
UNIT 2 INTERNET RESEARCH TRADITIONS

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2.0 INTRODUCTION

In the previous Unit, we discussed the generic overview of the Internet or online research. This Unit continues that by covering the actual academic activities/practices and traditions of Internet/Online research in the recent past.

This Unit will introduce you to the vast and unprecedented field of Internet research. Starting by establishing its origins, we will cover various aspects of study while studying the Internet. Moving forward, we will discuss the multiple paradigms covered by the broad discipline of Internet research. Next, you will be presented with traditions and practices adopted by researchers in different phases of the research in this field. We will also discuss different methods to study the Internet over the years. You will also learn to appreciate factors influencing the Internet and those which are, in

turn, affected by it. Lastly, discussing the vistas opened by the discipline, from psychology to governance to education and even health, we will try to chart its boundaries.

2.1 LEARNING OUTCOMES

After completing this Unit, you should be able to:

- Describe various paradigms covered by Internet Research;
- Identify traditions and practices in different phases of Internet Research;
- Evaluate different methods adopted for Internet Research; and
- Recognise factors influencing the Internet and vice versa.

2.2 STUDYING THE INTERNET

The Internet is simply understood as a global network of connected computer systems that can communicate. Over 5 billion people worldwide, an estimated 65 per cent of the current world population, are using the Internet. The uses range from tasks related to everyday life to researching and contributing to local and global issues. The Internet has not only expanded geographically, but it has also penetrated the social strata of society, making the user base a vast and heterogeneous body. The diversity in usage patterns, user base and applications has led to the emergence of several issues for inventors, users, and researchers alike. These issues range from privacy concerns, the digital divide and the quality of content being hosted online.

The Internet emerges not only as a subject but also as a tool for research and a larger social phenomenon affecting many walks of academia. Internet studies is a comprehensive field of study that encompasses all issues pertaining to the Internet, be it its design, its use, or its impacts on various segments of society. Internet Research Traditions pertain to the methods acquired and applied by scholars to study the Internet. But what do we exactly study when we study the Internet?

2.2.1 Categories of Internet Research

Recall your Internet usage since this morning. How many apps have you accessed, how many social media profiles have you checked? How much content have you consumed, be it checking the weather update, watching an episode of your favourite show, or searching for your favourite recipe? This brings us to the question - what do you exactly study when you study the Internet? Is it the content? Is it the user? Is it the traffic on a webpage? As a user, you do not have access to a lot of data, like the code and the traffic analytics of websites. The amount of accessible data is also vast. For example, social media platforms generate content in uncountable numbers and create billions of comments every day. So, how does one even start quantifying the units of study?

Internet Researchers have explored varied topics to study, analyse, understand, and define. These range from qualitative aspects to quantitative as well. They can be broadly divided into the following categories:

1. **Technology:** The Internet is a technological innovation first and makes use of technology furthermore in designing the websites, browsers, networks, applications and even infrastructure of the World Wide Web. Marshall McLuhan has famously said, "Medium is the message", and being technologically driven, innovations for the Internet are also tied with technological innovations. This is why the Internet of Things, Artificial Intelligence and Virtual Reality are currently emerging as hotcakes in Internet research. Thus, researchers studying technology can observe how it is evolving and affecting the structure and applicability of the Internet.
2. **Usage:** The applicability of the technology emerges as the second research category. The Internet has found several ways to reach the public, from ICT (Information and Communication Technologies) to social media to e-commerce. In a networked society, the offline and online populations become the same, thus diversifying usage. On the other hand, unlike researchers of different mass media, Internet researchers acknowledge that the audience on the web is not just a consumer but a producer. Thus, the researchers examining the web usage would explore the user base and the content being hosted and consumed on the web. This can encompass qualitative and quantitative study methods as well.
3. **Policy:** As Internet penetration and its usage increase, it becomes necessary to streamline and monitor it. Without central governance, Internet policies face difficulty in formulation and application. Policy research focuses on how technology governs human interaction and, in turn, affects national and international information infrastructures. The researchers of the Internet policy analyse the existing guidelines and framework regarding Internet usage, suggest future courses for policymakers, and conclude their research.
4. **Impact:** Overlapping with the field of psychology and sociology, the researchers of this paradigm study the effects of Internet usage on individuals and groups. Whether through online education or e-commerce, apart from creating new virtual avenues for communication, the Internet also modifies human interaction in the offline world. Several disciplines associated with the study of humans have started acknowledging the Internet as a catalyst in human development and are probing into this further.

