



# 1 Unit

# The Internet





## Part I Lead In

1. Watch the video “Internet Safety” and discuss the following questions:
  - 1) What’s the world like under the influence of the Internet in 10 years?
  - 2) How to keep safe and private in the world of the Internet?
2. Read the following definition of the Internet and find more on-line background reading materials concerning the Internet.

The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to link several billion devices worldwide. It is a network of networks that consists of millions of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies.

## Part II Intensive Reading

### Passage A

# Internet 2025: Blazing Speeds to Bring Future Tech

### Extreme Connectivity

What if the Internet were 100 times faster than it is today? How would this super-high-speed connectivity affect the economy, health care and education?

The Pew Research Center, a nonprofit organization in Washington, D.C., recently posed these questions to experts in a range of Internet-related fields. Predictions about what the future Internet landscape could look like in the year 2025, with blazing-fast connectivity, ran the **gamut** from **pragmatic** to **fantastical**. Some experts envisioned a future in which business meetings take place via 3-D **hologram**, and another predicted the rise of **immersive** 3-D **pornography**.

“These experts generally believe that, if technological change advances as they expect, it will bring about the types of connectivity humans have been dreaming about for quite some time,” said Janna Anderson, co-author of the new Pew report and director of the Imagining the Internet Center at Elon University in North Carolina.

### Virtual worlds

“The specific types of applications that might be possible with a faster Internet are really anyone’s guess, but many of the more than 1,400 experts **canvassed** for the report had similar predictions for the future,” Anderson told Live Science <sup>①</sup>.

Many experts focused on the emergence of “telepresence”, which could enable people to be together virtually even though they are physically far apart. Imagine playing in a virtual band with people from around the world, or having Thanksgiving dinner with family members who live on the other side of the country. These are a few of the ideas put forth in the report by Marti Hearst, a professor in the School of Information at the University of California, Berkeley. “These ideas aren’t new, but they will finally work well enough if given high enough **bandwidth**,” Hearst wrote in response to the researchers’ question about future connectivity.

Another thing that could benefit from more bandwidth is **augmented** reality. Internet experts are enthusiastic about the possibility of a future filled with avatars, interactive gaming and holograms.

Of course, not everyone who responded to the researchers’ queries focused on the opportunities for entertainment with faster Internet. Some, like Alison Alexander, a professor of communications at the University of Georgia, think better bandwidth could help solve practical real-world problems, such as alleviating inefficiencies inherent in **bureaucracies**.

### **Internet of things**

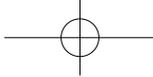
Still other experts focused their responses on a different theme: How the increased speed of computing could bring humans and machines closer together.

“High-bandwidth and high-definition communication will allow the emergence of what we’ll call emotional computing,” wrote David Orban, CEO of the New York-based software company Dotsub. “Facial expressions, subtle changes in voice stresses, gestures, will all be part of how we will communicate among each other for work and fun across any distance, with computers and software platforms understanding these components and being able to adapt to them, **facilitating** the efficient reaching of goals and objectives.”

“Humans and machines will also be brought closer together by the so-called Internet of Things,” some experts predicted. In a world with faster Internet, smart devices won’t be trendy or superfluous; they’ll be the norm, according to Hal Varian, chief economist at Google.

“One industry that will see a huge impact if this prediction were to come true is health care,” Varian said. Internet-enabled devices, for instance, could allow for continuous health monitoring outside of hospitals. “You will be able to purchase health-monitoring systems just like you purchase home-security systems,” Varian wrote in the report. “Indeed, the home-security system will include health monitoring as a matter of course. Robotic and remote surgery will become commonplace.”

And Varian wasn’t the only expert to discuss what a faster Internet could do for the health care industry. Judith Donath, a fellow at Harvard University’s Berkman Center for



Internet and Society, predicts that in the future, **chronically** ill and elderly patients “will be released from hospitals with a **kit of sensors** that a home nurse can use”. She also said that the reach of health care will expand into unexpected territories, with local drugstores carrying out simple surgeries and offering what she called “fast meds — **analogous to** fast foods”.

