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«Professional English in Use. ICT. For Computers and the Internet»

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У91 **Учебно-методическое пособие** к учебнику «Professional English in Use. ICT. For Computers and the Internet» [Текст] / под ред. Т. А. Барановской, Т. П. Кашкаровой ; Нац. исслед. ун-т «Высшая школа экономики». — М.: Изд. дом Высшей школы экономики, 2013. — 224 с. — (Английский для профессионалов). — 600 экз. — ISBN 978-5-7598-0996-8 (в обл.).

Учебно-методическое пособие разработано преподавателями кафедры английского языка факультета экономики, которые ведут занятия на факультете бизнес-информатики и отделении программной инженерии НИУ ВШЭ. В ходе занятий со студентами по учебнику «Professional English in Use. ICT. For Computers and the Internet» Издательства Кембриджского университета (Cambridge University Press) со студентами НИУ ВШЭ возникла необходимость дополнить существующий курс глоссарием с русскоязычными соответствиями, заданиями на перевод и дополнительными заданиями, которые помогут совершенствовать навыки говорения. Цель создания пособия — помочь студентам и всем заинтересованным лицам расширить словарный запас и более комфортно ощущать себя в иноязычной профессиональной среде.

Рекомендуется как дополнительный компонент к учебному курсу «Professional English in Use. ICT. For Computers and the Internet» для российских студентов неязыковых вузов, имеющих уровень языковой подготовки не ниже «pre-intermediate» и обучающихся по специальности «бизнес-информатика» и «программная инженерия».

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UNIT 1

1. Vocabulary

assistive technology	вспомогательная технология
computer addiction	компьютерная зависимость
cybercrime	киберпреступность, киберкриминал, преступления в Интернете, сетевая преступность
design an on-line newspaper	делать дизайн электронной газеты
download files	загружать файлы
DVD (digital video disc) recorder	дисковое записывающее устройство
electronic waste	электронные отходы
GPS (Global Positioning System)	глобальная система навигации и определения положения
HMD (head-mounted display)	нашлемный дисплей
interactive whiteboard	интерактивная доска
loss of privacy	потеря права на частную жизнь
make calculations	делать вычисления
publish e-books	публиковать электронные книги

retouch photos	ретушировать фотографии
screen reader	экранный диктор, программное обеспечение, предназначенное для интерпретации происходящего на экране в голосовые сообщения, либо в шрифт Брайля
send e-mails	отправлять электронную почту
store information	хранить информацию
surf the Web	бродить по Интернету
technological dependence	компьютерная зависимость
virtual reality	виртуальная реальность
wireless network	беспроводная сеть
write letters and faxes	писать письма и факсы

2. Translate from Russian into English

2.1. Электронная почта представляет собой эффективный способ быстрого обмена текстовыми сообщениями и хранения их в электронном формате.
2.2. Компьютерные преступления включают широкий спектр незаконных действий, которые могут привести к потере права пользователя на личную жизнь.
2.3. Стремительное развитие технологии является причиной быстрого устаревания электронных устройств, избавление от которых вызывает проблему утилизации электронных отходов.
2.4. Беспроводные сети предоставляют возможности поиска в сети Интернет, а также скачивания и просмотра музыки и видео в цифровом формате в любой точке планеты.

2.5. Несмотря на свои преимущества, широкое использование компьютерных устройств во всех сферах жизни может вызвать компьютерную зависимость.
2.6. Многие печатные средства массовой информации предпочитают иметь электронные версии своих изданий, публикуемые в сети Интернет.
2.7. Для обработки фотографий на компьютере потребуется установка необходимого программного обеспечения.
2.8. Возможности технологии виртуальной реальности позволяют совершать действия, невозможные в реальном мире.
2.9. Составление графиков и таблиц является неотъемлемой частью работы служащих в сфере экономики.
2.10. Вспомогательные технологии значительно облегчают использование компьютера инвалидами.

3. Reading

3.1. Read the text

The Paperless Office: on Its Way, at Last

Stephanie Breedlove and her husband founded Breedlove & Associates 16 years ago to help families who hire a nanny with the crushing burden of paperwork that this entails. There are pay stubs to be sent, federal and state tax returns[1] to be filed, pay schedules[2] to be updated and other trails of exceedingly boring paper. Much of the firm's small office in Austin, Texas, is taken up by 100 paper-filled filing cabinets. An office manager spends 25 hours a week shuffling paper between desks and drawers. At peak times the office becomes "a sea of paper", with colour-coded stacks[3] on conference tables, floors and chairs.

With luck, this will soon be a thing of the past. Last year Breedlove decided to go paperless. It is now about halfway there, says Ms Breedlove. The constant flow

[1] Tax return — налоговая декларация.

[2] Pay schedule — график выплат.

[3] Stack — кипа, стопка.

of information between Breedlove and its clients now goes via e-mail, with forms attached as PDF files. The next step is to roll out an online service so that clients can log on to manage their accounts. Only the Internal Revenue Service[4] still insists on paper for some things but even it claims to be going electronic soon.

Fewer trees will die and less ink will be squirted, but that is not her primary motivation, she says. It is that everyone — clients and staff — is sick of paper. The clients tend to be young, middle-class families with toddlers; they are good with technology and already pay bills online, use e-tickets on planes, e-file their tax returns and Google recipes rather than using cookbooks. And Breedlove's 16 employees are in their 20s, native to Facebook and instant-messaging and baffled by the need for paper. Now everybody is happier. Next year the firm expects to be completely paperless.

A decade ago this scenario was brought up only in sardonic jokes. Instead of the paperless office promised by futurists, offices and homes seemed to be drowning in more paper than ever. In the digital era people were exchanging much more information, but neither technology nor behaviour had caught up. They were printing e-mails for archiving and Word documents for marking up by hand.

But as it turned out, that was the very year when demand for office paper began declining. Office workers in rich countries will reduce their consumption of paper year for the foreseeable future.

Older people still prefer a hard copy of most things, but younger workers are increasingly comfortable reading on screens and storing and retrieving information on computers or online.

As new generations of office workers leave university — where their class notes and syllabuses are online these days — they take their habits with them. They like digital information because it reduces clutter[5]. It can be "tagged" and thus filed into many folders instead of just one physical file. It can be searched by keyword. It can be cut, pasted and remixed. It allows for easier collaboration, through features such as "track changes". It can be shared across an ocean as easily as across a desk. Increasingly, it resides in the Internet "cloud" and can be accessed from anywhere, not just in the office. By contrast, paper tends to get torn, stained, burnt, soaked and lost.

Information thus appears to be becoming paperless roughly as transport has become horseless. When cars came along, the number of horses in America

[4] Internal Revenue Service — Налоговое управление США.

[5] Clutter — беспорядок.

dropped at first, but the number is now roughly back to where it was in the late 19th century. As a share of the trips people take, horses have become insignificant. But they are thriving for special occasions and sport. Paper, too, has a future — for the fine copy of the "Iliad", the women's fashion magazine and the memorable certificate. But nobody, least of all the staff at Breedlove, will shed a tear for those stacks of tax forms on the carpet.

Adapted from the "Economist", 9th October 2008

3.2. Comprehension tasks

3.2.1. Answer the questions to the text

1. What is the reason for an office to go paperless?
2. How is information exchange done in paperless office?
3. How can paperless office affect the environment?

3.2.2. Match the following statements as True or False

1. The reason to relieve the burden of paperwork and turn it electronic was to reduce clutter it creates and speed up the flow of information.
2. The clients and staff are unwilling to catch up the opportunities paperless office provides.
3. Digitizing information will inevitably entail the extinction of printed materials.

4. Discussion

4.1. Digital era made paperless office a reality but we shouldn't be totally dependent on computers to get work done because some information still requires physical presence at our sight.

4.2. Mass digitization will mean the end of some jobs, for example a postman, and many companies that supply office goods.

4.3. Some pieces of recorded information, like tax returns, are created to serve a temporary purpose and allowed to vanish but long-term value items of cultural heritage must be preserved in original.

UNIT 2

1. Vocabulary

CPU (central processing unit)	центральный процессор (ЦПУ)
hard disk drive	привод жесткого диска
hardware	аппаратное обеспечение
input devices	устройства ввода данных
keyboard	клавиатура
main memory	основная память, оперативная память
mouse	компьютерная мышь
output devices	устройства выхода данных
peripherals	периферийные устройства
RAM (random access memory)	оперативное запоминающее устройство (ОЗУ), память со случайным доступом
rom (read-only memory)	постоянное запоминающее устройство (ПЗУ)
software	программное обеспечение
storage device	запоминающее устройство
USB (universal serial bus)	интерфейс передачи данных для периферийных устройств)

USB port	USB-порт, интерфейс, обеспечивающий подключение к компьютеру цифровых и мобильных устройств

2. Translate from Russian into English

2.1. Основными задачами компьютера являются ввод и вывод информации, а также обработка и хранение данных.
2.2. Главные составляющие компьютера включают аппаратное и программное обеспечение.
2.3. Программное обеспечение представляет собой совокупность инструкций, данных, программ, которые обрабатываются компьютером.
2.4. Помимо механических и электронных частей в состав аппаратного обеспечения компьютера входят периферийные устройства.
2.5. В ПЗУ хранится критически важная для компьютера информация, которая не зависит от выбора операционной системы.
2.6. Для ввода и вывода данных к компьютеру подключаются внешние устройства, которые позволяют вводить информацию, подлежащую обработке (клавиатура, мышь), и выводить результаты этой обработки (монитор, принтер).
2.7. Среди устройств для хранения информации жесткий диск является ключевым компонентом системы ПК, так как он предназначен для долговременного хранения большинства программ и документов.
2.8. Преимущества DVD по сравнению с CD — предоставление более широких возможностей для управления записанной информацией, а также больший объем ее хранения.
2.9. Процессор получает данные для обработки из оперативной памяти — устройства, предназначенного для временного хранения как входных, так и выходных данных.

