

THE INTERNET

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THE INTERNET

An Introduction to New Media

Lelia Green

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For Linda Jaunzems who helps me keep all the balls in the air

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I INTRODUCTION

This book explores the internet as an introduction to new media. It does so by looking backwards to examine the history of the internet, and by looking forward to its emerging future. It draws upon current evidence from around the world to illustrate different aspects of internet use as these reflect a range of social, political and economic circumstances. It uses case studies, many based on new research, some of it unpublished, to reveal important aspects of the internet for comment and analysis. While the internet is too big a subject for any book to provide a complete review of its past, present and future, insights from case studies provide a series of snapshots which taken together create a broad picture of the contexts of internet use and illustrate what is happening, how and why.

The Internet (as) An Introduction to New Media examines the internet as itself, but is also a way of examining our everyday lives through our uses of the internet, and linking the internet with aspects of other new media. Many changes wrought by new media swiftly make their way into popular culture, both reflecting and building the excitement about new possibilities. Old media – the press, radio and television – discuss the innovations, and new media become the central element of novels and films. One example of this, within a popular culture context, would be the film *You've got mail* (Ephron 1998).

The type of context chosen is itself important when considering the internet, since a historical context will provide different information, and raise different questions, compared with a social context, for example. The diverse range of case studies covered in this book makes a number of different contexts visible. These include the way that the internet is used in everyday western life, as well as its technological, political, economic and global contexts. What becomes clear is that the internet, like other new media, is a site of constant reinvention. It has energised creativity, collaboration and novel models for commercialisation. At the same time that the internet makes possible new ways for us to seek information and relate to others, it also offers another technological medium through which individuals and societies can express themselves and their priorities.

2 the internet

In many western countries, the internet is pervasive. That is to say, almost everybody who wants to do so can access the internet (but see Chapter 4). This access will not necessarily always be in the time and place and circumstances that a person chooses, but there are comparatively few people who lack the skills and support to use an internet terminal in a library. It is important to remember, however, that the situation is very different in most parts of the world where the internet is still generally restricted to the richer, better educated, younger, males in the community. This also used to be the pattern of access in the West up until the early 1990s. The huge growth in take-up of the internet has both raised interest and created anxiety, a pattern common to each new medium as it is taken up and diffuses through society. When printing first started, and when telephones, radio, the cinema and television all became integrated within everyday life, the lawmakers and regulators of the day were concerned. Even while people are excited by new possibilities and potentials, as we will see later in the book, they may simultaneously be worried about risks, dangers, control, and relative advantages and disadvantages. For these reasons, new media are often associated with fear and panic, and a concern that the technology is 'too big to regulate'.

Given the numerous ways in which a book about the internet could be structured, this chapter explains why this book has been approached as it has. The explanation includes not only why there is a focus upon case studies, but also the logic behind the structure of the book. First, we start off with consideration of the internet as an introduction to new media, including a definition of the internet, in order to understand what we are focusing upon in this volume of the Berg 'new media' series.

The digital is a critical component of new media, and characteristics of digital goods are compared and contrasted with physical goods. The chapter goes on to consider how societies choose to use technology and explains the 'social shaping of technology' approach, which is the major conceptual framework used. This approach is complemented by the theory that technologies are 'consumed' by the people who use them and become part of a revised, enlarged conception of that person's sense of self. The benefits of consuming a technology are often communicated through 'social constructions' of that technology, the meanings and understandings about that technology which circulate in the relevant society, while a particular strand within that approach – Actor-Network Theory – positions people as key actors in networks which form integrated wholes related to technology use.

The internet can be explored using a wide range of theoretical frameworks and while the social shaping approach is not the only method used in this book, it is the main one. To illustrate the ways in which a particular framework makes some research and some evidence more or less important, the discussion of the social shaping of technology is developed in Chapter 2 through the use of a feminist

approach. Partly as a way of considering the predominantly male history of the early internet, we examine Wajcman's (1991) argument that technology is a 'masculine culture'. This is contrasted with the requirements of a more traditional historical analysis, such as that which characterises most of the material in Chapter 2, which positions key inventors and industrialists as the 'heroes' of innovation.