### Keeping up with changes

Similar advancements might be made in the field of education, according to some of the survey respondents. “Apps that track and aid in every learning ability or disability are likely in the future,” wrote Breanne Thomlison, founder of BTx2 Communications, a marketing and strategies firm. “In fact, the whole system of education in the United States, and elsewhere in the world, will likely have to change to keep up with these fast-paced technological advancements,” some experts said.

“Time in school will need to radically change, since the talking-head, expert teacher is less and less valuable,” wrote Ed. Lyell, a professor of business and economics at Adams State University in Alamosa, Colorado. “The role of teacher-coach will be even more important yet require a different emotional and intellectual skill set than that which most educators now possess.” The Pew Research Center report also noted several other possible trends, such as the belief that superfast Internet service in some parts of the world, but not others, could generate a new digital divide.

“We should not expect these bandwidth increases to be evenly distributed, and many who cannot afford access to increased bandwidth will be left with low-bandwidth options,” wrote Rex Troumbley, a graduate research assistant in the Department of Political Science at the University of Hawaii at Manoa. “We may see a new class divergence between those able to access immersive media, online **telepathy**, human consciousness uploads and remote computing, while the poor will be left with the low-bandwidth experiences we typically use today.”

But experts say that such inequalities, as well as the exciting new applications inspired by superfast Internet, won't come about overnight. “These developments will take time to emerge — perhaps longer than a decade,” many experts said.

“If you held them to it, the experts would probably say they wouldn't bet any money on all of that being the reality in 2025, but they do imagine that we'll be closer to it because they are already witnessing early forms of such things,” Anderson said.

### New Words and Expressions

blazing ['bleɪzɪŋ] *adj.* 强烈的; 燃烧的

gamut ['gæmət] *n.* 全范围

pragmatic [præɡ'mætɪk] *adj.* 实际的; 实

用主义的

fantastical [fæn'tæstɪkəl] *adj.* 空想的; 捕风捉影的

hologram ['hɒləgræm] *n.* [激光] 全息图; 全息摄影, 全息照相

immersive [ɪ'mɜːsɪv] *n.* 沉浸式; 沉浸感; 增加沉浸感

pornography [pɔː'nɒgrəfi] *n.* 色情文学; 色情描写

canvass ['kænvəs] *v.* 细究; 彻底检查

bandwidth ['bændwɪðθ] *n.* [电子] 带宽; [通信] 频带宽度

augmented [ɔːg'mentɪd] *adj.* 增广的; 增音的; 扩张的

bureaucracy [bjʊə'rɒkrəsi] *n.* 官僚主义; 官僚机构

facilitate [fə'sɪlɪteɪt] *v.* 促进; 帮助; 使容易

chronically ['krɒnɪkli] *adv.* 长期地; 慢性地

a kit of 一套

sensor ['sensə] *n.* 传感器

analogous to 类推为; 类似于; 异曲同工

telepathy [tɪ'leɪpəθi] *n.* 心灵感应; 传心术

### Notes:

- ① Live Science: “生活科学”, 是一个由 Purch (美国一家线上出版公司) 运营的科学新闻网站, 该网站上的一些故事、评论文章也会在几大主要新闻报道机构同步播报, 如雅虎、微软全国广播公司、美国在线、福克斯新闻等。

## Comprehension of the Text

### Task 1 Content Understanding

Directions: Work in groups and answer the following questions.

- 1) What does the emergence of “telepresence” mean?
- 2) Why will a new digital divide emerge?
- 3) What is the main idea of this passage?

### Task 2 Multiple Choices

Directions: Choose the best answer to each of the following questions and statements.

- 1) Which of the following does NOT belong to the predictions about what the future Internet landscape could look like in the year 2025?
  - A. Business meetings will take place via 3-D hologram.
  - B. It will give rise to immersive 3-D pornography.
  - C. It will bridge the gap between the real world and virtual world.
  - D. It will bring about the types of blazing-fast connectivity.
- 2) What does the word “augmented” mean in the sixth paragraph?
 