2.10. Порты ввода-вывода являются универсальными, позволяющими подключать неограниченное количество разнообразных внешних устройств, включая внешние накопители на жестких дисках, CD- и DVD-приводы, проигрыватели, флеш-карты.

3. Reading

3.1. Read the text

Back in Fashion

Geeks may roll their eyes at the news that Namibia is only now getting its first mainframe — a technology that most consider obsolete. Yet the First National Bank of Namibia, which bought the computer, is at the leading edge of a trend. Comeback is too strong a word, but mainframes no longer look that outdated.

Until the 1980s mainframes, so called because the processing unit was originally housed in a huge metal frame, ruled supreme[1] in corporate data centers. Since then, these big, tightly laced bundles of software and hardware have been dethroned by "distributed systems"[2], meaning networks of smaller and cheaper machines, usually not based on proprietary technology[3]. But many large companies still run crucial applications on the "big iron"[4]: there are still about 10,000 in use worldwide. Withdraw money or buy insurance, and in most cases mainframes are handling the transaction.

Some companies like mainframes because they are reliable, secure and easy to maintain. But others have no choice. Banks, for instance, use decades-old applications to manage customer accounts. Moving these programs to other computers would be expensive and sometimes impossible. Most firms that can move off the mainframe have already done so.

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[1] To rule supreme — играть важную роль, занимать главное место.

[2] Distributed system — распределительная система.

[3] Proprietary technology — несвободная технология, являющаяся собственностью автора.

[4] Big iron — «большая железяка» (прозвище сверхмощного большого компьютера).

High "switching costs" explain in large part why mainframes are still a good business for IBM. It is the only big firm left selling them, at prices that start at $100,000 but often reach the millions. Sales of mainframes are said to have brought in about $3.5 billion a year, on average, in the past decade. Although this is only about 3.5% of the firm's overall revenue, each dollar spent on hardware pulls in at least as much from sales of software and maintenance contracts.

To preserve its mainframe business, IBM has regularly modernised its line-up[5] of machines, lowering prices and improving performance. It has also given cash and computers to hundreds of universities and schools to get them to train replacements for retiring mainframe administrators.

In addition, IBM is trying to get customers to use mainframes for more functions. For some years it has offered specialised add-on processors at considerably lower prices, to run a greater variety of programs, mostly based on Linux, an open-source operating system. And last year IBM started bundling[6] mainframes with applications at a discount.

IBM is also trying to attract new customers, particularly in fast-growing emerging markets. Without mainframes, India's Housing Development Finance Corporation and the Bank of China in Hong Kong would have a hard time dealing with their explosive growth.

All these efforts have had a degree of success, although mainframe revenues have been badly hurt by the recession. About 1,300 firms, a third of IBM's mainframe customers, have bought add-ons enabling them to use Linux. But IBM is in legal trouble again, as it was in the 1970s. It is accused of abusing its mainframe monopoly by refusing to license software that allows other firms to build cheaper clones of its machines. Regulators in Washington and Brussels are looking into the case.

More worrying to IBM is a run-in with Neon, a software company. It sells a program that allows computing tasks that usually run on a mainframe's regular processors to be shifted to the discounted ones meant to run things like Linux. Predictably, IBM is not happy and is said to have threatened to charge higher licensing fees to customers using Neon's software. This, in turn, has led Neon to file a lawsuit against IBM. Defeat would make a big dent in IBM's mainframe revenues.

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[5] A line-up — ассортимент.

[6] To bundle — поставлять в комплекте.

Still, the computer industry seems to be moving IBM's way. The mainframe may well find a new home in corporate computing clouds, the pools of data-processing capacity many firms are building. Many companies are also increasingly interested in buying simpler, more integrated computer systems, even if this means a higher price. Reacting to this, IBM's rivals are making bets on mainframe-like products. On January 13th HP and Microsoft announced a pact to come up with tight packages of hardware and software. Brad Day of Forrester Research, another market-research group, puts it thus: "We are on the way back to the future".

Adapted from the "Economist", 16th November 2010

3.2. Comprehension tasks

3.2.1. Answer the questions to the text

1. What is a mainframe and where it can be found nowadays?
2. What makes mainframe producing a good business for IBM?
3. What is the future of mainframe-making?

3.2.2. Match the following statements as True or False

1. Mainframe computers are thought to be outdated and obsolete because of the recent fast developments in distributed systems, meaning networks of small and cheaper machines.
2. Large companies still use mainframes for their crucial applications because they are reliable, secure and easy to maintain.
3. Software companies file complaints accusing IBM of having abused its position in the mainframe market.

4. Discussion

4.1. Comment on the following opinion: "We are on the way back to the future".
4.2. Mainframe consumers are denied the ability to choose among the most appropriate hardware and software beyond IBM.
4.3. The revival of mainframes will affect the development of cutting-edge technologies, e.g. cloud computing.

UNIT 3

1. Vocabulary

mainframe	высокопроизводительный компьютер со значительным объемом оперативной и внешней памяти, предназначенный для выполнения интенсивных вычислительных работ
desktop pc	настольный компьютер
laptop	портативный компьютер
TFT (thin film transistor — тонкопленочный транзистор) screen	экран тонкопленочной технологии
touchpad	сенсорная панель
battery pack	батарея
tablet pc	планшетный компьютер
handheld device	портативное устройство
PDA (personal digital assistant)	персональный цифровой секретарь, карманный компьютер
stylus	стилус, компьютерное перо
touch screen	сенсорный экран

handwriting recognition	распознавание почерка
voice recognition	распознавание голоса
wearable computer	носимый компьютер

2. Translate from Russian into English

2.1. Ноутбук — это переносной персональный компьютер, который весит несколько килограммов. Время работы ноутбуков от аккумулятора находится в пределах от одного до четырех часов. Портативные компьютеры выполняют те же задачи, что и настольные компьютеры, хотя производительность ноутбука существенно ниже. Портативные компьютеры имеют жидкокристаллический дисплей. В добавление ко встроенной клавиатуре они могут содержать сенсорную панель или иное устройство для ввода, хотя к нему может подключаться внешний компьютерный манипулятор типа мыши или клавиатуры.

2.2. Планшетный компьютер — класс ноутбуков, оборудованных сенсорным экраном, которые позволяют работать при помощи стилуса или пальцев, как с использованием, так и без использования клавиатуры и мыши. Планшетный ПК удобен для чтения электронных книг и редактирования документов.

2.3. Карманный персональный компьютер — портативное вычислительное устройство, обладающее широкими функциональными возможностями. Изначально КПК предназначались для использования в качестве электронных органайзеров. В настоящее время КПК используются для доступа к офисным приложениям, чтения книг, проигрывания аудио и видео, выхода в Интернет.

2.4. Надеваемый компьютер можно носить на теле. Предоставляет возможность работать, общаться, развлекаться при помощи компьютера постоянно и иметь при этом полную свободу передвижения.

2.5. Мейнфрейм — высокопроизводительный компьютер со значительным объемом оперативной и внешней памяти, предназначенный для организации централизованных хранилищ данных большой емкости и выполнения интенсивных вычислительных работ.

2.6. Настольный компьютер — стационарный персональный компьютер, предназначенный для работы в офисе или в домашних условиях. Термин обычно используется для того, чтобы обозначить вид компьютера и отличить его от компьютеров других типов, например, портативного компьютера, карманного компьютера, встроенного компьютера или сервера.

3. Reading

3.1. Read the text

The Liquefaction of Hardware

Imagine a personal computer that has two souls. One moment it is your work machine, complete with a set of corporate applications and tight security settings. Then it becomes an entertainment centre, allowing you to watch any video and download any program.

Thanks to a process called “virtualisation”, such computers are now being created. Ever more processing power and clever software are allowing devices of all kinds to separate from their hardware vessels and move to new homes. If this process continues as some expect, it will change computing radically. And more than one IT company will have to rethink how it does business.

Virtualisation dates back to the age of mainframe computers. To make better use of them they were sometimes split into smaller “virtual machines”, each of which could run its own operating system and application.

The success of server virtualisation has inspired IT firms and their customers to do the same thing with other types of hardware, such as devices to store data. Software now pools their capacity and allocates “virtual disks” as needed. Even

large files can take only seconds to upload if they already exist somewhere on one of these firms' disks.

The virtualisation of PCs is now under way. Many company computers can already work with applications that run on a central server. But start-ups are pushing the concept further. Desktone offers virtual desktops as an online service. NComputing, a maker of computer terminals, virtualises PCs so they can be shared by up to 30 users. It has already sold more than 2.5m devices, mostly to developing countries and schools. And technology from MokaFive can send an entire virtual machine — complete with operating systems, applications and data — over the network and install it on any PC. Eventually people may no longer need to carry laptops at all. Virtual computers, including data and applications, will follow them everywhere.

In the long run, smartphones and other mobile devices may also become shells to be filled as needed. Open Kernel Labs already lets smartphones run applications, multimedia and radio functions on a single processor, cutting manufacturing costs. Software from Citrix turns the iPad, Apple's tablet computer, into a terminal for applications that run in a corporate data centre.

There is certainly no lack of demand in virtualization. Virtualisation lowers costs by enabling firms to make better use of their servers and buy fewer new ones. The technology also allows PCs to be maintained remotely, which is much cheaper. But improved reliability and security are even more of an attraction. Users, for instance, can relaunch their virtual machine should a computer virus infect it. And it can be shut down if a laptop is lost or stolen.