Empirical research forms a vital part of this book and, consequently, there is a brief introduction to case study research methods relevant to a social shaping framework. This allows readers to understand the ways in which case studies draw upon and showcase relevant evidence concerning people's uses of the internet. This introduction concludes with a description of the chapters that follow and suggests ways in which readers might like to use the book, since it has been designed to be read in bits and chunks, as well as a single narrative. A dot-point summary draws the threads of the chapter together, and sets the scene for the chapters to come.

THE INTERNET AS AN INTRODUCTION TO NEW MEDIA

The term 'the internet' is used here to cover:

- the interconnected and networked technological infrastructure that supports the World Wide Web;
- proprietary sites linked into the web (such as that maintained by The Louvre, the world-famous French museum);
- open and closed source software and architecture (e.g. Firefox, Wikipedia, Internet Explorer, Google);
- computer and everyday languages in terms of making the internet accessible to people of many cultures and literacies;
- email, chat and instant messaging (e.g. AOL, MSN);
- blogs and social networking sites (e.g. Facebook);
- games, communities, environments and worlds (e.g. World of Warcraft, Second Life);
- the many ways in which digitally mediated communication has become domesticated and pervasive within the everyday.

Not all of these aspects of the internet are given equal attention in this book since many areas, such as computer games and digital arts, are covered in companion books in the series. However, an inclusive notion of the internet, as indicated above, provides the blueprint for this volume. While it is expected that readers – not only students and educators but also researchers and policy makers – will be familiar with

using aspects of the internet, this book encourages a critical examination of such individual experiences and places them into a context which includes the past and the future of the internet; as well as the technical and social implications of internet use.

A new media approach to studying the internet recognises that digital technologies and environments are convergent. When technologies converge they take on and share the capacities and characteristics of other technologies alongside the core technology. This contrasts with everyday goods from pre-digital life, which had separate functions and separate technical characteristics. In the early days, television could not be used as a radio; a telephone could not work as a camera. Once information is digitised, however, it can be handled in consistent and effective ways which allow a blurring of functions and the emergence of hybrid technologies. For example, early computers had started as number crunchers, but became word processors as well as calculators. Increasingly, new media technologies can perform more functions in more varied contexts; such as accessing the internet from a mobile phone to post digital pictures to a social network profile, even as the event recorded is still happening.

Reflection: Convergent technologies

Can you think of a technology in your life that used to be two or more separate technologies?
What advantages do you find to having a number of functions combined in the same technology?
Are there disadvantages?

In addition to recognising convergence in the functions of end-user technologies, new media perspectives acknowledge that formerly distinct industries also converge, partly to position themselves strongly as competitors in emerging markets. The internet itself is sometimes positioned against a background of 'old media': print culture, which started in about 1439 with Johannes Gutenberg's invention of printing using movable type; and broadcast culture, which is a little over a century old. While old media do offer starting points for understanding the internet and the World Wide Web (WWW), these perspectives are more relevant to 'Web 1.0' than they are to 'Web 2.0', or than they will be for 'Web 3.0'. It might be worth noting here that the internet is not the WWW, although it provides the technological structure which makes the WWW possible. Web 1.0 refers to a stage in its evolution

when the internet could be used to access information and relatively static web pages, while Web 2.0 recognises that online environment now offers opportunities for social connection and interactivity for example, through blogs, wikis and social networking systems and technologies. For people in western countries, Web 2.0 has become increasingly prominent since the new millennium, although the organising principles of both print and broadcasting culture dominate many aspects of corporate content production.

As well as including aspects of both print and broadcasting culture, the internet marks a major development in the fields of information technology (IT) and telecommunications. One of the reasons for this huge growth in hybrid and convergent products, services and markets has been the impact of the digitisation of information in comparison to older analogue broadcasting technologies. When audio, video, data, graphic and multimedia applications are all designed to process digital information then those audio, video and data services can also be manipulated, stored and communicated via computers and telecommunications. The underlying digital structure of these different applications allows the outputs to be delivered through a variety of channels including cable, satellite, microwave and other telecommunications systems, with the platform of delivery being less relevant in terms of access and use than the bandwidth capacity of the delivery channel. New media are digital media, they tend to be information and communication technologies (ICTs) and they are hybrid to their core. The relevance of their digital nature lies in differences between the characteristics of digital goods and services, and material goods.