Emerging as a multidisciplinary field, Internet Research broadly adheres to these four categories. The research methods and theoretical frameworks have also been derived from the disciplines. For a long time, the Internet was termed and treated as 'New' media, and thus, the dichotomy between old and new media existed for researchers. Today, the line has been erased as the Internet generates its own line of methods, theories, sampling techniques and theoretical frameworks.

2.2.2 Characteristics of the Web

While charting a journey to study the web, there is a need to distinguish the fundamental qualities that make it different from any other traditional

communication media format. Following are a few characteristics of the web that make studying it more challenging and unprecedented for Internet scholars:

Intertextuality: While reading a book, you might have got stuck on a word naming a phenomenon. You would have wondered about it and then proceeded with the text with a mental note to check more about it later. Later, you might have even forgotten about it, but knowing it at the time you came across it would have also added to your reading. On the web, jumping to a subtopic and returning within a short time is easier. Think of having a dictionary or encyclopaedia on the side, open at the right page all the time.

The text on the web is interconnected with the sub-topics it holds; it does not exist in isolation. Think of a tree branching out to meet other trees. Hyperlinks connect the topics with each other, sometimes leading to a section on the same page or sometimes to a different page altogether. These links allow the reader to jump to any definitions, explanations, and data verification and then return to the topic immediately. This enriches the reading and allows the reader to branch out as per their own interests.

Nonlinearity: The traditional text layout is linear and has a specific beginning and end. Look at the example of this Unit; while you may choose to skip the beginning or start from the end, it has been designed to be read in the direction of beginning to the end. Compared to this, the text on the web is non-linear, and the reader can jump through the hypertexts, as discussed earlier.

The function of nonlinearity allows the reader to go as deep into the text as they want, thus making the reading process highly subjective. The reader may also choose to continue reading the text further from different sources for as long as possible. In this case, the text becomes endless and depthless. This feature implies that each reader on the web will derive a different meaning from the same text.

Prosumerism: Traditionally speaking, the reader has remained at the receiving end of the content, rendering them passive. Look at this Unit again; the writer wrote it sometime back, and you are reading it today. We may not have any other communication apart from this text. You do not have a way to reach out to me to share your feedback or ask any questions. Some methods may have feedback options, like classroom teaching, writing a letter or a telephonic conversation. Feedback from the audience is also a relatively new concept in communication studies.

In the case of the web, the reader can get in touch with the writer, edit the existing text or even create their own text. He or she may also dissect it and disagree with it. You might have seen fan-made trailers of films or have read fan fiction. Wikipedia is editable, and the readers can alter the text. This feature of the web not only raises questions about the responsibility of the reader but also about the text's credibility. On the other hand, prosumerism also helps establish the Internet as a medium, breaking away from the hegemony of mainstream media by challenging the traditional producer-consumer hierarchy and establishing the Internet as an alternate medium.

These are a few of the features of the Internet that affect how scholars study it.

2.2.3 Issues and Concerns

Like any other field of study, the Internet has issues and concerns about research. Let us discuss a few of them in detail:

1. **Digital Divide:** While increasing daily, Internet access is still not available to all populations in the world. Many researchers, specifically in third-world countries, struggle with limited Internet access. Their research also does not garner as much exposure, thus tying the fulcrum in favour of the Western lens and literature in research. This disparity further causes an imbalance and bias in data, affecting the research conclusions.
2. **Sampling:** Content worth more than 320 Million TB of data is generated daily on the Internet. Vast swathes of the population are active on the web daily, in varying degrees and for multiple purposes. With a vast universe of research, sampling can be problematic for researchers. Identifying not only a representative number but also a sample representative of the vast body is a task in itself.
3. **Reliability and validity:** In offline research, data reliability and validity can be assessed using multiple tools. But on the web, one does not have a fool proof method to verify whether they are interacting with a bot or a human being across any platform. Similarly, concerns with individuals' identities and the validity of data obtained are major issues for Internet researchers.
4. **The impermanence of the text:** As readers can also alter the text to innumerable iterations, studying the text becomes difficult, if not obsolete. The text on the web can be edited and, at times, completely removed. The data on the web is dynamic, so the same test can yield different results every time it is run.
5. **Security concerns:** Internet researchers must also tackle cyber threats and other cyber security issues, such as hacking, phishing, etc. while conducting the research. If mishandled, the data gathered for the study can be accessed without authority and pose severe threats to all parties involved.
6. **Ethical concerns:** The researchers also struggle to distinguish between personal and public online. Accessing and using data for research can breach an individual's privacy, while informed consent can be difficult to obtain from a large sample. One may also get entrapped in legal issues if one is not careful about copyright laws and intellectual property rights.