Yet the technology also has to overcome a few hurdles. The virtualisation of servers is well understood, but for PCs and mobile devices the technique has yet to mature. In the longer run institutional barriers will prove more of a problem. Virtualising IT systems is only the first step to automating the management. This is seen as a threat to existing workers and makes many IT departments hesitant to embrace the technology.

Still, analysts believe virtualisation will win out. Its impact will be felt through the industry. The technology not only makes IT systems more flexible, but allows firms to switch vendors more easily — which will weigh on the vendors' profits.

Moreover, virtualisation makes it much easier to add new servers or storage devices. Alternatively, firms can simply rent extra capacity from operators of what are called "computing clouds", such as Amazon Web Services. That outfit has built a network of data centres in which virtual machines and disks can be launched in seconds. As a result, IT systems will increasingly no longer be a capital expense, but an operational cost, like electricity.

Yet the most noticeable change for computer users will be that more employees will be allowed to bring their own PC or smartphone to work. Companies can install a secure virtual heart on private machines, doing away with the need for a separate corporate device. A "bring your own computer" or "BYOC" movement has already emerged in America. Companies pay their employees a stipend, which they can use to buy any PC they want — even an Apple Mac.

Such innovations may help to ease growing tensions between workers and IT departments. New privacy regulations and rampant cybercrime are pushing firms to tighten control of company PCs and smartphones. At the same time more and more "digital natives" enter the workforce. They have grown up with the free-wheeling Internet and do not suffer boring black corporate laptops gladly. Giving workers more freedom while helping firms keep control may prove to be the biggest benefit of virtualisation.

Adapted from the "Economist", 18th November 2010

3.2. Comprehension tasks

3.2.1. Answer the questions to the text

1. What is the origin of virtualization?
2. What are the recent developments of start-up companies?
3. What are the benefits of virtualization?
4. What are the hurdles that virtualization has to overcome?

3.2.2. Match the following statements as True or False

1. Virtualization dates back to the age of transistors.
2. Virtualization allows PCs to be maintained remotely, which is much cheaper.
3. The complete automation of the IT management is a threat to existing workers.

4. Discussion

4.1. Security and reliability are the greatest concerns that slow down virtualization.
4.2. Virtualization not only makes IT systems more flexible, but allows firms to rethink how they do business.
4.3. One of the primary goals of virtualization is making the most efficient use of available system resources which contributes to green computing.

UNIT 4

1. Vocabulary

numeric keypad	цифровая клавиатура
alphanumeric keys	буквенно-цифровые клавиши
barcode reader	устройство для считывания штрихкода
cursor keys	клавиши курсора
dedicated keys	клавиши-модификаторы
function keys	функциональные клавиши
graphics tablet	графический планшет
light pen	световое перо
pointer	указатель
to click	нажать кнопку мыши
to double-click	нажать кнопку мыши дважды
to drag	перетаскивать
to right-click	нажать правую кнопку мыши
touchpad	сенсорная панель
touch-screen	сенсорный экран
voice-recognition system	система распознавания речи

2. Translate from Russian into English

2.1. Сканер — устройство для ввода графических изображений и текста с целью последующего преобразования данных в цифровой формат.

2.2. Сканер штрихкода — устройство для считывания штрих кода с упаковки товара и передачи этой информации в компьютер. Сканеры штрихкода широко используются в сфере торговли для быстрой идентификации товара.

2.3. Графический планшет — это устройство для ввода рисунков от руки непосредственно в компьютер. Состоит из светового пера и плоского планшета, чувствительного к нажатию или близости пера.

2.4. Клавиатура — устройство, представляющее собой набор клавиш, предназначенных для управления каким-либо техническим или механическим устройством или для ввода информации. По своему назначению клавиши на клавиатуре делятся на следующие группы: функциональные, алфавитно-цифровые, управления курсором, модификаторы, цифровая панель и специализированные.

2.5. Сенсорный экран — устройство ввода-вывода информации, представляющее собой экран, реагирующий на прикосновения к нему. Сенсорные экраны используются в банкоматах, информационных киосках, оборудовании для автоматизации торговли, карманных компьютерах.

2.6. Сенсорная панель — устройство ввода, применяемое чаще всего в ноутбуках, используется для управления «указателем» путем перемещения пальца по поверхности устройства.

2.7. Мышь — механический манипулятор, преобразующий механические движения в движение курсора на экране. Основной элемент мыши — кнопки (от 1 до 4), с помощью которых можно выбирать объект, перемещать его, прокручивать страницу, запускать приложения, осуществлять двойные щелчки.

2.8. Голосовой ввод данных — это альтернатива клавиатурному вводу данных. При помощи микрофона компьютер должен воспринять полезную информацию, содержащуюся в человеческой речи, и преобразовать ее в цифровую форму.

2.9. Веб-камера — цифровая видео- или фотокамера, способная в реальном времени фиксировать изображения, предназначенные для дальнейшей передачи по сети Интернет.

2.10. Джойстик — устройство ввода информации, представляющее собой манипулятор, с помощью которого можно задавать координаты графического объекта. Джойстик широко применяется в компьютерных играх, но также может использоваться для других целей.

3. Reading

3.1. Read the text

Touching the Future

The proliferation[1] of touch screens in electronic devices over the past two or three years has been so rapid that you may have found yourself trying to press an on-screen button or icon when sitting at your computer only to realize that it is not a touch screen. Many mobile phones now have touch-screen interfaces, as do satellite-navigation systems and portable games consoles.

So the touch screen could be on the verge of becoming a standard part of computer interfaces, just as the mouse did in the 1980s. Many people thought that would never happen: surely switching between keyboard and mouse would slow people down and make them less productive? In fact, mouse-driven interfaces can be far more efficient, at least for some tasks. The same seems likely to be true of touch-screen interfaces. The touch screen will probably not replace the mouse and keyboard, but will end up being used for some tasks.

Today countless supermarket checkouts[2], restaurant tills[3], automated-teller machines[4], airport check-in kiosks[5], museum information-booths[6] and voting ki-

[1] Proliferation — распространение.

[2] Checkout — касса в магазине самообслуживания.

[3] Till — кассовый аппарат.

[4] Automated teller machine (ATM) — банкомат.

[5] Check-in kiosk — стойка регистрации.

[6] Information booth — справочное бюро.

osks use touch screens. In these situations, touch screens have many advantages over other input methods. That they do not allow rapid typing does not matter; it is more important that they are hard-wearing, weatherproof and simple to use.

But breaking into the consumer market was a different matter entirely. Some personal digital assistants had touch screens. But the PDA market has been overshadowed by the rise of advanced mobile phones that offer similar functions, combined with communications. Furthermore, early PDAs did not make elegant use of the touch-screen interface. When there was a touch interaction, it wasn't beautiful.

That is why the iPhone matters: its use of the touch screen is seamless[7], intuitive and visually appealing. When scrolling quickly through lists, for example, the lists keep moving, apparently under their own momentum. On-screen objects behave in physically realistic ways.

Until recently, the computing power and graphics capabilities of desktop computers, let alone hand-held devices, were not good enough for elegant touch-screen interfaces to work. And even if they had been sufficient, the public might not have been ready for such interfaces. In the 1990s people were still getting used to Windows 95. But right now the public is ready — even the most lay person can use a mouse.

Another factor that has held back touch screens is a lack of support for the technology in operating systems. This is a particular problem for multi-touch interfaces. Modern operating systems, driven by keyboards and mice, are unable to cope with a system that is, in effect, like connecting several mice at once. Instead, they are based on the idea of a single cursor that glides from one place to another. In developing touch screens, it's necessary to create a separate operating system because Windows and Linux really don't understand more than a single point.

Microsoft is also developing gestures, and Apple has already introduced several of its own on its multi-touch enabled laptops, such as two-fingered dragging to scroll, and three-fingered flicking[8] to go forward or back a page in a Web browser. The danger is that a plethora[9] of different standards will emerge, and that particular gestures will mean different things to different devices. Ul-

[7] Seamless — безупречный.

[8] Clicking — щелканье.

[9] Plethora — изобилие.

timately, however, some common rules will probably emerge, as happened with mouse-based interfaces. Double-clicking didn't used to be universal, but now it is accepted as the standard way to open a program or document on most computers.

What will be done with multi-touch and pressure-sensitive screens is still unclear. A lot of the applications have yet to be developed that really take advantage of this technology. But touch screens seem likely to become more widespread in desktop PCs, laptops and mobile phones. Despite the iPhone's success, it may prove to be PCs, rather than hand-helds, that benefit the most from touch-screen technology. That is because touch screens, like mice, are best suited to manipulating information, rather than inputting it in the first place — an area in which keyboards remain unchallenged. PCs with keyboards and touch screens (not to mention mice or trackpads too) could offer the most flexibility, letting users choose the appropriate input method for each task.

Adapted from the "Technology Quarterly", 4th September 2008

3.2. Comprehension tasks

3.2.1. Answer the questions to the text

1. What is the realm of touch-screen interfaces?
2. What prevented touch-screen devices to break into the consumer market in the 1990s?
3. What challenges computer-makers can stumble across in the area of touch-screen standards development?

3.2.2. Match the following statements as True or False

1. Traditional input devices such as a keyboard and a mouse will be replaced by touch-screen interfaces.
2. The most appropriate input method is the combination of traditional input devices and touch-screen interface.
3. Touch-screen interface hasn't broken onto the public scene until both consumers and technologies were ready to accept it.

4. Discussion

4.1. The proliferation of touch screens will cause the extinction of physical keyboards.

4.2. Comment on the following statement: "Despite the iPhone's success, it may prove to be PCs, rather than hand-holds, that benefit the most from touch-screen technology".