A. supplemented      B. exaggerated      C. argued      D. virtual



A man received some treatment at a hospital but refused to pay the hospital bill because he 6 the figures were not correct. The hospital sued the man. As proof of the amount owed to it, the hospital offered in evidence a computer printout of the services rendered to the defendant and the amounts owed for them. Hospital employees 7 that information as to amounts owed by patients in the hospital were stored in a computer as part of a regular business routine. The man objected to the admission of the computer printout as evidence on the 8 that there was not a proper comparison checking of original slips showing services rendered against the computer printout.

The court decided that the computer printout was 9 as evidence when it was shown that the entries were made with proper equipment in a regular courses of business. The objection that there was not a 10 checking of the printout did not make the printout inadmissible. It was up to the jury to decide how much weight or importance should be attached to computer printout.

- |              |               |                |              |               |
|--------------|---------------|----------------|--------------|---------------|
| A. claimed   | B. received   | C. hardly      | D mostly     | E. generated  |
| F. predict   | G. accepted   | H. application | I. deficient | J. sufficient |
| K. testified | L. admissible | M. produced    | N. apply     | O. ground     |

### Translation

Directions: Translate the following sentences into English.

- 1) 电子计算机的主要特点是计算准确且迅速。
- 2) 上网很有意思，但也很浪费时间。
- 3) 只要一点鼠标，计算机使用者就能接受到文件、程序、视频和声音。
- 4) 只要配有电脑和调制解调器，人们就可以在家接收信息。
- 5) 电子设备在科学工作、工业设计和经济核算领域的广泛应用，能够使人们从繁重的计算劳动中解放出来。

### Writing Assignment

Directions: For this part, you are allowed 30 minutes to write a short essay entitled "The Pros and Cons of the Internet". You should write at least 180 words following the outline given below:

1. Describe the phenomenon of the widespread use of Internet.
2. List the benefits of the Internet as well as some drawbacks brought by it.
3. Express your opinion on whether problems of using the Internet outweigh the benefits or not.



## Passage B

### Could the Internet Ever Be Destroyed?

The raging battle over SOPA<sup>①</sup> and PIPA<sup>②</sup>, the proposed anti-piracy laws, is looking more and more likely to end in favor of Internet freedom — but it won't be the last battle of its kind. Although, ethereal as it is, the Internet seems destined to survive in some form or another. Experts warn that there are many threats to its status quo existence, and there is much about it that could be ruined or lost.

#### Physical destruction

As a vast behemoth that can route around outages and self-heal, the Internet has grown physically invulnerable to destruction by bombs, fires or natural disasters — within countries, at least. “It's very richly interconnected,” said David Clark, a computer scientist at MIT, who was a leader in the development of the Internet during the 1970s. “You would have to work real hard to find a small number of places where you could seriously disrupt connectivity.” On November 9th, 2001, for example, the destruction of the major switching center in south Manhattan disrupted service locally. But service was restored about 15 minutes later when the center “healed” as the built-in protocols routed users and information around the outage.

However, while it's essentially impossible to cripple connectivity internally in a country, Clark said it is conceivable that one country could block another's access to its share of the Internet cloud; this could be done by severing the actual cables that carry Internet data between the two countries. Thousands of miles of undersea fiber-optic cables that convey data from continent to continent rise out of the ocean in only a few dozen locations, branching out from those hubs to connect to millions of computers. But if someone were to blow up one of these hubs — the station in Miami, for example, which handles some 90 percent of the Internet traffic between North America and Latin America — the Internet connection between the two would be severely hampered until the infrastructure was repaired. “Such a move would be an act of cyberwar,” Clark told Life's Little Mysteries, a sister site to Live Science.

#### Content cache

Even an extreme disruption of international connectivity would not seriously threaten the survival of Web content itself. A “hard” copy of most data is stored in nonvolatile memory, which sticks around with or without power, and whether you have Internet access to it or not. Furthermore, according to William Lehr, an MIT economist who studies the economics and regulatory policy of the Internet-infrastructure industries, the corporate data centers that harbor Web content — everything from your emails to this article — have sophisticated ways to back up and diversely store the data, including simply storing copies in multiple locations.

