The Story of the Internet

by Stephen Bryant

Teacher's notes

SUMMARY

The *Story of the Internet* charts the development of an invention that has had a more dramatic effect on human communication than any since the telephone.

The beginnings of the Internet can be found in the early days of the Cold War. Eisenhower's America was stunned by the launch of the Russian Sputnik satellite. For the first time the American public felt vulnerable, and the US administration reacted quickly. In 1958 Eisenhower created ARPA (the Advanced Research Projects Agency), and later NASA (the National Aeronautics and Space Administration). America aimed to gain complete technological superiority over the Soviet Union.

Bob Taylor at ARPA was quick to realise that time and money could be saved if the huge mainframe computers, found in government departments and universities, could speak to each other. This was ARPA's first achievement, and in 1969 the first network was created. The first e-mail was sent three years later.

The computer remained huge and cumbersome until work by Bill Gates, and later Steve Wozniak of Apple, led to widespread ownership of personal computers in businesses and in the home. The Internet, however, was still owned and exclusively used by the US government. George Bush changed all this by allowing it to be used for private and business purposes in 1992.

Central to the way that we use the Internet today was the work of the British scientist Tim Berners-Lee, who created HTML (Hypertext Markup Language) in the early 1990's. The latter enabled a simple network to become a World Wide Web. It is now possible to shop, communicate, chat, find out the latest news, or research any topic that you might think of. This can be done from any personal computer in the world which can be connected to a telephone line.

Communicative activities

The following teacher-led activities cover the same sections of text as the exercises at the back of the Reader, and supplement those exercises. For supplementary exercises covering shorter sections of the book, see the photocopiable Student's Activities pages of this Factsheet. These are primarily for use with class readers but, with the exception of discussion and pair/group work questions, can also be used by students working alone in a self-access centre.

ACTIVITIES BEFORE READING THE BOOK

1 Ask students to work in small groups to discuss the following inventions; saying who they think the inventors were, when they were invented, and finally ranking them according to how important they consider them to be, justifying their decisions.

The aeroplane
The telephone
The personal computer and The Internet/World Wide Web
The combustion engine
The television

2 Ask students to answer the following survey questions. Then ask them to interview two other students, and finally report back to the group.

(a) Do you own a personal computer?
(b) How often do you use a computer?
(c) What do you use a computer for?
(d) How would your life be different if computers did not exist?
(e) If you use the Internet, what do you ususally use it for?
(f) How do you think the Internet will develop in the future?

ACTIVITIES AFTER READING A SECTION

Chapters 1–3

1 Put students in pairs. Ask them to complete the gaps in their information by asking their partners appropriate questions. The answer to their partner's question is below each gapped sentence.

Student A

(a) The USSR launched Sputnik on ....
    (NASA stands for the National Aeronautics and Space Administration.)

(b) The American president in the 1950's was ....
    (Bob Taylor was in charge of ARPA.)

(c) Sputnik crossed the American skies every .... minutes.
    (IMP's worked as translators for the computers on the network.)

(d) ARPA stood for ....
    (IMP stands for Interface Message Processor)

(e) Ray Tomlinson was responsible for ....
    (The Network in Hawaii used radio waves to communicate over mountains.)

(f) Bob Cart worked together with .... to find a way to connect the different networks.
    (In 1975 the computer industry was dominated by IBM)

Student B

(a) NASA stands the for ....
    (Sputnik was launched by the USSR on 4 October 1957)

(b) .... was in charge of ARPA.
    (The US president in the 1950's was Eisenhower)

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(c) IMP's worked as .... between computers on the network.
(Sputnik crossed the American skies every ninety-six minutes)

(d) IMP stands for ....
(ARPA stood for the Advanced Research Projects Agency.)

(e) The Network in Hawaii used .... to communicate over mountains.
(Ray Tomlinson was responsible for the use of the '@' symbol in messages.)

(f) In 1975 the computer industry was dominated by ....
(Bob Cart worked with Vint Cerf to find a way to connect different networks.)

2 Ask students to work in small groups. First they should make notes about the roles of the following people. Then they should discuss them and rank them according to their importance for the development of the Internet.
Bob Khan
Larry Roberts
Vint Cerf
Neil Armstrong
Frank Heart
Wes Clark
Dwight D Eisenhower

Chapters 4–6

1 Ask students to prepare a presentation on one of the following companies and organisations, either working individually or in pairs, depending on the number of students in the group. If possible, they should use the Internet for research. They should include a company profile as well as any current news about the company. Finally, they should present their findings to the group. (All of the companies and organisations are mentioned in Chapters 4–6.)
IBM
Apple
CERN
Netscape
Honeywell
Hewlett Packard

2 Ask students to work in pairs. Ask them to imagine that they could interview the following people from Chapters 4–6. Ask them to prepare questions that they would like to ask (some should relate to the events that take place in Chapters 4–6), decide on their answers and then role play the interview for the group.
Tim Berners-Lee
Frank Carey
Bill Gates
Steve Wozniak

Chapters 7–8

1 Ask students to send either an e-mail or a memo to a partner in the group (between classes) with questions about the content of Chapters 7 and 8. They should find the answers before the following class, and talk about them with their partners in the class.