Activity: 1

Chart the Internet usage of your family members. What purpose do they use the Internet for? How long are they exposed to it? What devices do they use to log into the Internet? Do you see any patterns in your records based on age, gender, or employment?

Check Your Progress: 1

Note: 1) Use the space below for your answers.
2) Compare your answers with those given at the end of this Unit.

1. How are Internet research topics categorised?
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2. What are a few ethical concerns related to Internet Research?
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2.3 PHASES OF INTERNET RESEARCH

Although predated by the actual Internet itself, Internet research began when researchers started exploring or discovering it. The field, now well established, can be divided into broad chronological phases. The phases rolled out with the development of the Internet, its increasing usage and resulting critical analysis by the researchers, which has helped tremendously in further development. This pattern highlights the circular relationship between the developer, the user, and the researcher.

While academia has had the task of researching appropriate subjects at the needed time, the Internet has made access to research possible across the globe, thus accelerating it. As discussed earlier, the Internet has emerged as an object of study and a tool, archive, and publisher. But this has not happened overnight; it has taken decades and can be categorised now in hindsight. The four phases of Internet Research can be broadly categorised in the following manner:

2.3.1 Technical Issues with the Internet

As the Internet was in its infancy, the first phase of Internet research dealt with philosophical and technical issues. One school of thought that emerged analysed the Internet as a stand-alone invention and studied its phenomenon in isolation. This school believes the Internet will/is cutting off humans from society. In a highly dystopian approach, the researchers in this group thought that the Internet would cut off civilisations from each other. This group of researchers exists even to date.

Another significant perspective that emerged was looking at the Internet as a continuum with society, as with any other scientific invention and its application. The researchers of this group analysed the functions and services provided by the Internet and how they compared with other media and communication platforms. The researchers approached the Internet as a tool and looked for ways to sharpen it for better use. The extreme ideological perspective of this group believed that the Internet would create a super smooth network across the globe, connecting all citizens and empowering all sections of society.

Still an invention, the majority of the research in this phase explored the scientific and technical issues emerging. Connectivity, speed, communication technologies, data archival, and access were the first popular subjects of research, focusing on the functionality of the World Wide Web. Due to its utility, a major focus was also laid on the economic repercussions of the Internet in the workplace or commercial sectors. This phase rolled into the second phase as the focus shifted to utility from mere function.

2.3.2 Uses and Users of the Internet

The next phase of Internet research explored various Internet applications and how users interacted with them. The academia had accepted and experimented with the Internet as the browsers had made it easy for the general user to access it, and websites became navigable for laymen. Marketing firms became the first organisations to study the consumer base of Internet platforms to suit their purpose. User perceptions and attitudes were surveyed with the help of questionnaires and explored with the help of interviews and focus group discussions held online and offline for triangulation. This phase also saw collaborations between social and computer scientists.

Comparing the differences between the demographics of offline and online populations, these studies worked out the usage patterns and traffic on the web. This helped identify the socioeconomic strata on the web and thus quantify the penetration of the Internet. This phase also helped reduce the gap between the utopian and dystopian views adopted by the scholars in the first phase. While the world has become a global village, scholars have worked on the idea that equality and equity are still long-term targets.

2.3.3 Effects of the Internet

As the Internet progressed from a novel invention to a utility for the masses, the research focus also shifted from merely studying the Internet as a phenomenon to studying its impact. Its involvement in daily life had increased manifold, and the transformation of users from consumers to prosumers was initiated in this phase. Many interdisciplinary researchers had forayed into Internet research by this time, enriching it with theories, methods, and literature from their respective disciplines.