Google even stores cached copies of all Wikipedia pages; these were accessible when Wikipedia took its own versions of the pages offline in protest of SOPA and PIPA. This diversified storage plan keeps the content itself safe, but it also offers some protection against loss of access to any one copy of the data in the event of a cyber war. For example, if power were cut to a server, you may be unable to reach a website on its home server, but you may find a cached version of the content stored on another accessible server. Or, “If you wanted data that was not available from a server in a country, you may be able to get substantively the same data from a server in other countries,” Lehr said.

### **Internet arms race**

The redundancy of so much online content and of connectivity routes makes the Internet resilient to physical attacks, but a much more serious threat to its status quo existence is government regulation or censorship. In the early days of Egypt’s Arab Spring uprising, the government of Hosni Mubarak attempted to shut down the country’s Internet in order to cripple protesters’ ability to organize; it did this by ordering the state-controlled Internet Service Provider (ISP), which grants Internet access to customers, to cut service.

“ISPs have direct control of the Internet, so what happens in any country depends on the control that the state has over those ISPs,” Clark said at the time. “Some countries regulate the ISPs much more heavily.”

However, in Egypt last year, many protesters found ways to bootstrap connectivity and bypass the shut-off, such as by using smart phones to communicate with the global Internet over cellular networks and tapping into private companies’ Intranet connections. “A lot of the connectivity to protesters was provided by workers who made access available to their business networks,” Lehr said.

If, in future, the U.S. government sought to shut down or limit Internet access, similar workarounds would crop up, and they would grow more sophisticated as the regulatory methods became more extreme — a “weapons race”, Lehr called it. “The tools for fighting the war are mostly defensive (fire walls, shutting down interconnects, monitoring, locking up folks who have violated ‘laws’) but also can be offensive (viruses to attack hostile websites/destroy content, locking folks up preemptively, etc.)” Governments could also simply tax Internet access, or providers could jack up the prices, in such a way as to price it out of reach of most people. Lehr added that, while no single government could destroy the Internet everywhere, it could certainly cripple it sufficiently to render its use unattractive for people within its country of governance.

### **In the balance**

“Bad regulation, be it in any particular country or on the international scale, could severely hamper the Internet’s value and its ability to grow,” Lehr said. While some version



of the Internet is likely to exist as long as humanity does, what might be lost or greatly diminished is “the openness of the Internet”.

“This openness is useful both economically and socially, but it is also a source of problems,” Lehr noted; it lends itself to endless security and privacy attacks, junk mail, viruses, malware and so on. He believes new security models must be developed to protect privacy and security while still allowing the Internet to function. “Whether we can effectively strike that balance is a difficult challenge and work in progress.”

### New Words and Expressions

ethereal [i'tɪəriəl] *adj.* 缥缈的; 超凡的  
 behemoth [bi'hɪ:mθ] *n.* 庞然大物  
 protocol [ˈprəʊtəkɒl] *n.* 协议; 草案  
 hub [hʌb] *n.* 集成器  
 cache [kæʃ] *n.* 电脑高速缓冲存储器

nonvolatile [nɒn'vɒlətaɪl] *adj.* 非易失性的  
 resilient [ri'zɪliənt] *adj.* 弹回的, 有弹力的  
 bootstrap ['bu:tstræp] *n.* [计] 引导程序;  
 辅助程序

### Notes:

- ① SOPA: Stop Online Piracy Act, 禁止网络盗版法案。该法案由美国国会审议通过, 目的是为了和内容创作者的知识产权。该法案提高了对互联网用户未经授权在网络上分享版权内容的刑罚。
- ② PIPA: Preventing Real Online Threats to Economic Creativity and Theft of Intellectual Property Act of 2011, 简称: PROTECT IP Act, 缩写: PIPA。意为“2011年防止实时线上对经济创新能力的威胁和对知识产权的盗窃的法案”, 又称“国会968号草案”(Senate Bill 968, 简称: S. 968), 是美国一项待审议通过的法律。其目的是赋予美国政府和知识产权拥有者更多的法律手段来干预专门发布侵犯知识产权的内容或者虚假内容的非法网站。
- ③ Life's Little Mysteries: “生活中的小秘密”, 是一个由 Purch (美国一家线上出版公司) 运营的网站。该网站为人们解答各类有趣的、疯狂的问题。