4.3. Seamlessness, elegance, intuition and visual appeal are critical moments for the integration of touch screen interface.

UNIT 5

1. Vocabulary

fingerprint	отпечаток пальца
take someone's fingerprints	снимать отпечатки пальцев
pop up	появляться неожиданно [informal]
biometrics	биометрия
optical scanning	оптическое сканирование
capacitance scanning	емкостное сканирование
charge coupled device (CCD)	ПЗС, прибор с зарядовой связью
sensor	датчик
expose	делать видимым
magnetic strip	магнитная полоса
physical evidence	вещественное доказательство
fake	фальсифицировать, подделывать
infallible	безошибочный, непогрешимый, надежный
automated teller machine (ATM) [AM] */am/*	банкомат (in BRIT, use "cash dispenser")
integral	неотъемлемый, существенный

2. Translate from Russian into English

2.1. Сканер преобразует текстовую и графическую информацию в цифровую форму.
2.2. Сканеры различаются по скорости сканирования и разрешающей способности.
2.3. Данные результатов сканирования передаются в компьютер в цифровой форме с целью последующей обработки или хранения в виде файлов.
2.4. Разрешение сканера указывается в точках на дюйм.
2.5. Сканеры штрихкодов и другие системы оптического распознавания символов являются примером автоматизированного ввода информации.
2.6. Автоматизированный ввод данных исключает ошибки, неизбежные при вводе информации с клавиатуры.
2.7. Современные сканеры штрихкода не только считывают информацию со штрихкода товара и передают ее в компьютер, но также распознают и расшифровку штрихкода.
2.8. 3D-сканер анализирует свойства и форму физического объекта и на основе полученных данных создает его 3D-модель.
2.9. Биометрический сканер превосходит по степени защиты предыдущие способы идентификации.
2.10. Видеокамера — это фотокамера для получения движущихся изображений.

3. Reading

3.1. Read the text

How Fingerprint Scanners Work

Computerized fingerprint scanners up until recently were pretty exotic technology in the real world. In the past few years, however, scanners have started popping

up all over the place — in police stations, high-security buildings and even on PC keyboards. You can pick up a personal USB fingerprint scanner for less than $100, and just like that, your computer's guarded by high-tech biometrics. Instead of, or in addition to, a password, you need your distinctive print to gain access.

Human beings happen to have built-in, easily accessible identity cards, i.e. tiny ridges of skin on their fingers. Fingerprints are a unique marker for a person, even an identical twin. And while two prints may look basically the same at a glance, a trained investigator or an advanced piece of software can pick out clear, defined differences.

A fingerprint scanner's job is to take the place of a human analyst by collecting a print sample and comparing it to other samples on record. It needs to get an image of your finger, and it needs to determine whether the pattern of ridges and valleys in this image matches the pattern of ridges and valleys in pre-scanned images.

There are a number of different ways to get an image of somebody's finger. The most common methods today are optical scanning and capacitance scanning. The heart of an optical scanner is a charge coupled device (CCD), the same light sensor system is used in digital cameras and camcorders.

The scanning process starts when you place your finger on a glass plate, and a CCD camera takes a picture. If the processor finds that the image is crisp and properly exposed, it proceeds to comparing the captured fingerprint with fingerprints on file.

Like optical scanners, capacitive fingerprint scanners generate an image of the ridges and valleys that make up a fingerprint. But instead of sensing the print using light, the capacitors use electrical current.

There are several ways a security system can verify that somebody is an authorized user. Most systems are looking for one or more of the following:

- what you have;
- what you know;
- who you are.

To get past a "what you have" system, you need some sort of "token", such as an identity card with a magnetic strip. A "what you know" system requires you to enter a password or PIN number. A "who you are" system is actually looking for physical evidence that you are who you say you are — a specific fingerprint, voice or iris pattern.

"Who you are" systems like fingerprint scanners have a number of advantages over other systems. To name few:

- Physical attributes are much harder to fake than identity cards.
- You can't guess a fingerprint pattern like you can guess a password.
- You can't misplace your fingerprints like you can misplace an access card.
- You can't forget your fingerprints like you can forget a password.

But, as effective as they are, they certainly aren't infallible, and they do have major disadvantages. Optical scanners can't always distinguish between a picture of a finger and the finger itself, and capacitive scanners can sometimes be fooled by a mold of a person's finger. If somebody did gain access to an authorized user's prints, the person could trick the scanner. In a worst-case scenario, a criminal could even cut off somebody's finger to get past a scanner security system. Some scanners have additional pulse and heat sensors to verify that the finger is alive, rather than a mold or dismembered digit, but even these systems can be fooled by a gelatin print mold over a real finger.

To make these security systems more reliable, it's a good idea to combine the biometric analysis with a conventional means of identification, such as a password (in the same way an ATM requires a bank card and a PIN code).

The real problem with biometric security systems is the extent of the damage when somebody does manage to steal the identity information. If you lose your credit card or accidentally tell somebody your secret PIN number, you can always get a new card or change your code. But if somebody steals your fingerprints, you're pretty much out of luck for the rest of your life. You wouldn't be able to use your prints as a form of identification until you were absolutely sure all copies had been destroyed. There's no way to get new prints.

But even with this significant drawback, fingerprint scanners and biometric systems are an excellent means of identification. In the future, they'll most likely become an integral part of most peoples' everyday life, just like keys, ATM cards and passwords are today.

3.2. Comprehension tasks

3.2.1. Answer the following questions

1. What is the basic idea of fingerprint analysis?
2. What is the main difference between optical scanning and capacitance scanning?

3. What are the main ways of identifying an authorized user?
4. How do fingerprint scanner security systems stand out against conventional password and identity card systems?
5. What are the main drawbacks of fingerprint scanners?
6. What favors the security systems reliability?

3.2.2. Match the following statements as True or False

1. Both optical and capacitive fingerprint scanners sense the fingerprint using electrical current instead of light.
2. Everyone's fingerprints are different, and you can't guess a fingerprint pattern.
3. The mixture of fingerprints and passwords can ensure the reliability of security systems.
4. Optical scanners can't mix up with a picture of a finger and the finger itself.

4. Discussion

4.1. Describe your own scanner. Use the new terms.
4.2. Is it possible to defend yourself against identity theft using fingerprint scanners? State your opinion.
4.3. What scanner is the ideal one for general-purpose use and for the enlarging and editing photographs. State your opinion.

References

http://www.howstuffworks.com/fingerprint-scanner.htm

UNIT 6

1. Vocabulary

mock-up */n/*	экспериментальная модель, макет (в натуральную величину)
workshop */n/*	цех
entrepreneur */n/*	бизнесмен, делец, предприниматель
high-end */adj/*	высококачественный; с широкими функциональными возможностями
dispense */v/*	раздавать, делить, распределять
elaborate */adj/*	детально разработанный; усовершенствованный
alloy */n/*	сплав
aerodynamic ducting	воздуховод
jet-fighter */n/*	реактивный истребитель
assemble */v/*	собирать, монтировать

2. Translate from Russian into English

2.1. Струйный принтер работает путем разбрызгивания ионизированных чернил по листу бумаги.

2.2. Работа со струйными принтерами предполагает значительные затраты на сменные картриджи, а также быстрое пересыхание красок.
2.3. Лазерные принтеры используют электрографический принцип переноса изображения на светочувствительный барабан при помощи луча лазера.
2.4. Плоттер — это устройство вывода графической информации на бумагу или пленку.
2.5. Матричный тип принтеров считается устаревшим; они демонстрируют плохое качество печати при высоком уровне шума и низкой скорости.
2.6. Драйвер принтера — это программа, позволяющая приложениям в определенной операционной среде взаимодействовать с принтером корректно, независимо от их типа.
2.7. Драйверы принтеров разных производителей могут различаться как удобством выполнения простейших функций, так и набором дополнительных возможностей печати.
2.8. Современные многофункциональные принтеры имеют встроенные возможности двусторонней печати, сортировки, масштабирования, электронной отправки факсов и сканирования в удаленную папку.
2.9. Скорость печати принтера определяется количеством страниц в минуту.
2.10. 3D-принтер, выполняя большинство операций автоматически, создает физический объект на основе виртуальной 3D-модели.

3. Reading

3.1. Read the text

Case History

An increasing number of things, from mock-ups of new consumer products to jewellery and aerospace components, are being produced by machines that build objects layer by layer, just like printing in three dimensions. The general term the industry uses for this is “additive manufacturing”, but the most widely used devices are called 3D printers. They are making their way not just into workshops and factories, but also into the offices of designers, architects and researchers, and

are being embraced by entrepreneurs who are using them to invent entirely new businesses.

The 3D printers currently available use a variety of technologies, each of which is suited to different applications. They range in price from under $10,000 to more than $1m for a high-end device capable of making sophisticated production parts. Depending on the size of the object, the material it is made from and the level of detail required, the printing process takes around an hour for a relatively small, simple object that would fit into the palm of your hand, and up to a day for a bigger, more sophisticated part. The latest machines can produce objects to an accuracy of slightly less than 0.1 mm.

The ability of 3D printers to speed up the design process will have a big impact on industry. Machines can produce not only solid things out of plastic-type materials, but complex ones with moving parts too, such as a working model of a bicycle chain or a small gearbox. And they can print objects in multiple materials, such as a plastic remote-control unit with rubbery buttons.

The first step in all 3D printing processes is for software to take cross-sections through the part to be created and calculate how each layer needs to be constructed.

Such machines build up objects, a layer at a time, by dispensing a thin layer of liquid resin and using an ultraviolet laser, under computer control, to make it harden in the required pattern of the cross-section. The build tray then descends, a new liquid surface is applied and the process is repeated. At the end, the excess soft resin is cleaned away using a chemical bath.

