Technology & Society now!

Englisch für das Berufliche & Technische Gymnasium
Band 2

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Vorwort

Die Lehrwerkreihe „Technology & Society now!“ findet mit Band 2 für die Jahrgangsstufe 12 der Beruflichen/Technischen Gymnasien ihre Fortsetzung. Inhaltlich und methodisch orientieren sich die sechs Module dieses Bandes an den Vorgaben der einschlägigen Lehrpläne für die berufs­relevante Fortentwicklung der englischsprachigen Kompetenz mündlich und schriftlich.

Aufbau des Lehrwerks


Wir, die Autoren aus Schule und Hochschule, wollen mit Band 2 der Reihe „Technology & Society now!“ zur Fortentwicklung der sprachlichen und fachlichen, aber auch der analytischen Kompetenzen der Lernenden beitragen und somit zu ihrem Lernerfolg im Fach Englisch. Wenn Ihnen dieses Lehrwerk gefällt, sagen Sie es weiter. Aber helfen Sie uns auch, dieses Lehrwerk zu optimieren. Sagen Sie uns, was es im nächsten Druck, in der nächsten Auflage zu verbessern gilt. Schreiben Sie uns unter lektorat@europa-lehrmittel.de. Wir freuen uns auf Ihr Feedback.

Frühjahr 2018

Autoren und Verlag
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7 Handling ICT

7.1 The hardware and its use

7.1.1 Looking back: the history of information and communication technologies

Since the earliest high cultures in the Near and Far East, mankind has tried to find ways to communicate, operate and also store relevant information effectively. Starting with the cuneiform writings of the Sumerians, the papyrus rolls used by the ancient Egyptians and, much later, Gutenberg’s printing press mankind has now reached unprecedented levels in the field of passing on and storing information. Already the 19th century had its first milestones as far as the fast transport of messages is concerned. After centuries of transmitting letters by messengers on horseback or in uncomfortable stagecoaches, the first optical telegraph was invented in France by Claude Chappe at the time of the French Revolution. Mechanical telegraphs with an indicating digit were well in use throughout the 19th century.

A breakthrough came in the United States in 1837, when Samuel Morse introduced the first electricity-based telegraph which revolutionised communications. It was also the first successful attempt to transform spoken or written words into electrical signals. Transforming them into electrical impulses, sending them over long distances, then retransforming them at the recipient’s place and literally ‘getting the message’ was a great thing to see.

Early in the 17th century the traditional way of calculating things was changed. For thousands of years the Chinese had made use of the abacus, a wooden counting frame with pearls of wood or clay. In 1623 the Swabian astronomer Wilhelm Schickhard (1591–1635) built a mechanical calculating machine that was able to add and to subtract six-figure numbers.

With the pioneering discoveries in physics at the end of the 19th and in the early 20th century, the rise of modern information and communication technologies was only a question of time. Heinrich Hertz’s discoveries of electrical waves, Planck’s quantum theories and Einstein’s revolutionary ideas on the properties of matter and time were instrumental in bringing about rapid changes in technology. The development of tubes, transistors and, finally, the integrated circuit all contributed to what we take for granted today: a networked world based on a wide range of various electronic devices.

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Philipp Reis and Alexander Graham Bell invented important devices in the field of telephony. Sea cables and, more recently, satellites reduced the transport time of transcontinental information from weeks to only seconds. Additionally, starting with giant machines such as Konrad Zuse’s “Z1” or the American ENIAC (= electronic numerical integrator and computer), both originally designed and constructed for military purposes, the miniaturisation of information technologies introduced a sea change in the way we communicate today. The Apple II personal computer, designed by Steve Wozniak in 1976, marked the start of the mass production
of personal computers in the USA. It took another 20 years for the internet to become available to the global community. Today, with the everyday use of smartphones, video conferencing, networked digitalised household devices in smart homes and the “internet of things” about to come, we are just at the start of a new era of information and communication technologies.