HOW DIGITAL INFORMATION DIFFERS FROM PHYSICAL GOODS

In the physical world, if a package is lost in a journey between London and New York, there is a problem. If it cannot be found, it may have to be replaced. In the digital world, if a packet of information is lost it will be re-sent, automatically, without anyone being aware that the packet has gone 'missing'. This is partly because digital information is kept by the source at the same time that it is sent to the receiver. In the digital world you can have your cake, and eat it too! Four characteristics of digital information differ dramatically from the characteristics of physical goods, as identified by Japanese futurist and information scientist Yoneji Masuda (1981).

First, information is not consumable: it continues to exist after it has been used, and different people can use the same information multiple times. Second, information is non-transferable: this means that the information can be passed onto

others and yet still be retained by the original user. Third, information is indivisible. Every fourth letter-space-punctuation in this book, for example, would fail to communicate a quarter of the meaning. Fourth, information is accumulative. As information is used, for example, entered into a database and then processed using statistics software such as SPSS, so it becomes more relevant and accessible for a range of purposes. Usually the processing information makes it more useful: it adds value. This is because 'accumulation of goods is by their non-use, but information cannot be consumed or transferred' (Masuda 1981: 77), thus as information is accumulated, so it has greater use; and as it is being used, so more information is accumulated. Masuda adds that the quality of accumulated information is increased through the addition of further high quality information.

This is the opposite of material goods, where consumption equates with destruction. The use of digital technologies to process data magnifies the benefits of these four properties of information. New information can multiply both the value and the amount of existing information through the creation of new knowledge.

Reflection: How does digital information compare with:

- printed information
- personal knowledge
- material goods?

Are all four characteristics of digital information used in internet communication?

Masuda (1978, cited in Jones 1995: 186) demonstrates that other astonishing things happen when digital information is combined with information technology. He notes that while 'information has always had the property of self-multiplication, computer-communication technology has rapidly increased the speed and quality of self-multiplication because the technology itself has added four more properties to information: (1) concentration, (2) dispersion, (3) circulation, and (4) feedback'. To these four functions we can, following the invention of the WWW, add (5) searchable.

1. Concentration occurs because ICTs store digital information more efficiently than any other means. This results in ICT operators being able to work effectively with multiple data sets using just one piece of technology.

- It also allows many people simultaneously to access huge databases from remote terminals, e.g. international ATM access to credit card accounts.
2. Dispersal allows information to be exported to many different sites. Together with inconsumability, this capacity of ICT permits information to be incorporated into a variety of data storage systems for multiple uses by many people.
 3. The circulation of information provides users with additional choices. Even if information is not downloaded onto a drive (as, for instance, would happen with dispersal), access to that information circulates via emails, web-links, etc.
 4. Feedback allows ICTs, via their data protocols, to verify that all the information sent has been safely received and reassembled. If the sending machine does not receive appropriate feedback verification, it automatically re-sends the data: hence the missing packet is replaced before anyone notices it is missing.
 5. Searching for data using WWW search engines allows access to constantly multiplying amounts of information, prioritised according to the searcher's key requirements. This aspect of ICTs will be examined closely in Chapter 2's case study of Google.

THE SOCIAL SHAPING OF TECHNOLOGY

Having established some key features of the digital information handled on the internet, we now move on to examine the main theoretical frameworks drawn upon in later chapters. The social shaping of technology approach to new media studies takes a fundamental pair of questions as its starting point: 'Does technology shape society?', or, 'Does society shape technology?'. Once people have started looking at these questions they find others also emerge: 'How does the shaping process happen?' and 'Is technology neutral?'. These questions and the discussions arising from them provide a starting point for thinking about the internet and other new media. They offer a way of talking about where people experience power and powerlessness in their uses of technology (MacKenzie and Wajcman 1999).

Some people's everyday experience is that technology changes too fast for their comfort. They prefer the old ways of doing things and feel disempowered when asked to carry out their everyday activities online. They resent that bank branches are closed down because more people are using internet banking. They feel disadvantaged when airline companies offer special fares for booking on the web. They can't believe that a smart-phone menu ('Press 1 for ...; Press 2 to ...') offers customer service advantages over the real person who used to answer when they

called a company's office. Such people might feel that the technology itself is behind the changes that make them uncomfortable.