2 Ask students to discuss these questions in small groups.
(a) Why are search engines important?
(b) What was the last thing you searched for on the Internet?
(c) What kind of Internet crime do you know? What can be done about it?

(d) What are the dangers of the Internet for children? What can be done about them?
(e) Do you think that SETI will find alien life? Why? Why not?

ACTIVITIES AFTER READING THE BOOK

1 Ask students to use the Internet, and/or any other method of research, to prepare a presentation about another invention, including the different stages in its development, important dates and the people involved. They should then give this presentation to the group.

2 Ask students to discuss the following questions in small groups.
(a) Will the Internet mean the end of paper letters, books and magazines?
(b) What would happen if one government or organisation took control of the Internet?
(c) Would you like to work from home? Why? Why not?

Glossary

It will be useful for your students to know the following words. They are practised in the 'Before You Read'sections at the back of the book. (Definitions are based on those in the Longman Active Study Dictionary.)

Chapter 1
armed forces (n) the military forces of the country, usually the army, navy and the air force
republic (n) a nation which is usually governed by elected representatives; the head of state is a president
satellite (n) a natural or man-made object which moves around a larger one in space
software (n) lists of instructions that must be given to a computer in order to make it perform operations; these lists are called programs
technology (n) the branch of knowledge or activity dealing with scientific and industrial methods and their practical use in industry

Chapters 2–3
crash (v) (of a computer system) to stop working suddenly
digital (adj) a description of data which is stored or transmitted as a sequence of numbers or symbols
distant (adj) far away in space or time
hardware (n) machinery which makes up a computer system
inner (adj) on the inside
institute (n) an organisation formed for a special purpose, or the building in which it happens
interface (n) the point of interaction or communication between a computer and something else such as a printer or human being
keyboard (n) the set of keys on a computer which you press when you use it
log on (v) to enter a computer system
mainframe (n) a large, powerful computer
run (v) to make a computer program work
research (n) advanced and detailed study of a subject in order to find out something new
security (n) arrangements to keep something safe
site (n) a place on the Internet which belongs to an individual or organisation

Chapters 4–5
browse (v) to look at things (especially on the Internet) without any special purpose
chip (n) a very small piece of silicon containing a set of electronic parts, used especially in computers
hypertext (n) a computer system that enables the user to provide accesses to, or get information about, a particular text
matter (n) (in Physics) something that has mass and exists as a solid, liquid, or gas

Chapters 6–8
category (n) a group of similar people or things
download (v) to transfer (data or programs) from a central computer to a personal computer
surf (v) to move around the Internet (using a browser) looking for anything interesting
take over (v) to get control of something

(Student's activities)

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Students can do these exercises alone or with one or more
other students. Pair/group-only exercises are marked.

Activities before reading the book

1   Study the Business Wordlist at the front of the book,
    then try to do this exercise without looking at it. Put
    one word in each gap.

   (a)   That bank has many **b** ....; there is one in
         almost every town or city in Britain.

   (b)   IBM is not a small company; it is a huge **c** ....

   (c)   The company **p** .... its report annually.

   (d)   There are 50 personal computers connected to
         the **n** ....

   (e)   The mobile phone market is **e** .... very rapidly.

   (f)   A company's main **o** .... is to make as much
         profit as possible.

2   Read the Introduction to the book. Are the following
    questions true (T) or false (F)?

   (a)   The development of the Internet did not begin until
         the 1990's.

   (b)   Mark Andreesson was very confident about his
         new program.

   (c)   John Doerr was a computer scientist.

   (d)   Most people in the early 1990's did not think the
         Internet was going to be very important

   (e)   Mosaic was not a successful program.

   (f)   The writer believes that the Internet will be very
         important in this century.

Activities while reading the book

Chapters 1–2

1   Which important events in the Internet's development
    happened on the following dates?

   (a)   4th October 1957

   (b)   7th January 1958

   (c)   1966

   (d)   August 1968

   (e)   16th July 1969

   (f)   1st October 1969

2   Fill the gaps in these sentences with the name of
    somebody who was important in the development of
    the Internet.

   (a)   .... was in charge of computer projects
         at ARPA.

   (b)   .... managed the project to build the first
         computer network.

   (c)   .... was the US president in 1957.

   (d)   .... thought of the idea of IMP's.

   (e)   .... was chosen to head the team that
         built the IMP's.

   (f)   .... typed the first words ever sent on a
         network.

3   Answer these questions.

   (a)   Why were ARPA and NASA established?

   (b)   What did the IMP's do?

   (c)   What were computers like in the 1960's?

   (d)   Why did Bob Taylor think it was important to build
         a network?

   (e)   What did the large computer companies think
         about the idea of a network in 1968?

   (f)   What was the first word sent on the network?
         What should it have been?

Chapter 3

1   Fill the gaps with the names of the people who worked
    on the network.

   (a)   .... and .... both worked for
         BBN.