7.1.2 Skills training

Preparation of presentations

1. Based on Text 7.1.1, find out what, in your view, is necessary to create and give a good presentation. Make a list of the points that should be kept in mind to make a presentation interesting and effective.

2. Discuss the pros and cons of the devices depicted below.

3. In class discuss how facts/data/information can best be presented in a PowerPoint presentation. In your discussion think about the role that the text should play. Also consider the roles of the colours and design of PowerPoint slides. Together with a partner write down a set of 6-8 rules that you consider important for a presentation.
7.1.2.1 How to present like Steve Jobs

Steve Jobs (1955–2011) is said to have been a great story teller. Watch the YouTube video (https://www.youtube.com/watch?v=2-ntLG0yHw4) to learn how Jobs introduced his MacBook. Then read and discuss these quotations from the video.

10 tips for more effective presentations

Steve Jobs was a masterful presenter. Presenting is a skill that can be learned just like typing or any other business skill. What made Jobs so good? Communications expert Carmine Gallo has a few ideas.

1. Make a plan on paper. Jobs’ presentations are planned out like movies, with story development and climaxes.

2. Set the theme. MacWorld 2008’s theme was, “There’s something in the air” – which built anticipation for the unveiling of the new MacBook Air™, but didn’t give away the surprise.

3. Show enthusiasm! Jobs shows genuine pride and excitement as he discusses Apple achievements, and this inspires his audiences.

4. Provide a roadmap. Jobs gives his audiences an agenda to follow to help them remember his main points.

5. Make numbers meaningful. “Enough memory for 6 movies” is more impressive and easier to understand than “X number of gigabytes.”

6. Deliver a Spielberg moment. When Jobs pulls the MacBook Air out of the manila envelope, you know that’s the climax of his talk because Jobs created such drama around it.

7. Keep slides simple. One bold image and very little text is enough for Jobs, and enough for the audience as well.

8. Sell the benefit (not the features). People care about what they can do, not what the product can do.

9. Rehearse. Jobs’ delivery seems effortless because he practises – out loud – for days before his event.

10. Don’t sweat the small stuff! Panicking just draws attention to a problem. When something goes wrong with a video, Jobs makes a joke and moves on.

Preparing a presentation

Choose an electronic or other device and prepare a product presentation in the way Steve Jobs did. First, list the properties of the product. Then decide how to best present them. Work in small groups so that each group member can concentrate on one part of the presentation.

Analysing presentations

Go on the internet and watch video examples of presentations. Pay particular attention to the presentational techniques shown in these videos. In class discuss which of these you find helpful and state why.

Going beyond the text

The text claims there is a “Spielberg moment” in Steve Jobs’ presentations. Find reasons why the author of the text refers to this famous Hollywood movie director. Research and report to your classmates. Also mention some of Spielberg’s movies.
It's the holy grail of presentations training: “Tell them what you are going to tell them; tell them; tell them what you have told them.” It’s also quite possibly the biggest load of nonsense I have ever come across, and the one piece of advice that, if followed, is guaranteed to make your next presentation a boring one. The simple format outlined above is great if you are a six-year-old doing “show and tell” at your school. It gives the little tike some basic structure to bolster their confidence and help to get them through the dreaded five minutes they have to fill. If you are an adult, however, you require something more.

Repeating something three times does not make it interesting or engaging. Nor does it make it memorable (particularly when your audience has nodded off in the first ten minutes). If you want an audience engaged and interested in what you have to say, then you need themes and stories rather than mindless repetition. …

The “tell them what you are going to tell them” approach is a poor substitute for great storytelling. It’s also a poor substitute for mediocre storytelling. Every presentation should be built on good stories and a common theme that binds them altogether. Only then are you interesting and engaging.