Some commentators construct technology as the power which drives social change, impacting upon society. It is almost as if the scientific rules behind the development and application of technology are more effective and non-negotiable than the social and cultural dynamics that shape the communities and countries in which we live. Since new media technologies conform to the laws of science – of electro-magnetics, engineering, digitisation – this can be interpreted as indicating that technological change is a given, like gravity. There is no point in arguing about whether gravity is good or bad. According to this approach, the only role for society is to adapt itself to the technology, and come to terms with a future that is driven by technological change. Such a perspective sees technology as shaping society. It is called 'technological determinism' because the technology is positioned as the most important element determining people's lives.

Very few theorists these days argue a pure case for technological determinism. Instead, this perspective tends to be aligned with those who argue that certain technologies are inherently bad, and that this contaminates all uses of the technology. Such a perspective can be found in Theodore Roszak's classic criticism of the computer:

No matter how high the promise of that [information] age is pitched, the price we pay for its benefits will never outweigh the costs. The violation of privacy is the loss of freedom. The degradation of electoral politics is the loss of democracy. The creation of the computerised war machine is a direct threat to the survival of our species. It would be some comfort to conclude that these liabilities result from the abuse of computer power. But these are the goals long since selected by those who invented information technology, who have guided it and financed it at every point along the way in its development. The computer is *their* machine; its mystique is *their* validation. (Roszak 1994: 233, original italics)

Reflection: Is the internet neutral?

Thinking about your own circumstances, at home and in other locations, what rights and opportunities are implied in your use of the internet?

Do you see your internet use as neutral? Why?

Do you see the internet itself as a neutral technology?

What factors are you taking into account?

Social determinists agree that technology is an important change agent, but they argue it is not developed outside society but is an expression of priorities and choices that are made within social systems. This perspective is part of an overarching philosophy called Social Constructionism, which argues that social forces construct our understanding of the world and frame how we act within it. When discussing the role of technology, social determinists point to the actions of elites in sponsoring, developing and marketing technologies; and claim it is no accident that some technologies are promoted while others never even reach a prototype stage.

This perspective positions technology as having the power to impact upon everyday life, but it also constructs technologies as the result of social processes. When technology is positioned as an outcome of social dynamics, as it is in the social shaping of technology approach, there is the possibility that technological processes can be made accountable and that the development and deployment of technology can be regulated. The social shaping of technology perspective is generally a positive one. It says that technology is not beyond the control of social processes. However, it also argues that since technology is part of society, it tends to express the priorities of elite groups in that society.

The elites typically identified as supporting the development of technology can be remembered using an alphabet mnemonic: the A, B and C of technology change.

- A Armed forces;
- B Bureaucracy; and
- C Corporate power.

These three drivers of technological change are key promoters of new technology development. The US armed forces, for example – in the shape of ARPA, the (then) Pentagon-based Advanced Research Projects Agency – commissioned the work which led to the start of the internet. Bureaucratic drivers are behind innovations such as online tax returns and government portals delivering information and services. The UK Pension Service (<http://www.thepensionsservice.gov.uk>) would be a contemporary example of a bureaucratically-driven investment in technological development, which would include design and usability studies. Corporate power notes that companies also seek out and develop new products for new markets. Google would offer many examples of corporate power driving development (Chapter 2). Even where universities are the powerhouses for innovation, the funding for their research tends to come either from defence, the (civilian arm of) government or business.

Traditionally, the A, B, C of technology change ended with these three categories. Latterly, however – and excitingly – it has become appropriate to acknowledge a D and an E. These are less clearly elites, but may be seen as comparatively small groups

of people within their societies who have special skills and a passion for new media. The D and E that should be added to the mnemonic are

- D Distributed collaborators; and
- E Everyday innovators.

It is not the case that D necessarily comes before E (or that A came before B and C) and many would argue that everyday innovators have always been active in customising technology for their own purposes (Marvin 1990; Haddon 1988).

The acknowledgement of distributed networks of collaborators allows recognition of the creative power of ‘harnessing the hive’; the community of people engaged in a shared activity. We see these alliances of enthusiasts working creatively and productively in gaming contexts, in wikis and on fan fiction sites – to name but a few. An everyday innovators category acknowledges the creativity of new media adopters in finding novel applications for emerging technologies unsuspected by the technology developers. This was the case, for example, of SMS texts and the adoption of texting by Finnish teenagers as their major mobile application once it became clear how much cheaper it was to communicate in this way rather than by voice (Kasesniemi and Rautianinen 2002). These examples make clear the possibility that the elite associated with a technology can change over time: the corporate designers were supplanted by the cash-poor teenagers who fashioned the uses of the mobile phone to suit their lifestyles, their budgets, and to circumvent the usual communication patterns of their parents and teachers. (See the separate book in this series on *Mobile Communication* for more.) Clearly some internet advances can be attributed to Distributed and Everyday groups, and the internet is rarely conceptualised solely in terms of its Armed forces-sponsored beginnings.