The Internet's various psychological, sociological, economic, and political impacts were studied during this time. With social networking, online communities have started mushrooming. The online and offline personas

were bifurcated and provided material to study for the researchers. Online communities started formulating cultural practices, while psychographics tracking helped predict online behaviours. From political parties holding election campaigns online to e-commerce, entire countries and economies began running with the help of the Internet. This research phase is still on the rise in third-world economies as more and more disciplines are associated with the Internet. A more considerable discipline of Digital Humanities uses Internet penetration and other digital tools in the humanities paradigm.

2.3.4 Future Improvements

In the running phase, academia has moved forward from accepting, exploring, and studying the Internet. Researchers are now exploring ways to incorporate the Internet into their disciplines while suggesting ways to improve existing applications. Various concepts and models related to the Internet, directly or indirectly, are structured and defined. Newer technological developments such as augmented and virtual reality, machine learning, and artificial intelligence have paved the way for future research. As the world finally becomes a global village with comparable offline and online populations, cultural exchange and knowledge sharing globally becomes a thing of discussion. The research lens shifts to a critical analysis of the Internet and its applications, and the fulcrum shifts to refining its scope for better applications and usage. The future will tell what this phase of research summarises.

Activity: 2

Consider the four phases of Internet research. Which one do you most relate to? Do you believe in the dystopian view or the utopian one? What phase of research do you relate to most?

Check Your Progress: 2

Note: 1) Use the space below for your answers.

2) Compare your answers with those given at the end of this Unit.

1. What are the four phases of Internet Research?

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2. What were the utopian and dystopian views in the initial Internet Research?

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2.4 INTERNET RESEARCH METHODOLOGIES

Due to the vastness of the subject, the researchers have devised and employed many methodologies for the study of the Internet. Few methods have been adapted from offline research methods already in practice, while few have been designed specifically for the web. Let us discuss a few of them in brief:

2.4.1 Online Surveys

Akin to the offline format, online surveys make use of a questionnaire distributed amongst the targeted sample to extract specific information. The questionnaires are created in the form of a digital form, which can be easily circulated using Internet-based communication tools such as mail, social networks, etc. The answers gathered through it can also be automatically coded in desired formats, saving labour on the part of the researcher. Targeting the sample online also makes it easier to reach people even in remote locations as well, saving the researcher the effort of travelling as well.

2.4.2 Online Interviews

Online interviews are conducted using digital tools in an online space. The interviewer and interviewee meet virtually via telephonic tools, text-based chat, or video calling. In theory, these interviews are like the offline counterparts only, but they have the opinion of being recorded. Moreover, these interviews are conducted without either of the parties moving outside their comfort zones.

2.4.3 Web Content Analysis

As discussed before, the content on the web ranges from text to images to graphics and even audio and video. This content is extracted, sampled, and studied extensively by researchers using this method. In the initial days of Internet research, the researchers used to code the content manually. With the advancement in research tools, automated programs today can extract and code the content for easier analysis.

2.4.4 Social Network Analysis

This methodology studies the relationships and interactions between individuals or groups within social networks. A sociogram is used to depict the connections between people, represented through nodes and the connections are depicted through routes. These diagrams help the researchers identify the information flow and study the community's anchor points. This further helps identify the opinion leaders in the group and checks how information can be filtered and disseminated.

2.4.5 Digital Ethnography

This studies online populations aggregating in an online group or platform. The virtual group usually starts cultivating its values and traditions, becoming a subject for observation and study. Like offline ethnography, the researchers join a community, observe their traditions and practices, and develop a 'thick description' of the group, albeit in the virtual space.

2.4.6 Data Analytics

This method extracts data sets and employs algorithms and statistics to analyse them. The data could range from user profiles on a web page to traffic patterns. The analysis helps identify emerging patterns and generate insights within the data for practical applicability. The data sets are usually large, ranging in millions and billions, thus called 'Big Data'.

2.4.7 Online Experiments

Experiments are methods of research where a group of participants are studied before and after introducing a stimulus. They begin with a hypothesis, and the procedure helps prove or disprove the hypothesis. In an online format, the researcher changes the variables on a particular platform for a specific group, and the impact is studied to conclude.

These are a few of the research methods employed to study the Internet. Researchers often combine these methods to approach complex problems, uncharted territories, and new research paradigms. The choice of method also depends upon the objective of the research, the target sample, and the availability of resources.