1. **Describe the author’s attitude towards “the holy grail of presentations training”. Based on your own experience explain why you would agree or disagree.**

2. **Which proposals for giving presentations are made?**

### 7.2 Telephony

**Tasks**

4. **Getting started**

1. Have a look at the cartoon and the photo of the telephone operators. Describe why smartphones are superior to the traditional way of telephoning.

2. Find out about the roles of S. Morse and A.G. Bell for the development of the telephone.

#### 7.2.1 Traditional phone calls – a technology of the past

Morse’s telegraph system has spread over the world since 1850. However, it did not offer people the opportunity to talk to each other simultaneously. A. G. Bell’s first telephone, patented in 1876, is a
very simple apparatus, consisting of a microphone and a loudspeaker. Telephones could be connected by a simple copper wire. Every town had its own telephone office building with lots of mechanical switchboards and telephone operators. They were responsible for switching the connections to various parties owning a telephone. In the early phone system, up until 1960 or so, every call had to have a dedicated wire stretching from one end of the call to the other for the duration of the call. So if you were in New York and you wanted to call Los Angeles, the switches between New York and Los Angeles would connect pieces of copper wire all the way across the United States. As you used the 3000-miles line alone, phone calls were very expensive.

7.2.2 Telephony: how cellphones work

No matter where you go you’ll see someone talking on his or her cellphone. These days cellphones provide an incredible range of functions, and new ones are being added at a breathtaking speed.

At its most basic, a cellphone is a radio – an extremely sophisticated radio, but a radio nonetheless. We’ll show you what we mean.

In the dark ages before cellphones, people who really needed mobile communications ability installed radio-telephones in their cars. In the radio-telephone system there was one central antenna tower per city, and perhaps 25 channels available on that tower. This central antenna meant that the phone in your car needed a powerful transmitter – big enough to transmit 40 or 50 miles (about 70 kilometers). It also meant that not many people could use radio telephones – there just were not enough channels.

The genius of the cellular system is the division of a city into small cells. This allows extensive frequency reuse across a city, so that millions of people can use cellphones simultaneously.

A good way to understand how sophisticated cellphones are is to compare them to a CB radio or a walkie-talkie.

- **Full-duplex vs. half-duplex** – Both walkie-talkies and CB radios are half-duplex devices. That means, two people communicating on a CB radio use the same frequency, so only one person can talk at a time. A cellphone is a full-duplex device. That means that you use one frequency for talking and a second, separate frequency for listening. Both people on the call can talk at the same time.

- **Channels** – A walkie-talkie typically has one channel, and a CB radio has 40 channels. A typical cellphone can communicate on 1,664 channels or more.

- **Range** – A walkie-talkie can transmit about 1 mile (1.6 kilometers) using a 0.25-watt transmitter. A CB radio, because it has much higher power, can transmit about 5 miles (8 kilometers) using a 5-watt transmitter. Cellphones operate within cells, and they can switch cells as they move around. Cells give mobile phones incredible range. Someone using a cellphone can drive hundreds of miles and maintain a conversation the entire time because of the cellular approach.

In a typical analog cellphone system in the United States, the cellphone carrier receives about 800 frequencies to use across the city. The carrier chops up the city into cells. Each cell is typically sized at about 10 square miles (26 square kilometers).

**Inside a digital cellphone**

On a “complexity per cubic inch” scale, cellphones are some of the most intricate devices people use on a daily basis. Modern digital cellphones can process millions of calculations per second in order to compress and decompress the voice stream.
If you take a basic digital cellphone apart, you’ll find that it contains just a few individual parts:

- **A circuit board** containing the brains of the phone
- The circuit board is the heart of the system. The analog-to-digital and digital-to-analog conversion chips translate the outgoing audio signal from analog to digital and the incoming signal from digital back to analog. The digital signal processor (DSP) is a highly customised processor designed to perform calculations at high speed.
- The microprocessor handles all the housekeeping chores for the keyboard and the display, deals with command and control signalling with the base station and also coordinates the rest of the functions on the board.
- The ROM and memory chips provide storage for the phone’s operating system and customisable features, such as the phone directory. The radio frequency (RF) and power section handles power management and recharging, and also deals with the hundreds of FM channels. Finally, the RF amplifiers handle signals travelling to and from the antenna.
- The display has grown considerably in size as the number of features in cellphones has increased. Most current phones offer built-in phone directories, calculators, games, calendars, notes, Web browsers, and cameras, as well as countless other applications, or apps, to serve practically any need or want.