These examples introduce the fact that the social shaping of technology approach is an umbrella concept for a range of specific micro-theories. Theories of specific relevance to the social shaping of technology approach include the ‘Theory of Consumption’, the ‘Domestication of Technology’ framework, the ‘Social Construction of Technology’ (SCOT) and ‘Actor-Network Theory’ (ANT).

The theory of consumption, developed by Daniel Miller (1987: 178–217) argues that ‘Mass goods’ ... are an integral part of that process of objectification by which we create ourselves as an industrial society: our identities, our social affiliations, our lived everyday practices’ (ibid.: 215). This has been stated more simply as: ‘social identity can be interpreted as a function of consumption’ (Hearn et al. 1997: 106). Essentially, to the world outside, we are what we consume in terms of products, services and technologies (Green 2001). We fashion our identities in part according to whether or not we go online and what we go online to do. We also change our homes, our schools and our workplaces by engaging in voluntary consumption

practices in those spaces. Since the home is the least (externally) regulated of all the places we inhabit, consumption in domestic spaces is particularly indicative of identity. The domestication of technology is consequently of great significance in understanding its consumption.

In suggesting that technology is ‘domesticated’, the ‘Domestication of Technology’ framework (Silverstone et al. 1992: 15–31) implies that the technology in question goes through a process of being tamed to serve the needs of those people inhabiting that domestic space. The classic model, originally focusing on domestication in the home, has four elements and proposes that the households concerned have a porous boundary with the wider society. The process of appropriation includes developing awareness, interest and desire for the technology, culminating in the action of procuring it for use in the home. Objectification involves the creation of a physical space, often within the home, for using the technology. In parallel, incorporation describes how the technology is integrated into the rhythms and the time structures of the household, and the individual lives of the people who belong to it. Finally, conversion explains how the people who consume the technology use it to construct and develop their social identity. This may be, for example, by developing good online search skills and becoming not only a better student, but the natural leader in group projects. Alternatively, it may be used to develop an identity as a gamer, or a fan fiction writer. Chapters 8 and 9 address these issues in much greater depth.

SCOT is generally associated with the work of Trevor Pinch and Wiebe Bijker (Pinch and Bijker 1984; Bijker, Hughes and Pinch 1987) and offers both a theory and a methodological approach which sets out a series of steps to follow when analysing the uses of a technology. Whereas I have used the term social elites in my brief introduction to the social shaping of technology, Pinch and Bijker discuss ‘Relevant social groups’. Principally the producers and users of a technology, such relevant social groups can also include, for instance, regulators and journalists. One criticism of the SCOT approach is that there are no objective tests as to what constitutes a relevant social group. Instead, the identification of any relevant social group is itself the outcome of social constructionist processes.

Bruno Latour’s work on Actor-Network Theory offers the provocative idea that non-humans are ‘actors’ in a network alongside humans, and that networks combine different entities (human and non-human) to form a unified whole which can itself be an actor in a network. Thus ‘the internet’ might include technology, systems, designers, programmers and users; it might also be an actor in the network of people and things that make up a national health system. This theory does not assume that networks, once formed, are stable and tends to focus on how networks evolve and disintegrate. It accepts that networks may be temporary, and it assumes that

networks are characterised by conflicts as well as by collaboration. Both human and non-human network actors are implicated in these conflicts. Carefully grounded in qualitative case studies, the early formation of ANT culminated in Latour's 1987 book, *Science in Action: How to follow scientists and engineers through society*. Within the social shaping of technology framework, then, SCOT charts the importance of relevant social groups while ANT sees people and non-human actors forming and reforming critical networks of relevant technological activity.