It is anticipated that the market will be developing in two directions. On one hand, there will be more demand for cheaper and simpler 3D printers capable of quickly turning out concept models, which are likely to sit on the desks of engineers and designers. On the other hand, there will also be demand for more elaborate machines with added features and higher performance, the most elaborate of which will provide a cost-effective way to manufacture thousands, and perhaps even tens of thousands, of components. Today's rapid prototyping, in other words, will shade into tomorrow's rapid manufacturing. There is a close analogy with the development of document printers, which range from small, cheap devices for home use to industrial printing presses capable of producing high-quality glossy magazines.

Today's largest and most expensive 3D printing machines, capable of directly producing complex plastic, and metal and alloy components, are becoming in-

creasingly popular in the consumer-electronics, aerospace and carmaking industries. It is not just their ability to make a small number of parts, without having to spread the massive toolup costs of traditional manufacturing across thousands of items, that makes these machines useful. They can also be used to build things in different ways, such as producing the aerodynamic ducting on a jet-fighter as a single component, rather than assembling it from dozens of different components, each of which has to be machined and tested.

Many in the industry believe that low-cost 3D printers for the consumer market will eventually appear. A new model was launched costing less than $10,000. That may sound a lot, but it is what laser printers cost in the early 1980s, and they can now be had for less than $100.

Medical applications of 3D printing also have a lot of potential. It is already possible to print 3D models from the digital slices produced by computed-tomography scans. These can be used for training, to explain procedures to patients and to help surgeons plan complex operations. Some hospitals have started using 3D printing to produce custom-made metallic and plastic parts to be used as artificial implants and in reconstructive surgery.

3.2. Comprehension tasks

3.2.1. Answer the questions to the text

1. What activity categories have 3D printers been penetrating?
2. What is the price range for 3D printers?
3. What are the reasons to assert that 3D printers have an effect on industry?
4. How long does the printing process last?
5. How does 3D printer operate?
6. What are the main trends of 3D market development?
7. What indicates that 3D printers are entering the consumer market?
8. How can 3D printers be applied in medicine?

3.2.2. Match the following statements as True or False

1. The duration of the 3D printing process depends on the volume of the object.
2. 3D printing technology is already being applied today in a variety of areas excluding the automobile industry.

3. 3D printers will shortly be available for home use because the machines are becoming more affordable.
4. 3D printing technology is significant for space exploration, where special parts are needed in very small amounts, and mass production isn't worthwhile.

4. Discussion

4.1. When choosing a type of printer, you first must determine your printing needs. When comparing printers, consider the real cost of use, not just the purchase price.

• If you expect to print color documents or photographs what printer will most likely be the best choice? State your opinion.

• If you expect to print double-sided documents what printer will most likely be the best choice? State your opinion.

• If you expect to print black and white documents, manuals or business cards and brochures in large quantities what printer will most likely be the best choice? State your opinion.

4.2. Describe draws and drawbacks of your own printer.

References

http://www.economist.com/node/14299512

UNIT 7

1. Vocabulary

aspect ratio	коэффициент пропорциональности
LED (light-emitting diode)	светодиод
backlighting, backlit, back light	задняя подсветка
response time	время отклика
color saturation	цветовое насыщение
viewing angle	угол обзора
touch screen	сенсорный экран
glare /*n*/	блики (на экране дисплея)
power consumption	потребляемая мощность
hookup /*n*/	подключение, присоединение
full-featured	полнофункциональный

2. Translate from Russian into English

2.1. ЖК-мониторы, пришедшие на смену ЭЛТ-мониторам, обеспечивают высокое качество изображения, гораздо меньше утомляют глаза и свободны от излучений.

2.2. Управление ЖК-мониторами осуществляется тонкопленочными транзисторами.

2.3. Увеличение яркости экрана приводит к увеличению потребляемой электроэнергии и сокращает время работы от батареи.
2.4. Возможность увеличить разрешение экрана зависит от размера и возможностей монитора, а также от типа используемого видеоадаптера.
2.5. Разрешение экрана определяется количеством точек на экране по горизонтали и по вертикали.
2.6. При выборе дисплея необходимо ориентироваться на четыре фактора: размер, разрешение, соотношение сторон (обычный или широкоформатный) и тип дисплея (матовый или глянцевый).
2.7. Для просмотра высококачественного HD-видео на компьютере предпочтителен широкоформатный монитор с соотношением длины к ширине 16 : 9.
2.8. Особенностью плазменных панелей является то, что они, как правило, имеют яркость ниже, чем LCD-телевизоры.
2.9. Один из главных недостатков ЖК-телевизоров — это низкая глубина черного цвета.
2.10. Частота обновления экрана ПК синхронизируется с частотой графического адаптера.

3. Reading

3.1. Read the text

Trends in PC Displays

While some of the basic display trends certainly apply to PC displays — new aspect ratios, lower-power displays, and LED backlighting, for instance — other things are unique to desktop monitors and notebook displays.

The top five brands account for over half of all PC display sales. The top three, HP, Acer, and Dell, together account for over half of all notebook sales.

On the technology front for desktop monitors, 16 : 9 and 16 : 10 became the dominant aspect ratios in 2009, though large enterprises are still using older 5 : 4 and 4 : 3 aspect ratios. LED backlighting is in just a small percentage of the market (less than 10 percent) but increasing. Fast response time, better color saturation,

and wide viewing angles are the technologies that monitor makers have focused on. 3D is just starting, with an emphasis on gaming. The average size of a desktop monitor is getting slightly bigger, but not by much.

Touch screens have grown in all-in-ones in part because they work well in retail environments, even if people don't use them all that much at home. But, many companies have pushed out their plans or made touch screens an option because of panel price increases towards the end of last years.

For notebooks, there has been an even faster transition to the 16 : 9 aspect ratio. LED backlights are now in over 70 percent of that market, because the display is a much smaller part of the cost of a notebook than it is of a monitor. The focus has been on glossy screens with reduced glare, and lower power consumption.

Glossy screens, have vibrant colors and the highest contrast and brightness because they have a smooth, high-gloss surface. As a result, it is often the choice for movies or gaming. However, strong lighting causes glare on these screens which is very annoying and may cause eye fatigue. You can also see reflections on the screen. Some graphics designers may also find the colors inaccurate. Glossy will work great for you if the lighting in your room doesn't create any glare on the screen. Matte screens don't get glare or reflections on them, however, suffer from less contrast and brightness.

On notebooks, the average size has actually gone down a little bit, partly because of the move to 16 : 9 displays and partly because of the move to "mini-notes" (which have stabilized at an average 10.1-inch screen).

Multifunction monitors are expected to be a growth area. They give home users the ability to browse the Internet or work on an e-mail while watching a baseball game in a small TV window – or just sitting back between tasks and toggling between channels on a full screen with a remote control. Business users can be working on a spreadsheet at the same time they keep up with stock fluctuations through CNN. These displays even offer additional video and audio hookups that enable the user to connect the monitors to devices such as DVD players and video game consoles. The most recent multifunction displays are also designed to work independently of the PC, meaning that TV functionality is available even when the computer is off. The list of features can get so extensive that multifunction monitors are good enough to replace full-featured LCD TVs for small room and office set ups.

Laptop sales were being driven by multi-PC households, with the market moving from one PC per household to one PC per person and the primary usage location for a home laptops has moved from the home office to the living room.

Netbooks might increase the trend to multiple PCs per person as people who buy netbooks for travel are also using larger laptops at home. The laptop market is now seeing diversification based on different size screens, with 18.4 — in notebooks now selling to gamers, and with younger customers gravitating toward more portable machines than the traditional 15-inch size.

All-in-one refers to a desktop computer that houses every component except the keyboard and mouse inside the same case as the monitor.

References

http://www.pcmag.com
www.squidoo.com/matte-vs-glossy-screens

3.2. Comprehension tasks

3.2.1. Answer the following questions

1. What are the basic display trends for desktop monitors?
2. What are the reasons making touch screens an option?
3. What are the basic display trends for notebook monitors?
4. What is the concept behind multifunction monitors?
5. What is the outlook for laptop and netbook sales?

3.2.2. Match the following statements as True or False

1. The trend for LED backlighting in desktop monitors is decreasing.
2. Modern notebook screens consume more power.
3. Glossy displays provide bright, saturated and accurate colors, but glare can be particularly noticeable on these types of displays.
4. TV programmes can be accessed with the multifunction displays when the computer is switched off.
5. The laptop market is rather stable.

4. Discussion

4.1. Compare LCD and plasma TV.

4.2. Bear in mind that choosing between LCD and plasma, you're actually selecting between two competing technologies.

4.3. Answer the following questions.

- What advantages does plasma have over LCD?
- What advantages does LCD have over plasma?
- Which one is an ideal for you?

UNIT 8

1. Vocabulary

install */v/*	устанавливать; инсталлировать (программу)
suite of software	набор программных продуктов
load */v/*	загружать (память или в память)
log in */v/*	входить в систему
remote machine	удаленная машина
workload */n/*	рабочая нагрузка; объем работы
shift */n/*	сдвиг; смещение; смена регистра
middleware */n/*	межплатформенное ПО, связующее ПО
set of rules	инструкция
redundancy */n/*	избыточное оборудование, резерв
streamlined */adj/*	модернизированный, рационализированный

2. Translate from Russian into English

2.1. Центральный процессор производит вычисления, выполняет команды и осуществляет обмен информацией между остальными частями компьютера.