Some phones store certain information, such as the SID and MIN codes, in internal Flash memory, while others use external cards that are similar to SmartMedia cards.

Cellphones have such tiny speakers and microphones that it is incredible how well most of them reproduce sound. The speaker is about the size of a dime and the microphone is no larger than the watch battery beside it. Speaking of the watch battery, this is used by the cellphone’s internal clock chip.

What is amazing is that all of that functionality – which only 30 years ago would have filled an entire floor of an office building – now fits into a package that sits comfortably in the palm of your hand.

### Work with the text

1. **Untangle the text.** Find out about the long forms of the abbreviations that are left unexplained in the text.

2. **In your own words explain the difference between the “central antenna” system and the cellular approach to transmitting mobile phone communication.**

3. **Explain what is said in the text about the duplex and half-duplex technology, the channels and the range of the devices.**

4. **In a spreadsheet diagram list the technical differences between a CB radio/walkie-talkie on the one hand and a cellular phone on the other.**
Pictorial presentation

With the information given in the text, create a pictorial presentation showing the most important parts of a cellphone. You can either use your own symbols or, even better, look up suitable circuit symbols (from the internet or from the Tabellenbuch Elektrotechnik, (Europa-Verlag)). Then explain the function of each part to a partner.

7.3 Local Area Network (LAN)

Getting started

1. Describe the scheme of a Local Area Network as shown here. How does it work? Which other networks are there?

2. How has office work changed since computers have become interconnected? Discuss the pros and cons this technology has brought with it.

Many people are concerned about the radiation caused by cellphones, WLAN routers and other electronic devices in their homes. The British newspaper The Guardian has some facts.

Wi-Fi: are there any health risks?

*If it is possible for a microwave oven to interfere with Wi-Fi signals … because they operate at the same frequency, is Wi-Fi then not dangerous to your health? Would having Wi-Fi in your home not be like leaving your microwave door open? – Read Hermie’s reply:*

This is a question that comes up from time to time, and the short answer is no. In fact, we could rephrase your question and pretend that you’d asked about baby alarms, radio-controlled cars, cordless (DECT) phones, Bluetooth headsets, security alarms and loads of other things that operate in the same unlicensed radio frequency band without causing concern. Is having a baby alarm in your home not like leaving your microwave door open?

The longer answer is that the intensity of a Wi-Fi signal is around 100,000 times less than a microwave oven. The oven is a device that operates at very high voltages and short distances. Wi-Fi routers operate at very low voltages, broadcast in all directions, and are used at relatively long distances.

Since radio waves follow the inverse square law – like light, sound and gravity – then each time you double the distance, you get only a quarter of the energy. In other words, the signal strength falls off very rapidly. At normal operating distances, Wi-Fi’s intensity is generally so low that it’s not worth worrying about: it’s just part of the “smog” that is generated by radio and TV signals, AC mains wiring, the motors in home appliances, and the universe in general.

As many readers know, the electromagnetic spectrum stretches all the way from very long wave radio frequencies to very short-wave gamma rays, with visible light somewhere in between. We know that types of ionising radiation with wavelengths shorter than light tend to be dangerous. Examples include ultraviolet (UV) rays, X-rays and gamma rays.
However, the non-ionising wavelengths that are longer than light tend not to be dangerous. These include infrared rays, microwaves and radio waves. At 2.45 GHz, Wi-Fi comes in the microwave band along with baby monitors and mobile phones. After that come the radio frequency bands used for TV broadcasting and AM/FM radio, and further along, long-wave radio.