   (b)   .... replaced .... as head of
         computers at ARPA.

   (c)   .... invented a program for sending files
         and chose the '@' in e-mail addresses.

   (d)   .... worked with .... on the
         idea of a 'gate' between networks.

   (e)   .... asked .... to organise a
         show for the new technology.

2   Finish this summary about the early development of
   ARPAnet with of the words below.

   The network was as .... as Bob Taylor had ....
   By having a computer connected to the network,
   universities could .... on projects and thus work
   more .... , BBN could send new .... to
   the IMP's, instead of engineers having to fly from city
   to city to .... it.

   The two .... things about the network were the
   number of .... that were sent, and that people
   connected to ARPAnet knew more about the .... of
   telephone lines than the telephone companies.

   | surprising successful imagined co-operate |
   | state efficiently deliver furthermore e-mails |
   | software |

Chapter 4

1   Finish these sentences about Chapter 4.

   (a)   Bill Gates was playing cards when ....

   (b)   Both Paul and Bill felt ....

   (c)   Paul went to New Mexico to ....

   (d)   Bill didn't go to New Mexico because ....

   (e)   IBM was ....

   (f)   The BASIC program ....
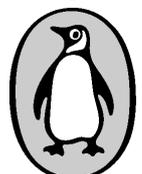
(g) If the BASIC program hadn't worked, ...

2 Are these sentences true (T) or false (F)?

(a) Bill Gates did not study Computers at university.

(b) Apple made computers more user-friendly.

(c) Steve Wozniak designed his own computer because he wanted to be rich.

(d) Apple didn't pay much attention to marketing their products.

(e) IBM were not interested in personal computers at first.

(f) The operating system, DOS, made Bill Gates very rich.

Chapter 5

1 Answer these questions.

(a) Where was Tim Berners-Lee working when he created the World Wide Web?

(b) Where did he get the idea for his program from?

(c) What is so special about hypertext?

(d) What was Tim's reason for creating hypertext?

(e) What is HTML?

(f) What was different in the 1990's about the people who used the Internet, from those who used it in the 1980's?

2 What happened on these dates?

(a) 1856

(b) October 1989

(c) 1980

(d) 1991

(e) March 1989

(f) 1990

Chapter 6

1 Who said the following things?

(a) 'This kind of computing is dying!'

(b) 'Have you seen this?'

(c) 'Do you know any good engineers?'

(d) 'People are often there for forty-eight hours without a break, just writing software'

(e) 'This software's going to change everything. Soon everyone will be using it.'

2 Who do the following phrases refer to?

(a) He wrote the program 'Mosaic'.

(b) He made SGI into a very successful company.

(c) He didn't like the idea of pictures on the Internet.

(d) He lent Andreesson the money to start his business.

(e) He changed the law to allow commercial use of the Internet.

3 Answer these questions.

(a) Why was Marc Andreesson angry with his university?

(b) Why might the university have been angry with Marc later?

(c) What was the main problem with the Mosaic browser?

(d) What did Marc think he could learn from Bill Gates?

(e) How did Netscape make a profit?

(f) What happened on 9th August 1995?

Chapters 7–8

1 Here are the answers to some questions, write the questions.

(a) ....
They use powerful computers and clever software to help you find what you want on the Internet.

(b) ....
150,000 pages.

(c) ....
At Standford University.

(d) ....
They looked in a dictionary.

(e) ....
AOL

(f) ....
$850 million

2 All these sentences contain mistakes. Find the mistakes and correct them.

(a) Matt Drudge worked for a big newspaper.

(b) Vladimir Levin worked for a bank in Russia.

(c) All software can be downloaded free from the Internet.

(d) India put stories about Pakistani war crimes on its own web site.

(e) You cannot prevent children from seeing anything they want on the Internet.

(f) German engineers often have to travel to see their colleagues in the USA.

(g) SETI is a project that designs computers for use in space.

Activities after reading the book

1 Write a report for a newspaper, saying what you think are some of the advantages and disadvantages of using the Internet.

2 Visit the Penguin Reader's web site at:
www.penguinreaders.com

3 If there are some web sites that you visit often, write a letter or e-mail to a friend giving your top 5 sites, a description of each and why you like them.

The internet has become a cultural, economical and life changing technological phenomenon. Enough can not be said about this incredible technology. However, the internet is not one single invention; it is a simple idea that has evolved throughout the decades into something bigger than us all. While the internet was. Our timeline of Internet history runs from ARPANET to World Wide Web and Facebook. In 1961, he wrote about ARPANET, the predecessor of the Internet, in a paper entitled "Information Flow in Large Communication Nets." Kleinrock, along with other innnovators such as J.C.R. Licklider, the first director of the Information Processing Technology Office (IPTO), provided the backbone for the ubiquitous stream of emails, media, Facebook postings and tweets that are now shared online every day. Here, then, is a brief history of the Internet: The precursor to the Internet was jumpstarted in the early days of computing history, in 1969 with the U.S. Defense Department's