The discussion so far has used a somewhat inclusive notion of technology. As well as assuming that all new media have a technological dimension, this book treats programs and practices as part of the technological whole: alongside the technological product. The object itself, the systems (e.g. electricity, software) through which that object is made functional as well as the (human) knowledge, skills and expertise through which the technology and its systems are harnessed to create activities and outputs; are all implicated in this inclusive notion of technology. These three levels of understanding technology (Wajcman 1994: 6) together constitute one way to consider the question of whether technology is neutral. At the level of an object – where an object is as inert as a sculpture with no sense of what it was made for or how it is used – technology might be seen as neutral. However, it would be hard to recognise such an inert and mysterious entity as a technology: technologies necessarily have a use. Once that use is known, neutrality becomes impossible as a result of the technology being associated with certain elites, users, outcomes and processes. Further, only certain people have the know-how to use a new technology. When consideration is given to the individuals or groups empowered to use a technology, in which circumstances, in regards to which groups of people, a technology becomes imbued with issues of power, privilege, gender, nation and education: entirely embedded in social and cultural processes.

CASE STUDIES

We now turn from the analytic frameworks used in this book to consider the role of the case studies that it draws upon. These examine many aspects of internet use as a way of addressing and illustrating the relevance of the internet and new media to everyday life. They allow us to explore both the breadth and the depth of current and classic research and this approach is one way to deal with the huge diversity of the global experience of new media. By using research-based case studies, people's uses of the internet are thrown into focus. Readers can examine evidence from their own lives to gauge their experience of the internet compared with other people in terms of points of similarity and points of difference. As the book progresses, students

and other readers will learn from the examples given, and analysis offered, how to construct their own case studies around uses of the internet.

Yin identifies three kinds of case study: exploratory, explanatory and descriptive, commenting that the focus should be on 'a contemporary phenomenon with some real life context' (Yin 2003: 1), and that case studies are particularly useful when 'the boundaries between phenomenon and context are not clearly evident' (ibid.: 13). This method of presenting research draws upon a wide variety of materials and evidence: 'documentation, archival records, interviews, direct observation, participant-observation, and physical artifacts' (ibid.: 83); and is particularly indicated when matters of 'how' or 'why' are being addressed (ibid.: 9).

The 'triangulation' of research findings is particularly relevant here (ibid.: 97–99), where two or more research methods are used to illuminate the same issue. Also important is the complementary use of qualitative and quantitative research. A quantitative study may follow on from a qualitative finding in order to investigate how widespread a particular practice or belief may be in terms of a specific population. Similarly, a qualitative investigation, answering 'how' and 'why' questions, is often used to investigate in depth a finding that is uncovered through a quantitative study, which deals with 'how many' and 'how often' issues. For example, we might find via a quantitative survey that people over 75 with children are more likely to be internet users than people over 75 without children. Using in-depth interviews, which are a qualitative tool, we could then discover that a major motivator for over-75 internet use is the desire by seniors to keep in touch with adult children, and that these children are often mentors for their parents in terms of helping them develop internet skills. In a case study of over-75s' internet use, these two data sources, surveys and interviews, would triangulate to support a finding that family communication is an important promoter of internet use among older people.

Among other benefits, triangulation comes into its own when data from a range of different sources or perspectives give similar or overlapping indications as to 'how' or 'why'. Indeed, many detailed case studies try to include a number of different sources to make triangulation possible. In terms of this book, a range of data will be addressed in the case studies, but the case studies themselves are also a research tool to consolidate and integrate available evidence in order to triangulate theories about the role and relevance of the internet across a variety of cultures and contexts.

Yin's view (2003: xiv) is that there are three steps in a case study: defining and designing the study; preparing, collecting and analysing the data for the case study; and drawing conclusions. In the case of this book, considering the internet as an introduction to new media, the case studies have been defined and designed to illustrate the multi-faceted nature of the internet, and give some indication of the range of ways in which organisations, cultures, consumers and prosumers

(producer-consumers, e.g. Hartley 2006) use it. A list of case studies is included in the contents section and each case study is also accessible via the index.

A case study approach can be criticised since each study is necessarily short, and to some degree partial, since these 'abbreviated vignettes' are part of a larger consideration of the internet itself (a 'cross-case analysis' in Yin's terms (2003: 148)). However, these studies also mark a starting point upon which further research can be based. All the case studies can be expanded by further research to build additional insights and knowledge. Such further research can be carried out as part of the engagement with the book and will add value to the case studies included here, especially if, paraphrasing Yin, all the evidence gleaned is attended to; alternative interpretations are adequately considered; the finding(s) of greatest significance to the researcher are identified and addressed; and if the elaborated case study builds upon your own area of interest and expertise (Yin 2003: 137).