There have been hundreds of attempts to find out whether Wi-Fi routers or, more importantly, mobile phones represent a health risk. All we can say is that there is no known risk from Wi-Fi. After that, there’s the problem of trying to prove a negative.

Of course, it does make sense to minimise risk, as long as you concentrate on the biggest risks, not the trivial ones. If you want to do that, the mobile phone must be the first thing to go. In use, the phone is held close to the brain, while the Wi-Fi router may well be in another room (inverse square law). It has been estimated that you get a bigger dose of microwaves from one 20-minute phone call than from a year’s Wi-Fi. Twenty laptops and two routers is roughly equivalent to one mobile phone.

If you are extremely fussy about Wi-Fi, then make sure you sit 1m (or more) away from the router, and don’t use your laptop on your lap. Put it on a table or tray instead. I don’t think there is a risk, but you may feel safer if you remove a non-existent risk.

The World Health Organisation, which has examined the topic in depth, says: “In the area of biological effects and medical applications of non-ionising radiation, approximately 25,000 articles have been published over the past 30 years. Despite the feeling of some people that more research needs to be done, scientific knowledge in this area is now more extensive than for most chemicals. Based on a recent in-depth review of the scientific literature, the WHO concluded that current evidence does not confirm the existence of any health consequences from exposure to low-level electromagnetic fields. However, some gaps in knowledge about biological effects exist and need further research.”

The main gap appears to be the potential impact on children using mobile phones for more than 10 years. (Children are more susceptible to radiation than adults, and problems may take decades to appear.)

My own feeling is that there are more important things to worry about than Wi-Fi. Last year, for example, more than 25,000 people were either killed or seriously injured on Britain’s roads, and in 2010, there were 8,790 alcohol-related deaths. You are far more likely to die by falling off a ladder (roughly one death a week, in England and Wales) than by Wi-Fi.

(759 words)
3. Write a summary of the text. Use your own words as far as possible and concentrate on the most important information.

Mediate
A friend of yours who does not know English is very much afraid of the radiation caused by electronic devices. Give the relevant information in German.

Discussion
1. With your classmates discuss what you know about the dangers of radiation in general (e.g. radioactivity, x-rays, exposure of food to radiation to keep it fresh etc., impact of radiation on people).
2. Find out what the downsides of the old technology were compared to the new media available today. Discuss why, in your view, the new media are a blessing and a curse at the same time.

Presentation
Task for techies: Introduce the concept of a microwave oven (mentioned in the text) to your classmates. (How does it work? What are the most important differences compared to conventional ovens?)

Research and presentation
Since the arrival of the first telephone, the technology has changed quite a bit. In a first step look up information on technologies that enable people to Skype via the internet, do video conferences and use mobile phones. Then present your findings in order to demonstrate to your classmates how the technical devices work.

7.4 Internet
The internet connects billions of computers, servers, and databases worldwide. It could be called the biggest virtual library in existence, collecting most of the knowledge mankind has gained over thousands of years. Almost everything can be offered or found there: scientific information, all kinds of products, social platforms, romance, but also cybersex, drugs, weapons and crime. For most users the internet is a giant tool that they use every day. However, one should always bear in mind that not all the sources available are equally reliable.

7.4.1 Doing research on the internet
Finding credible sources and reliable information is often a difficult task. Don’t forget that many people, companies, organisations or even governments use – but also misuse – the internet to spread information that serves their interests. Therefore the information you find on the internet may very well be misleading, false, or limited in scope or range.

Perhaps the most difficult – and important – task in internet research is to ensure the sources you select are credible and authoritative. Generally, you want to prioritise information from government sources, academics, and nationally recognised news organisations. Government sources will often have “.gov” somewhere in the webpage. For example, the name of the website of the United States Department of State is www.state.gov. The official website for Australia’s Department of Defence is www.defence.gov.au.
Websites that end in .edu belong to colleges and universities. However, you do need to be careful with .edu sites, because often faculty and students can run personal webpages that will have the .edu extension, but the information found there may not be confirmed by the university. It is advisable therefore to look for academic sources in an academic database or search engine such as EBSCO host or Google Scholar.