2.2. Центральный процессор физически представляет собой интегральную микросхему.
2.3. Когда вы вводите команду с вашей клавиатуры, центральный процессор обрабатывает команду и запрашивает данные, которые будут скопированы с запоминающего устройства.
2.4. Преимущества компьютера на базе 64-разрядного процессора: возможность использования большого объема памяти; способность обрабатывать большие числа с плавающей точкой.
2.5. БИОС представляет собой набор программ проверки и обслуживания аппаратуры компьютера и отвечает за тестирование и начальную загрузку системы.
2.6. ОЗУ представляет собой рабочую память компьютера и определяет размер и число программ, которые могут выполняться одновременно, а также количество данных, которые могут быть немедленно обработаны.
2.7. В отличие от ОЗУ, постоянная память остается неизменной при отключении электропитания.
2.8. ПЗУ представляет собой полупроводниковую память, из которой можно читать, но в которую нельзя записывать.
2.9. Материнская плата связывает все электронные компоненты компьютера и отвечает за обмен данными между ними.
2.10. Тактовый генератор — это устройство, генерирующее периодические сигналы, используемые для синхронизации других устройств или передачи данных.

3. Reading

3.1. Read the text

Cloud Computing

Although cloud computing is an emerging field of computer science, the idea has been around for a few years. It's called cloud computing because the data and applications exist on a "cloud" of Web servers.

Instead of installing a suite of software for each computer, you'd only have to load one application. That application would allow workers to log into a Web based service which hosts all the programs the user would need for his or her job. Remote machines owned by another company would run everything from e-mail to word processing to complex data analysis programs. It's called cloud computing, and it could change the entire computer industry.

In a cloud computing system, there's a significant workload shift. Local computers no longer have to do all the heavy lifting when it comes to running applications. The network of computers that make up the cloud handles them instead. Hardware and software demands on the user's side decrease. The only thing the user's computer needs to be able to run is the cloud computing system's interface software, which can be as simple as a Web browser, and the cloud's network takes care of the rest.

When talking about a cloud computing system, it's helpful to divide it into two sections: the front end and the back end. They connect to each other through a network, usually the Internet. The front end is the side the computer user, or client, sees. The back end is the "cloud" section of the system.

The front end includes the client's computer /or computer network) and the application required to access the cloud computing system. On the back end of the system are the various computers, servers and data storage systems that create the "cloud" of computing services. In theory, a cloud computing system could include practically any computer program you can imagine, from data processing to video games.

A central server administers the system, monitoring traffic and client demands to ensure everything runs smoothly. It follows a set of rules called protocols and uses a special kind of software called middleware. Middleware allows networked computers to communicate with each other.

If a cloud computing company has a lot of clients, there's likely to be a high demand for a lot of storage space. Some companies require hundreds of digital storage devices. Cloud computing systems need at least twice the number of storage devices it requires to keep all its clients' information stored. That's because these devices, like all computers, occasionally break down. A cloud computing system must make a copy of all its clients' information and store it on other devices. The copies enable the central server to access backup machines to retrieve data that otherwise would be unreachable. Making copies of data as a backup is called redundancy.

The applications of cloud computing are practically limitless. With the right middleware, a cloud computing system could execute all the programs a normal computer could run.

Why would anyone want to rely on another computer system to run programs and store data? Here are just a few reasons:

- Clients would be able to access their applications and data from anywhere at any time. They could access the cloud computing system using any computer linked to the Internet. Data wouldn't be confined to a hard drive on one user's computer or even a corporation's internal network.
- It could bring hardware costs down. Cloud computing systems would reduce the need for advanced hardware on the client side. You wouldn't need to buy the fastest computer with the most memory, because the cloud system would take care of those needs for you. Instead, you could buy an inexpensive computer terminal. The terminal could include a monitor, input devices like a keyboard and mouse and just enough processing power to run the middleware necessary to connect to the cloud system. You wouldn't need a large hard drive because you'd store all your information on a remote computer.
- Corporations that rely on computers have to make sure they have the right software in place to achieve goals. Cloud computing systems give these organizations company-wide access to computer applications. The companies don't have to buy a set of software or software licenses for every employee. Instead, the company could pay a metered fee to a cloud computing company.
- Servers and digital storage devices take up space. Some companies rent physical space to store servers and databases because they don't have it available on site. Cloud computing gives these companies the option of storing data on someone else's hardware, removing the need for physical space on the front end.
- Corporations might save money on IT support. Streamlined hardware would, in theory, have fewer problems than a network of heterogeneous machines and operating systems.

While the benefits of cloud computing seem convincing, the biggest concerns are security and privacy. The idea of handing over important data to another company worries some people. Corporate executives might hesitate to take advantage of a cloud computing system because they can't keep their company's information under lock and key.

The counterargument to this position is that the companies offering cloud computing services live and die by their reputations. It benefits these companies

to have reliable security measures in place. Otherwise, the service would lose all its clients. It's in their interest to employ the most advanced techniques to protect their clients' data.

Privacy is another matter. If a client can log in from any location to access data and applications, it's possible the client's privacy could be compromised. Cloud computing companies will need to find ways to protect client privacy. One way is to use authentication techniques such as user names and passwords. Another is to employ an authorization format — each user can access only the data and applications relevant to his or her job.

References

http://communication.howstuffworks.com/cloud-computing.htm

3.2. Comprehension tasks

3.2.1. Answer the following questions

1. What is a cloud computing?
2. Why do we call it this way?
3. What makes up a cloud computing system?
4. What are some of the applications of cloud computing?
5. What accounts for data backup?
6. Are there any potential problems about cloud computing?

3.2.2. Match the following statements as True or False

1. Cloud computing architecture refers to the powerful servers.
2. The front end comprises the local computer that stores all the applications required.
3. A terminal implies a low-end computer.
4. Cloud computing leads to the reduction in rental expenses.
5. While the benefits of cloud computing seem convincing, are there any potential problems?

4. Discussion

4.1. On the one hand, cloud computing could turn home computers into simple terminal interfaces in the near future. In some ways, this is a step backward. On the other hand, computer hardware has been improving at a remarkably fast pace recently.

Could you anticipate the changes PC will have underwent by 2020? State your own opinion.

UNIT 9

1. Vocabulary

spin (spin, spin)	вращать
track	дорожка аудиозаписи, строчка видеозаписи
access time	время доступа
format a disk	форматировать диск
transfer rate	скорость передачи
back up	создавать резервную копию
multiformat playback	многоформатное воспроизведение
flash memory	флеш-память
solid state memory	память жесткого диска
volatile	энергозависимый
non-volatile	энергонезависимый
flash memory card	карта памяти
flash memory drive	ЗУ из флеш-памяти

2. Translate from Russian into English

2.1. Гибкие диски так называются потому, что они производятся из гибкого пластического материала, у которого поверхность поддается намагничиванию.
2.2. Жесткие диски работают так же, как и гибкие диски, но у них есть свои важные преимущества: они могут содержать намного больше данных и вращаться с большей скоростью.
2.3. Скорость, с которой жесткие диски находят данные, называется временем доступа или временем поиска.
2.4. Необходимо различать скорость доступа и скорость передачи данных.
2.5. Запоминающее устройство на флеш-памяти, известное как большой палец или перьевой привод, присоединяется через USB-порт.
2.6. USB flash drives позволяют обезопасить данные и легко их передавать.
2.7. Портативные DVD-проигрыватели обычно работают на батарейках, имеют широкий экран и обеспечивают многоформатное проигрывание.
2.8. Мгновенная память является энергонезависимой.
2.9. Первым правилом хранения данных является создание резервной копии всех важных файлов.

3. Reading

3.1. Read the text

Get up to Speed on the Storage Technology Inside Memory Cards, Smartphones, USB Sticks and the New Solid-State Drives

Flash memory is inside your smartphone, GPS, MP3 player, digital camera, PC and the USB drive on your key chain. Solid-state drives (SSD) using flash memory are replacing hard drives in netbooks and PCs and even some server installations.

Needing no batteries or other power to retain data, flash is convenient and relatively foolproof.

Flash memory is a solid-state chip that maintains stored data without any external power source. It is commonly used in portable electronics and removable storage devices, and to replace computer hard drives.

As with other solid-state technologies, flash memory's history includes rapidly increasing capacity, ever-smaller physical sizes and continually falling prices.

Flash memory is a type of electronically erasable programmable read-only memory (EEPROM), memory chips that retain information without requiring power. (This is different from flash RAM, which does need power to retain data.) Regular EEPROM erases content byte by byte; most flash memory erases data in whole blocks, making it suitable for use with applications where large amounts of data require frequent updates. Inside the flash chip, data is stored in cells protected by floating gates. Tunneling electrons change the gate's electronic charge in "a flash" (hence the name), clearing the cell of its contents so it can be rewritten.

Flash memory devices use two different logical technologies — NOR and NAND — to map data. NOR flash provides high-speed random access, reading and writing data in specific memory locations; it can retrieve as little as a single byte. NOR is used to store cell phones' operating systems; it's also used in computers for the BIOS program that runs at start-up

NAND flash reads and writes sequentially at high speed, handling data in small blocks called pages. This flash is used in solid-state and USB flash drives, digital cameras, audio and video players, and TV set-top boxes. NAND flash reads faster than it writes, quickly transferring whole pages of data. Less expensive than NOR flash, NAND technology offers higher capacity for the same-size silicon.

As a NAND chip wears out, erase/program operations slow down considerably, causing more retries and bad block remapping. Moving many small files could further degrade transfer rates. Catastrophic failure happens only with extended use (after thousands of writes and accesses); periodic backup and replacement forestall this problem.

USB drives: Introduced in 2002, USB drives encapsulate flash with a memory controller in a small package offering high capacity, fast transfer rates, flexibility and convenience; some feature built-in hardware encryption and password protection. Compared with floppy or optical drives, USB flash drives store more data and provide easy file transfer between most devices with a USB interface.