Reflection: Yourself as a case study

If you were writing a study of your own use of the internet, where would you start?

What motivated you to learn how to use the internet?

Who and what influenced you as you developed your skills and knowledge?

THE STRUCTURE OF THIS BOOK

The book's structure is pivoted around Chapter 4. Chapters 1–3 introduce the internet by examining key concepts and theories, the history of the internet and the important policy dimensions that impact upon its use. Chapters 5–9 start wide and gradually become more specific in focus, beginning with how the internet is customised for specific purposes (Chapter 5); attempts to regulate the internet (Chapter 6); the relevance of the internet to the public sphere (Chapter 7); communities (Chapter 8) and the internet in family life (Chapter 9). Chapter 10, the book's conclusion, ties the different strands together and also looks forward to the future. Within this structure, Chapter 4 uses one example of a policy issue, the 'digital divide', as a bridge to move from the policy focus to research upon how and why people do or do not access the internet. A slightly expanded account of the contents of each chapter follows.

Chapter 1 introduces this volume and explains some key terms which are constant throughout the book. These include the importance of a research-driven approach and the predominant use within the book of the theories of consumption, domestication and the social shaping of technology. Reference to new media implies that we are talking about digital media, and we have introduced some key characteristics of digital information that have helped to promote the dynamic momentum of convergence that underlies many current new media technologies.

Chapter 2 is a gallop through the history of the internet in terms of people and places. It uses a vignette and snapshot approach to a story which could be told as a 35mm feature film, so it is necessarily an overview, with pointers for further research. The chapter outlines central moments and key people in the development of the internet as we know it today, and takes us to the late-2000s, with more recent material included in the case studies.

Chapter 3 provides a technological and policy focus. It examines the policy debates around the internet and introduces and defines major terms in those debates. It explores the implications of the outcomes of such debates through an examination of the policy environments of Australia and China. A glossary of abbreviated and technical terms is also included at the end of the book.

Chapter 4, focusing on the 'digital divide', includes a consideration of telecommunications policy in the US and the UK. Its case studies examine a range of people who may be seen as falling 'on the wrong side' of the digital divide. These include homeless people in Scotland, people in Britain who are the primary carers of (typically) a family member with a disability, and US residents who do not have an internet connection.

Chapter 5 examines attempts to customise the internet and develop aspects of it to serve a specific purpose. These processes are illustrated through considering the development of an Irish Gaelic web, the Francophone (French-speaking) resistance to the dominance of English in the western world's use of the internet, and a vision for the future: 'Web 3.0' and movements towards 'the Semantic Web'.

Chapter 6 considers the challenges of regulating the internet and raises questions of legal jurisdiction over individuals' behaviour online. It does this through two case studies. The first is a look at the pornography industry; the second is an example of cyber-stalking and online defamation. Chapter 7 looks at the contribution of the internet to the development of the public sphere in terms of free speech (as illustrated by *A declaration of the independence of cyberspace*). It also includes case studies on Wikipedia and YouTube.

Chapter 8 addresses the search for community both on- and off- line and points to the many cases in which online activity is a way of bonding more closely with existing friendship networks. It does this through three case studies, two of them

gendered. The first concerns young males and online gaming culture; the second looks at young women and fan fiction writing in the Harry Potter fandom. The final case study focuses on ethical issues in researching online communities and centres upon the creation of a community to support recovering heart patients.

Chapter 9 zeroes in on the family. It examines an attempt within a US family to regulate what they see as an ‘internet addiction’, and looks at families that commit to continuous upgrading of their internet experience. Finally, it considers the role of the internet for some of the poorest families in the world: those that depend upon remittances.

Chapter 10 brings together the various threads running through the book. It examines what we have learned about the internet in terms of the individual, the household and the community; technology, policy, society and culture. This chapter forms the conclusion to the book whilst also acknowledging that the internet continues to develop and the readers of this book are well positioned to analyse how this is happening, and the implications of these changes for themselves and their communities.