### Writing Assignment

Nowadays, Internet safety is a worldwide concern. Many people are worried that their information may be lost on the Internet and the Internet may be destroyed by terrorists or wars. Now you are required to:

1. Write a summary of Passage B within 200 words.
2. List some other Internet security problems people are now facing.

## Part III Extensive Reading

*We are surrounded by an ocean of information every day. However, not all the information is reliable in academic terms. While using the information as evidence in an academic discussion, we need to consider the source and the audience of the information.*

### Sources of Academic Knowledge

In today's world, we are surrounded by information. At the click of a mouse, we can access thousands of web pages, many containing what looks like useful information. There are also thousands of books, journals, magazines and other printed sources which present information on every possible subject. Unfortunately, much of that information is not reliable in academic terms. Information that is not reliable cannot be used as evidence in an academic discussion.

#### Where does the information come from?

To be acceptable in academic terms, information must come from an authoritative source. One of the most common authoritative sources is a peer-reviewed journal. In the academic world, a journal is a specialized magazine that is published regularly, usually once every three or six months. It contains articles on specialized academic topics written for an audience of academics and students. Peer-reviewed journals contain articles that have been read by several academics before being accepted for publication. This ensures that the standard of each article is high, that the argument is clear and that the evidence presented has been collected in ways that are acceptable and appropriate.

#### Who is the audience of the information?

Different types of publication are written for different audiences. Peer-reviewed journals, for example, are written for academics and students while professional magazines present material of interest to people who work in a specific field. Magazines such as *National Geographic* are written for a broad audience of educated people who are interested in the world around them.

In general, information is reliable in academic terms if it is written for an academic or a professional audience. However, it is not usually appropriate to use information written for a popular audience. For example, magazines such as *Time* and *Newsweek* are not usually regarded as authoritative academic sources, although they may deal with serious issues. This is because in order to make complex issues easily understandable, magazines like these focus on individual experience, and tend to report only some aspects of academic discussion. For example, the issue of *Time* for July 23th, 2001 contains a long article on human evolution.



While the article is interesting, it would not be appropriate to refer to it in an essay on human evolution because it focuses on the experience of individual scientists rather than on a critical analysis of what has been discovered.

**Is the source of the information objective?**

Most people today are aware of the link between smoking and lung cancer. This link has been established by many studies carried out by researchers in many different countries. However, there are also studies that claim that there is no link between smoking and lung cancer. Many of these studies have, in fact, been financed by tobacco companies, which do not want people to stop smoking. It is easy to see that these studies are not objective, as tobacco companies have an interest in finding that there is no link between smoking and cancer. Studies that are carried out by people or organizations which have an interest in the result are not considered to be reliable sources of information.

In the same way, it is important to be sure that the information being presented has a scholarly purpose rather than an advertising purpose. In other words, we have to be sure that the information is not being presented in order to encourage us to buy a product.

(The passage is an excerpt from *Academic Culture, 2nd Edition: A student's guide to studying at university*. Some parts of it have been adapted for easier understanding.)

## Part IV Oral Practice

Nowadays, oral communication skills are not only a common part of many college curricula, but also the necessary capability in future career. For those who are anxious, or just inexperienced when it comes to public speaking, this requirement can be difficult to master. So when preparing your oral report, make a good project outline to make almost as positive a difference in the quality of your report as the research and information itself.

- Assemble your report information. Look at your research materials and determine which information you want to include in your report. Whether you summarize it or have photocopies with highlighted sections, it's important that you know what information you want to present.
- Make a list of categories or section titles that your desired information can fall under. For the average-length college oral presentation (5 to 20 minutes), you'll generally want about four to seven sub-topics for your presentation. Determine your titles for these topics based on how to create the most even distribution of the information you've gathered in your research and want to present.

- Determine an order for your sub-topics. The first consideration for order should be how to set up a logical flow of information and figure out if your audience is going to need to hear about one set of facts before they can understand or relate to another piece of information. For example, if you were doing a presentation about a famous musical composer, you might want to start with listing some of the music that composer was famous for before going into details about his life.

**Now you are required to:**

Make a report on “Internet Security” with the help of the given instructions. First assemble the information concerning Internet security and then determine the sub-topics. Finally set up a logical flow of the information.