Websites that end in .org belong to non-profit organisations. While some of these are highly credible, others are not. Anyone can purchase a website with an .org extension. Check these sites carefully, and don’t rely on them as your sole source of information.

Major news sources such as The Guardian, CNN, and Al Jazeera tend to be credible. But you also need to make sure that you are reading a factual article and not an opinion piece. Many news sites also have blogs and editorial sites where people can state their opinions, which aren’t necessarily backed up by facts.

Cast a wide net. Don’t limit yourself to the first few results in the search engine.

Although it is impossible to view all of the results for most of your search attempts, it is important to view at least several pages of results in order to ensure you don’t miss important information. If you’re using a regular search engine like Google or Yahoo, you may find that the first couple of pages mainly contain the links that were most effectively promoted, rather than those with the best information. This is often the result of search engine optimisation that webpage promoters try to achieve for their clients.

Mediate

Imagine you are a tutor. Your students have to work on research papers and presentations and want to know how they can find reliable sources of information on the internet. Sum up the most important points of the text in German.

Research work

1. Go on the internet and find out which other search engines there are apart from Google. Find out also how they may have specialised in order to compete with Google. Present your findings in class.

2. In groups do research on the internet and collect information about the most important institutions in the fields of higher education (universities, colleges), research institutes and government facilities. Then create a map of your home region (e.g. North Rhine-Westphalia, Bavaria, Saxony, etc.) to show the locations of these institutions. List their web addresses. Tell your classmates what information you found.

Discussion

Recently the term “alternative facts” has been introduced into the public debate on political issues. Explain why access to reliable data and “honest science” is essential for scientific and economic progress, but also for correctness in the dissemination of information.
7.4.2 Internet communication

7.4.2.1 Face time: how video calls are changing our daily life

Even the most skeptical are starting to recognize the magic of video interactions. Grandparents play with faraway grandchildren; divorced fathers do homework with kids who live with their mothers; long-distance couples check in before they go to bed, read to each other or fall asleep with their laptops next to them on the bed.

Video calling offers a certain romantic magic. There’s no location too far for a neighborly chat, no country too distant for a smile. And in the future, reality may look even more like science fiction – scientists at the Swiss Federal Institute of Technology Zurich are at work on 3D video conferencing, which would make possible virtual encounters like those shown on the holodeck of Star Trek’s Spaceship Enterprise.

Some predicted a bright future for video telephones as far back as over 70 years ago. In 1936, the German postal system set up public “viewing telephones”, through which users could wave to each other between the cities of Berlin and Leipzig, for three Reichsmarks for three minutes. A series of other attempts followed, but all failed. German telecommunications giant Deutsche Telekom introduced its T-View 100 videophone in 1997, but it failed to reach a wide audience, in large part because costs were much too high.

When a breakthrough finally came, it came from an unexpected place: Estonia, where Scandinavian entrepreneurs hired three Estonian software designers in 2003 to program Skype. Their internet telephone concept proved brilliant: All users also transmit other people’s conversations through their computers, a method which made it possible to reduce costs to virtually nothing. “If the Russian military occupation had one good aspect, it was that we learned how to make something with very little,” says Sten Tamkivi, head of Skype’s original unit.

This low-cost software from the Baltics spread quickly because it suddenly made international calling between computers free. The company charges a small fee only for connections to conventional telephones. Skype first began offering video calling in late 2005. The company is planning an initial public offering for later this year.

From its start in the private sphere, Skype has expanded to corporate clients. American company Genworth, for example, saves around $1 million each year just in travel costs by using video conferencing. Still, Skype benefits primarily private individuals and small businesses.