READING THIS BOOK

Finally, we can draw attention to how the design of the book enables it to be read in a variety of ways. The book has a semi-modular structure and a detailed index. Through the use of the contents table and index, readers can pinpoint particular case studies and examples, reading the book actively to answer specific questions. Topics and case studies can provide short-cuts to discovering more about aspects of the internet independently of what precedes and follows the section in question. Such an approach requires the reader to mine information by cross referencing the index with the contents, and with the case studies. This strategy requires a more active exploratory reading style than simply turning the pages, but a combination of this active searching and conventional reading practices delivers the most detailed and useful way of working with the book.

Active reading systems vary (see, for example, Kump 1999) but, to summarise, they include suggestions that the reader can scan, survey, mine, check, recall and review the information required. This strategy presupposes that the reader is purposefully looking for something in particular out of their reading experience – this makes it easier to note or dismiss the information presented. The reflection boxes and the questions and exercises for each chapter may provide useful prompts.

1. Scanning is a skim or flick through technique, to get a feel for a book. Does it have many diagrams, boxed sections, indented quotes, illustrations? Are

the chapters very different in length, and do they share the same kind of structure? Is there a contents section, an index, subheadings, summaries, references, exercises? You might scan a book in the library or bookshop before deciding whether or not to take it.

2. Surveying goes back over the material to mentally map out the terrain of the book. If the scan indicated that the information required was placed in one or more locations, these are found and noted. This is also a chance to look for other relevant areas. The survey clarifies the features of the book and can include, for example, checking the index and browsing the introductions and summaries of chapters that may include the information required to locate the area(s) where it is dealt with.
3. Mining is the in-depth investigation of the required information, read carefully, and with links to other related topics followed through if useful to the matter at hand.
4. Checking is a quick examination of those areas of the book that were not mined, to make sure that no relevant, or contradicting, information has been missed. This deepens the understanding of the context offered by the book for the core information required.
5. Recall includes writing down the information discovered. It occurs best and most effectively with the book shut. Here it is helpful to remember and link the information found with the reasons why it was sought; connecting these together with other relevant ideas and information. Mind maps (Buzan and Buzan 1996) can be a useful strategy for doing this.
6. Review is a final corrective where the reading has been done with a specific output in mind (a research report, or an essay). The book is opened again and the mind map checked. This step ensures that information has been correctly recalled and notes the location at which the information was found: page number, chapter, and details of the book's title, author, publisher and copyright date.

Schema such as this one can help navigate the contents of a book more effectively than passively reading from the first page to the last. These strategies also have useful parallels with the way we follow an information trail on the internet. Indeed, it was the idea of using a hypertext link to locate, access and open a document on another computer anywhere else on the network that led to Tim Berners-Lee creating the WWW (Chapter 2). In doing this, Berners-Lee not only responded to his way of searching for information, which has parallels with the conventional index, he also patterned some aspects of the internet in a manner that encouraged users to follow suit.

Summary

- This chapter places the internet in the context of other new media and reminds us that the experience of the internet will vary considerably depending upon where in the world you live, and upon your social, economic and educational circumstances. It introduces the concepts of digitisation and of convergence as these apply to the internet in particular and to new media more generally.
- By explaining the importance of research for offering a detailed understanding about how we and other people use the internet, the chapter introduces a range of theoretical frameworks which are used in the case studies that follow. In this book these have been generally subsumed under the heading of a social shaping of technology approach. They are: the theory of consumption; the domestication of technology; the social construction of technology and actor-network theory.
- Case studies are critical to the way in which this book examines the internet. The use of case studies allows a rich, deep investigation of specific aspects of the internet. It also means that there are areas not investigated, and important aspects of global history (such as the Cold War) which are examined only in passing, or through the lens of one or more case studies. Any single volume that deals with the internet and its history struggles to reconcile breadth, depth and completeness. This book has chosen to value breadth and depth and indicate the gaps in completeness by drawing its case study examples from a wide variety of countries and contexts. An active reader will finish this book with tools which they can use to develop their own case studies of aspects of the internet that they wish to probe further.
- The chapter ends with an overview of the structure of the book and a suggestion as to an alternative, or supplementary, way in which to read it. In offering a thumbnail sketch of the chapters to follow, this introduction provides a survey of material in the book and an idea of the journey ahead.

Chapter 2 offers a brief history of the internet and introduces some key moments, movements and technologies through which it was developed.