In December 2004, "Computerworld" described a 2 GB flash drive selling for more than $400; nowadays, 2 GB devices can commonly be found for under $10. This February, Kingston Technology Corp. announced U.S. availability of a 256 GB flash drive — the biggest yet — for $1,100.

Memory cards: These have evolved from the matchbook-size CompactFlash cards introduced in 1994 through 2001's postage-stamp-size Secure Digital cards to the latest miniSD and microSD cards, with higher capacities and faster transfer speeds at every step.

Solid-state drives: The newest flash memory application, SSDs can replace a computer's hard drive. They have no moving parts, so mechanical failure is near zero. Solid-state drives are quieter and smaller than hard drives, and they provide faster response, access and boot-up times but consume much less power and run cooler. Traditional hard drives currently offer greater capacity and a lower price, but this will likely change. Early concerns that flash memory's finite number of erase/write cycles would be a problem are abating as warranties for flash-based SSDs approach those of hard drives.

Russell Kay
Adapted from the "Computerworld", 7th June 2010

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. Flash memory's history includes rapidly increasing capacity, ever smaller physical sizes, continually falling prices.
2. Tunneling electrons don't change the gate's electronic charge in "a flash".
3. NAND flash reads and writes chaotically at high speed handling data in small blocks called pages.
4. Moving many small files could further upgrade transfer rates.
5. USB drives encapsulate flash with a memory controller in a bog package, offering high capacity, quick transfer rates, flexibility and much convenience.
6. Memory cards have evolved from the match book-size Compact Flash cards introduced in 1994.
7. Solid state drives, the newest flash memory application can replace a computer's flash memory drive.
8. Traditional hard drives currently offer greater capacity but for a higher price.

9. Flash memory is usually inside your smartphone, but outside GPS, MP3 player and other devices.
10. Solid state drives using flash memory don't always replace hard drives in netbooks and PC's.

4. Discussion

4.1. Compare HDD and SSD in terms of storage capacity, performance, price per GB and reliability and discuss whether HDDs eventually replace SSDs in PCs?
Discuss all advantages and disadvantages of flash drives.

UNIT 10

1. Vocabulary

ergonomics	наука о взаимоотношениях работающего и окружающей среды, организация рабочего места
RSI (repetitive strain injury)	постоянные физические повреждения, возникающие в результате физического перенапряжения
result from	являться следствием чего-то
result in	приводить к чему-то
neck	шея
arm	предплечье
wrist	запястье
backache	боль в спине
posture	осанка, положение
headache	головная боль
eye strain	напряжение для глаз, зрения
fatigue	утомление, усталость
be dangerous to health	быть опасным для здоровья

tip	совет
adjustable chair	регулируемый стул
rest */v/*	опираться на что-либо
rest */n/*	опора, подставка
leg room	место для ног
at eye level	на уровне глаз
sit at arms' length from...	сидеть на расстоянии руки от...
elbow	локоть
document holder	держатель документа
keep one's wrists straight and flat	держать запястья прямыми и плоскими
take regular breaks from the computer	предпринимать регулярные перерывы (отдых) при работе на компьютере
rubbish	мусор, хлам
waste disposal	корзина для мусора, право распоряжаться отходами
recycle	перерабатывать, повторно использовать
addiction	неистребимая привычка, наркомания
addict	наркоман
obsessive	навязчивый
gaming	участие в азартных играх

2. Translate from Russian into English

2.1. Эргономика — наука о взаимоотношениях работающего и окружающей среды.
2.2. Компьютерная эргономика подразумевает соблюдение определенных правил и поведения при работе с компьютером.
2.3. Несоблюдение правил при работе с компьютером может провоцировать ухудшение состояния здоровья.
2.4. Монитор должен находиться прямо напротив пользователя, при этом монитор не должен располагаться слишком близко.
2.5. Модная тенденция последнего времени — отказ от острых углов — получила широкое распространение в производстве компьютерных столов.
2.6. Проведение долгих часов перед экраном работающего компьютера без перерыва вызывает напряжение глазных мышц, боль в глазах и ухудшение зрения.
2.7. При работе с компьютером необходимо соблюдать правильную осанку, в том числе иметь достаточно места для расположения ног под столом для компьютера.
2.8. Клавиатура должна располагаться на уровне локтя.
2.9. Расположение основной рабочей поверхности и клавиатуры на разных уровнях позволяет не только сэкономить место на поверхности стола, но и принять правильную позу во время работы.
2.10. Говоря о безопасности при работе с компьютером, надо вовремя избавляться от так называемого электронного мусора. Электронным мусором могут быть старые мониторы, пластиковые корпуса мобильных телефонов и т.п.

3. Reading

3.1. Read the text

Computer Addiction

Obsessively checking e-mail. Playing online games for 12 hours or more at a time. Placing more value on chat-room friends than real friends. Neglecting family, work and even personal health and hygiene. These are all symptoms of a new form of addiction that has surfaced only in recent years: computer addiction.

Creating a single definition for computer addiction is difficult because the term actually covers a wide spectrum of addictions. Few people are literally addicted to a computer as a physical object. They become addicted to activities performed on a computer, like instant messaging, viewing Internet pornography, playing video games, checking e-mail and reading news articles.

Even if someone uses a computer extensively for purely recreational purposes, that doesn't necessarily represent a real addiction any more than someone who spends hours working on a model train set, making quilts or gardening is "addicted" to those activities. Even the agreed-upon definition of addiction itself has evolved over the decades and remains a matter of debate in the medical community. In fact, the American Medical Association and the American Psychiatric Association do not currently consider computer addiction a valid diagnosis, a controversy we'll discuss later.

As a result of all these complications, any single definition of computer addiction is necessarily broad and a little vague. If the computer use is so pervasive that it interferes with other life activities, and if the user seems unable to stop using the computer to excess despite negative consequences, the problem might be a computer addiction.

Recognizing Computer Addiction

Much of our understanding of computer addiction comes from decades of research on other addictions, like alcoholism or gambling addiction. Psychologists

have identified several danger signs for computer addiction. Any of these signs would be a red flag, and multiple signs could mean there's a real problem.

- Staying on the computer for much longer than intended, or not noticing the passage of time while using the computer.
- Making conscious efforts to cut back on computer time and repeatedly failing.
- Thinking frequently about the computer when not using it or constantly looking forward to the next opportunity to use it.
- Hiding the extent of computer use from family and friends.
- Using the computer as an escape when feeling depressed or stressed.
- Missing events or opportunities or failing at non-computer-related tasks because of time spent on the computer. This could include poor job performance or missing out on family activities.
- Continued excessive computer use despite incurring negative consequences, such as marital problems or getting in trouble at work due to computer use.

Negative Effects of Computer Addiction

Computer addiction can have a variety of negative effects on a person. The most immediate are social. The user withdraws from friends and family as he spends more and more time on the computer. Relationships begin to wither as the user stops attending social gatherings, skips meetings with friends and avoids family members to get more computer time. Even when they do interact with their friends, users may become irritable when away from the computer, causing further social harm.

Eventually, excessive computer use can take an emotional toll. The user gradually withdraws into an artificial world. Constant computer gaming can cause someone to place more emotional value on events within the game than things happening in their real lives. Excessive viewing of Internet pornography can warp a person's ideas about sexuality. Someone whose primary friends are screen names in a chat room may have difficulty with face-to-face interpersonal communication.

Over the long term, computer addiction can cause physical damage. Using a mouse and keyboard for many hours every day can lead to repetitive stress injuries. Back problems are common among people who spent a lot of time sitting at computer desks. Late-night computer sessions cut into much-needed sleep time. Long-term sleep deprivation causes drowsiness, difficulty concentrating, and depression of the immune system. Someone who spends hours at a computer is obvi-

ously not getting any meaningful exercise, so computer addiction can indirectly lead to poor overall physical condition and even obesity.

Eventually, the consequences of computer addiction will ripple through the user's life. Late-night use or use at work will affect job performance, which could lead to job loss. As the addiction takes its toll on family members, it can even lead to failed marriages.

References

http://computer.howstuffworks.com/
Internet/basics/computer-addiction.html

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. The term "computer addiction" is well-defined.
2. The majority of computer users become addicted to a computer as a physical object.
3. Continued computer abuse can be identified as a danger sign for computer addiction.
4. If you spend all day staring at a computer screen, you may be at risk for immune system depression.
5. Obesity can result from unrestrained staying on the computer.

4. Discussion

4.1. Try to give some helpful tips for those who are looking to curb their computer use.

4.2. There is a great deal of debate in the medical community about the validity of computer addiction. There are even some people whose computer use completely consumes their lives. However, some critics even contend that people who are obsessed with online gaming are no different from people who sit on the couch and watch hours of TV every night. In other words, maybe they're just lazy. State your own opinion.

UNIT 11

1. Vocabulary

handle	уметь обращаться, работать с чем-либо
multitasking	многозначность
WIMP (Windows, Icons Menus and Pointer)	окна, иконки, меню, стрелка
drop-down menu	выпадающее меню
pull-down menu	меню с вытеснением нижней строки (при его просмотре)
crashed disc rescuer	спасатель испорченных дисков
task bar	полоса с заданиями

2. Translate from Russian into English

2.1. У любой операционной системы три основные функции: управлять компьютерными ресурсами, устанавливать пользовательский интерфейс, выполнять и обеспечивать сервисы для программ.

2.2. Операционные системы обеспечивают сервисы для программ и дают возможность выполнения множества задач.

