as a user-friendly medium for communication and information search. Internet or digitalization, as a marketing tool, has opened up new doors to many companies or startups to conduct business, trade shows, market research, advertising and many more with worldwide acceptance and distribution. With a rapidly growing access to the broadband internet services, there's a progressive increase in its awareness and usage levels across all segments of the society, be it students, employees, businessmen or professionals, or homemakers. In this regard it would be right to infer that the new millennium is sure to herald a boom in the internet, thus making internet an intergral part of the normal life. Increasing literacy rates, especially in rural India, and growing access to smartphones have also accelerated the use of the internet in all walks of life. This augers well also for the online healthcare portals provided the service providers are well geared to handle the substantial increase in 'traffic' to maintain highly efficient service levels. There is a promising future waiting for both the marketers and the consumers at large in the online healthcare market as well as in other sectors which harness the virtues of online marketing. Consumerism is the watchword now a days and awareness of consumers have reached new heights. This makes the consumer more vigilant in making purchases. There is also a disadvantage on the part of online purchasing as the internet lacks consumerism which has brought an unfavorable attitude in the general public, who doubt the safety and quality assurance of the product purchased. This aspect needs to be addressed in order to raise the online shopping experience of consumers. Indian startup companies and global companies have tried to advertise over the internet. In general it could be stated that advertisements over the internet do not correlate themselves with the consumers' psychology. A better visual impact could bring a revolutionary effect in the advertisement on the internet. This could take time as more and more people get hooked to computers and smartphones as an alternative medium for entertainment. In spite of all these short comings, startups have taken giant strides in harnessing the internet market in the health sector. Government's plan in making digital India also helps the marketers to launch online portals. In due course of time with this transition process, marketing through internet would turn into an advantage, making way for the Indian startups companies to successfully compete with the offline healthcare market as well as with the global market. A majority of consumers who have purchased from online portals are satisfied with the services and products. It is going to take some time for this whole system of online healthcare portals to come into regular practice of consumers. Education and literacy are dominant factors in India that would determine penetration of internet, computers and smartphones – the prerequisites of online

marketing. In India, the offline mode or traditional means is still preferred by consumers to buy their products and for them to change is going to take a few years. However, a category of people, especially the young and computer savy, have already made this transition. Companies like 1mg, Netmeds, Practo, WebMD, Lybrate, Bookmeds etc. are working efficiently towards winning the confidence of the consumers and increasing their customer base. There is a very bright future for online healthcare portals.

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