“Hello my friend,” Veda Ravishangar says in English. The guru is sitting, half-naked, in front of his laptop, holy symbols drawn on his face. From distant Bangalore, India, where the weather is tropical and humid, the 37-year-old offers yoga lessons over Skype. “I will help for happy mind and balance mind and super mind,” Ravishangar says. Who could refuse such an offer?

“On the internet, nobody knows you’re a dog” was the joke back when the written word, often authored anonymously, still ruled the Web. Today, though, the motto of services like Facebook is: “Real people meeting real people.” It’s an approach also known as “hyperpersonal”. It’s not data that count, but people; not text, but gestures.

The current euphoria can also lead people to overestimate technology. An American court case, Baker vs. Baker, caused a stir over the summer when the judge granted a divorced father three visitations of an hour or more per week with his children – over Skype.
The new internet model that brings people closer, it seems, can also drive them further apart. "I’ve even heard of people attending funerals over Skype," relates Henning Schulzrinne. An internet phone pioneer, he used the technology as early as 1992 and now teaches at Columbia University in New York.

Schulzrinne, 49, looks a bit tired. He’s travelling at the moment and a bare hotel room is visible behind him on the screen. He wishes there were such a thing as Skype etiquette. "The requirement to conduct video calls can cause peer pressure, especially in the business world," he says. In other words, anyone who declines to participate by video is believed to have something to hide. "But do I really want to see how inattentive my conversation partner is?" Schulzrinne says. "Sometimes video is just a distraction." Perhaps this is just one more thing that will soon be available over Skype, along with gurus, grandparents and psychoanalysts: teachers of video chat etiquette.

**Tasks**

1. Explain why the technology of video calls can bring people closer together and why, at the same time, it is able to drive them further apart. Give examples.

2. List the attempts made in the past to start a video call technology.

3. State why Skype finally became an attractive and successful internet video call provider.

4. The text gives examples of activities that can be performed via the internet. What do you think about internet-based courses? Exchange your views in class.

**Going beyond the text**

Do a survey (in your class, in your school, in your town) and interview people. Find out how they communicate using the internet. Transfer your results into a suitable graph (pie chart/bar chart) and present it in class.

**7.4.2.2 The Economist explains: How does China censor the internet?**

The first email sent from China, on September 14th, 1987, was optimistic: “Across the Great Wall we can reach every corner in the world.” Few of China’s 560m internet users now have such reach, however, because China tightly controls its people’s use of the internet. The “Freedom on the Net 2012” report, issued by Freedom House, an American organisation that tracks global trends in political freedom, ranked China as the third most restrictive country in the world when it comes to internet access, after Iran and Cuba (though this ranking excludes places such as North Korea, where ordinary people are not allowed to use the internet at all). How does China censor the internet?

The Chinese central government has two main ways of controlling what its citizens see on the web: the Great Firewall, as it is called by foreigners, which is a system of limiting access to foreign websites which started in the late...
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The Chinese central government has two main ways of controlling what its citizens see on the web: the Great Firewall, as it is called by foreigners, which is a system of limiting access to foreign websites which started in the late 1990s, and the Golden Shield, a system for domestic surveillance set up in 1998 by the Ministry of Public Security.

Separate government departments, along with local and provincial administrations, also have their own monitoring systems. China began by blocking a list of foreign websites, including Voice of America, human-rights organisations and some foreign newspapers. But its filters have become more sophisticated and can now selectively block specific pages within foreign websites, rather than making the entire site inaccessible. They can also block particular terms when they are used in search queries or instant messages.

Google is not blocked entirely; instead, users who search for banned keywords are blocked from Google for 90 seconds, though other websites remain available.

China’s many internet companies are regularly issued with lists of restricted keywords, and often censor blog posts and other content preemptively to avoid trouble with the authorities. In all there are thought to be around 100,000 people, employed both by the state and by private companies, policing China’s internet around the clock. Since 2005 the state has also paid people, known as the “50 Cent Party”, to post pro-government messages and steer online conversations away from sensitive topics.