Activity: 3

You may remember filling out an online consumer survey for a brand. What sort of questions do they ask? What do you think they do with the data? How do you think the brand benefits from this research? Would you be more comfortable if a representative came to your house to ask these questions?

2.5 THEORISING THE INTERNET

Internet Studies have not emerged as a school of thought, or an academic discipline structured under institutional boundaries. It has emerged organically as individuals across the globe started working on it simultaneously. This is why the research literature overlaps and is ambiguous, as many terms remain differently defined by scholars. For e.g., Online Ethnography is also known as Cyber Ethnography, Virtual Ethnography and even Netnography, all of which refer to the study of communities in an online sphere.

Starting as a network to facilitate the military, the Internet became a research-worthy subject due to its expansion, penetration, and popularity. Email changed the landscape of human communication, catalysed further by social media platforms. The Internet of Things has further connected machines and humans, blurring the boundaries between man and data.

AoIR, or Association of Internet Researchers, is one of its first kinds. It is an early association of researchers that was gathered with the help of a mailing list. Its first congregation is associated with the formal emergence of Internet Studies as a discipline, although the Internet predates it by decades. While some believe that Internet studies are an overlap of many fields and not a

field in itself, others believe that it has fragmented and differentiated itself, such as communication researchers differentiated themselves from sociology. Many scientific and peer-reviewed journals also started being published during the 2000s to facilitate Internet research in academia.

As the psychographics of the users are mapped to feed into the algorithm and change the landscape of the Internet for each user, the fact remains that the Internet is customisable and thus appears different for everybody. It becomes even more difficult to universally document something that can be labelled as a 'shapeshifter' at best. Echo chambers not only exist for Internet users but also for researchers, for the Internet is not just a subject but a popular medium for conducting research.

Check Your Progress: 3

Note: 1) Use the space below for your answers.

2) Compare your answers with those given at the end of this Unit.

1. What are different methods of research on the Internet?

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2. What is AoIR, and what is its importance?

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2.6 LET US SUM UP

In this Unit, you were introduced to the discipline of Internet research, starting from its origins to exploring various study topics under its aegis. We discussed various phases of Internet research and their different traditions. We further explored various methods of research that have been adapted for the Internet and discussed various issues and concerns that arise while studying it. Lastly, we identified factors influencing the Internet and those governed by it.

2.7 KEYWORDS

Avatar: Visual identifiers of the individual identity in the digital world. Based on the idea of changing shape and identity as in Hindu mythology.

Chatbot: A pre-programmed software that can emulate a human conversation.

Cyberculture: Practices and traditions developing in a community congregating on the Internet using digital tools.

Emoticon: It is an icon which conveys a particular emotion. Used in text-based chatting on digital platforms.

Netiquette – A set of guidelines for online behaviour.

2.8 FURTHER READINGS

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2.9 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Check Your Progress: 1

1. Internet research is broadly categorised into the following segments:
 - a. The technology used for the Internet
 - b. Usage of Internet
 - c. Policies for Internet
 - d. Impact of Internet
2. Internet research has several ethical concerns. First, researchers struggle to draw a line between personal and public on Internet platforms. Accessing and using data for research can breach an individual's privacy, while informed consent can be difficult to obtain from a large sample. One may also get entrapped in legal issues if one is not careful about copyright laws and intellectual property rights.

Check Your Progress: 2

1. The four phases of Internet research are:
 - a. Technical Issues with Internet
 - b. Uses and Users of Internet
 - c. Effects of Internet
 - d. Future Improvements
2. The ideological perspective of Internet research believed that the Internet would connect a super smooth network across the globe and would empower all sections of society. On the contrary, the researchers with the dystopian approach believed that the Internet would cut off civilisations from each other.

Check Your Progress: 3

1. There are many ways to research on the Internet. A few of the following are Online Surveys, Online Interviews, Web Content Analysis, Social Network Analysis, Digital Ethnography, Data Analytics, and Online Experiments.
2. AoIR, or Association of Internet Researchers, is one of its first kinds. It is an early association of researchers that was gathered with the help of a mailing list. Its first congregation is associated with the emergence of Internet Studies, although the Internet itself predates it by decades.