China’s criteria for censoring the internet are slightly more subtle than foreigners often assume. In essence it applies the rules that have prevailed since the Tiananmen Square crackdown of 1989: do not jeopardise social stability, do not organise and do not threaten the party. Accordingly, criticism of mid-ranking officials is tolerated, particularly if it is in keeping with the government’s anti-corruption drive. But attacks on the senior leadership are swiftly removed (prompting Chinese internet users to refer to senior figures using nicknames or coded language, in an effort to stay ahead of the censors).

The most brutal restrictions are applied to any post that calls for offline protests or demonstrations – even for pro-government causes. The censorship system’s main goal is to prevent the internet from being used to co-ordinate or organise real-world political activity. In extreme cases, internet access may be cut off altogether, as happened for ten months in 2009, after riots in Xinjiang, a remote north-western region.

In short, China is having it both ways: it is allowing its citizens to benefit from the social and commercial aspects of the internet, while placing strict limits on its use for political activism. Other authoritarian governments consider China’s approach a model to be emulated. There is no doubt that microblogs such as Sina Weibo, the Chinese equivalent of Twitter, have given the public a new voice with which to demand more accountability from officials on issues such as corruption, food safety and air pollution.

But so far the government has managed to prevent the internet being used to campaign for broader political change. Indeed, by providing people with an outlet to vent their concerns and giving the illusion of public debate, the internet may even be delaying the radical changes that China needs.
Work with the text

1. State what the text associates with these dates:

   1987 • 1989 • 1998 • 2005 • 2009 • 2012

2. Describe how China has refined its technologies to block (parts of) foreign websites. Also refer to the role of filters, keywords and search terms in this process.

3. Explain what the measures are that Chinese authorities take to deal with criticism on the internet. Explain to what extent Chinese citizens can or cannot use the internet.

Going beyond the text

1. Name and describe some typical NGOs (non-government organisations) that use the internet successfully to promote their ideas on freedom, civil rights, humanitarian aid and the protection of the environment.

2. In contrast to China Germany is a democracy. But even in our country there are some restrictions regarding the use of the internet. Together with your classmates, discuss why it may sometimes be reasonable to censor the internet.

3. Read the five statements below. They deal with the problem of internet censorship.

   “We need to protect the children. Children need protection. Their parents will not always be sitting by them to make sure they are safe while using the internet. Of course, not all children are bad, but even on some game websites there are some links which will lead you to some immoral and inappropriate websites: So blocking these kinds of websites will make your children safe and let you relax.”

   “You want the truth? If you want the truth, find out about it yourself. At first hand. Not from some loud-mouth trolls or bullies who are so prevalent nowadays online. Plus there is more misinformation than real information online these days. So it’s even more confusing and scary. It stops progress. A business that is good but being bashed by one “unhappy” client, even though it’s the client’s fault, may actually close down. How is that a good thing?”

   “Everyone has the right to privacy. I think we should have privacy online. Parents and guardians should trust kids on the internet. Only 10% of kids actually do bad stuff on the internet, but what about the other 90%? Parents should stop stressing about their kids and read a book and relax. Children start obeying their parents and everyone will be happy.”

   “It’s a violation of the 1st Amendment. If you’re censoring things people are putting on the internet, it’s a violation of their freedom of speech and of the press and you can’t do that. Plus, the internet is the internet. Regular civilians aren’t the bosses of it. They can’t monitor everything that goes on there. […] Just because you, one worthless little person, think it’s corrupting kids or the internet as it was made, you’re way out of line.”

   “We don’t live in Communist China. You’ve seen how people are treated in China. They have no freedom of speech, even more so on the internet where it’s most valued. Emails are controlled by government officials to check for anti-government sentiments, and bloggers and other types of news officials are severely at risk of imprisonment if they’re found out by the government. It has shown to be oppressive in other countries, so why would you want it here.”