2.3. Полоса с заданиями в зависимости от программы, с которой вы работаете в данный момент.
2.4. Указатель, или курсор, представляет собой стрелку, которой управляет мышь или определенные клавиши на клавиатуре, и это позволяет делать выбор в меню.
2.5. Вспомогательные компьютерные программы, утилиты, необходимы для восстановления поврежденных дисков, файлов; способствуют более успешному пользованию компьютерами людьми-инвалидами; оказывают и другие услуги.
2.6. Операционная система Windows создана компанией Microsoft и используется в большинстве персональных компьютеров.
2.7. Графический пользовательский интерфейс впервые был введен в пользование операционной системой Apple Macintosh.
2.8. Операционная система Unix используется в компьютерах различных размеров, но в основном многопользовательских со множеством заданий.
2.9. Хотя операции по вводу-выводу применяются программами приложения, они выполняются операционной системой.

3. Reading

3.1. Read the text

Desktop Linux: Why You Shouldn't Care

Recently, the Web site analytics company Net Applications came out with figures that showed that in April, the percentage of "client devices" used to surf the Web that were running Linux crossed the 1% level for the first time ever — 1.02%, to be exact. The firm enthusiastically noted that "Linux has reached this important milestone on the client as Linux-based systems have become more functional, easier to use, and pre-installed on computers from vendors like Dell".

On the Web, you'd think manna had fallen from heaven. Linux backers touted the 1% breakthrough and prognosticated that Linux could eventually reach 20% market share.

My response: Not in this lifetime. And in any event, you simply shouldn't care about Linux on the desktop.

Let's start off with why Linux will never become an important desktop or notebook operating system. Linux has been around since 1991 — a full 18 years — and is available for free. Given that, the recent "milestone" of 1% market share doesn't seem so impressive.

In addition, if you do some digging in the Net Applications numbers, you'll see that from August to March, Linux use was largely flat. Last August, Linux's market share stood at 0.93% and then gradually declined before picking up again and reaching that 1.02% apex in April. So it's not as if Linux is on a skyrocket trajectory.

There's also some evidence that Linux market share won't likely ever get much higher than 1%, and certainly not more than 5%. The primary reason for the growth of Linux is the growing use of netbooks — inexpensive devices used primarily to surf the Web and send and receive e-mail. When netbooks were first sold, Linux was the desktop operating system on about 30% of them. Netbooks have been the fastest-growing segment of the PC market, which is why Linux finally broke the 1% barrier.

But Linux isn't faring so well on netbooks these days. Analyst firm NPD Group found that, by the beginning of this year, only 10% of all netbooks sold had Linux on them, and that number is likely shrinking. And Windows 7 will run on netbooks — something that Vista doesn't do — which means that Linux market share will drop even further when Microsoft launches a big Windows 7 marketing campaign.

How about Linux on desktop or notebook PCs? If you hunt hard enough, you'll be able to buy some from Dell. But apart from that, good luck. You might as well go on a snipe hunt.

Desktop Linux will simply never be popular enough for most people to care about. One big reason is the difficulty of upgrading and installing software. It's true that using the operating system itself is simple and straightforward — much easier than it was in the days when you had to be a command-line junkie to get anything done with Linux.

But when you try to install new software, or upgrade existing software, you'll be in for trouble. I won't get down and dirty with the details here, but believe me, it's not pretty.

Beyond that, there is no single version of Linux, and so by definition, using it becomes a nonstandard experience. How many versions are there? I'm not sure anyone really knows. But these are just a few variants: Gentoo, Debian, Knoppix, Mandriva, SUSE, Red Hat, Xandros, Ubuntu, Slackware — and the list goes on.

The upshot? As a desktop operating system, Linux isn't important enough to think about. For servers, it's top-notch, but you likely won't use it on your desktop — even though it did finally manage to crack the 1% barrier after 18 years.

Preston Gralla
Adapted from the "Computerworld", 18th May 2009

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. Linux is available without any payment due.
2. The skyrocketing popularity of Linux is indisputable.
3. The notebook with preinstalled Linux is the primary reason for its growth.
4. The number of netbooks with preloaded Linux is likely going down.
5. The difficulty of using Linux does not further its popularity.
6. Linux is easy to install.
7. Linux market share does not exceed 1%.

4. Discussion

4.1. Discuss other operating systems, for example, Unix, Macintosh OS, Windows XP, Windows 7. Compare them and say which of them is more progressive and useful for practical computing.

UNIT 12

1. Vocabulary

advantages of word processing over using a typewriter	преимущество текстового процессора перед использованием обычной печатной машинки
cut and past the text	удаление, вставка текста
find and replace	находить (данное слово или фразу) и заменять (одну группу знаков (букв) на другую группу)
word wrap	укладка текста (процедура переноса не умещающегося слова на следующую строку при работе в текстовом редакторе)
print	распечатывать
header	верхний колонтитул
footer	нижний колонтитул
customize	модифицировать в соответствии с требованиями заказчика
layout	схема, план, расположение элементов
merge	объединять информацию
spell checker	программа проверки правописания
thesaurus	тезаурус, тематический словарь

2. Translate from Russian into English

2.1. Word — наиболее распространенная программа текстовых редакторов, используемых при подготовке различных документов.
2.2. Обрабатывающая программа Word обеспечивает не просто печатание, но и такие технические характеристики, как поиск и замена определенного слова или фразы, удаление части текста и размещение этой части текста в другом месте.
2.3. Программа Word представляет множество возможностей при наборе текста документа, в том числе выбор шрифта для выделения важности какой-либо части текста, размер шрифта, цветовое оформление элементов текста, и обеспечивает расположение текста на странице.
2.4. Word дает возможность проверки и уточнения правописания.
2.5. Одним из аспектов оформления страницы является разбивка текста информации на более мелкие разделы.
2.6. Форматирующая полоса инструментов находится под стандартной полосой инструментов. Ее надо использовать для изменения шрифта или вида букв: жирный шрифт, курсив или подчеркивание.
2.7. Многие текстовые процессоры также формируют таблицы чисел или цифр, сложные индексы и таблицы понимания содержания.
2.8. Функция «язык» — это инструмент, открывающий тематический словарь, чтобы помочь пользователю найти похожие или противоположные по значению слова.
2.9. Word обеспечивает установление верхней и нижней границы страницы и нумерацию.

3. Reading

3.1. Read the text

The Case for and against Word Processing

Word processing did not develop out of computer technology. It evolved from the needs of writers rather than those of mathematicians, only later merging with the computer field. The history of word processing is the story of the gradual automation of the physical aspects of writing and editing, and the refinement of the technology to make it available to individual and corporate users.

People use word processors for writing all kinds of documents, such as letters, school papers and reports. Word processors have many advantages over handwriting and manual typewriters. Word processing is faster and easier than writing by hand and you can store documents on your computer, which you cannot usually do on a typewriter. This makes it easier to review and rewrite your documents. You have more formatting choices with a word processor, and the spelling, grammar and language tools are useful, too. You can also print copies of your documents, which look neater than handwritten ones. Many language students use word processors to improve their writing skills and because they help them feel proud of their work.

Word processors do have disadvantages, however. First, it is not easy to read long documents on a computer screen. Second, sometimes the printer does not print an exact copy of what you see on the screen. Not all word processors can read each other's files, which is another disadvantage. Finally, word processors do not always work well with e-mails. If you paste a word-processed letter into an e-mail it may lose a lot of its formatting. Many people use a text editor for the Internet, which is similar to a word processor but has fewer formatting features and cannot use graphics. Text editors, such as Notepad, use a simple coding system called ASCII (American Standard Code for Information Interchange), as does e-mail.

References

www.philosophyblog.com.au

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. People use word processors for designing pictures and photos only.
2. To work at manual typewriters is necessary to know what word processors are.
3. Word processing supports faster and easier writing than writing by hand.
4. You have less formatting choices with a word processor than typing on a manual typewriter.
5. Many language students use word processors to improve their pronouncing skills and not their writing skills.
6. Word processors don't have any drawbacks.
7. Sometimes the printer does not print an exact copy of what you see on the screen.
8. Present day word processors can practically read each other's files.
9. Using a text editor for the Internet is similar to a word processor, and it is one of the advantages of a word processor.
10. Text editors such as Notepad use a simple coding system ASCII, as does e-mail and it is also the advantage of a word processor.

4. Discussion

4.1. Handwriting vs typing

Are there any benefits left to handwriting?

People frequently use both. Firstly, you should know when to use what. And secondly, there's a large number of factors that go into the choice, including:

- how fast you can type, and how IT-literate you are;
- how messy your handwriting, and how tiring;
- how good an editor you are, and, in general, where your various writing strengths lie;
- the sort of work you're doing — fiction or non-fiction; prose or poetry; blogging or magazines, outlining or drafting;
- the style and genre you're writing in;
- what you grew up on and are comfortable with.

UNIT 13

1. Vocabulary

spreadsheet	электронная таблица; программа обработки данных, расположенных в таблице
row	строка; ряд элементов, например ячеек таблицы, расположенных горизонтально
column	столбец; ряд элементов, расположенных вертикально
cell	секция памяти, ячейка, клетка (таблицы)
formula bar	панель формул; панель в окне некоторых программ, на которой находятся кнопки для составления формул
format	1) формат; схема расположения и представления данных в памяти, в базе данных или на внешнем носителе; 2) размечать, форматировать
database (DB)	база данных; комплекс данных, которые обрабатываются специальными программами, предназначенными для поиска, хранения, чтения/записи и других операций с данными
field	поле; понятие в базе данных, определяющее элемент записи
memo field	текстовое поле в базе данных, которое может содержать неструктурированный текст большой длины

OLE (Object Linking and Embedding)	объектное связывание и встраивание; связывание и встраивание данных различного формата (например, текста, графики, звуковых данных и проч.) в системе Windows между разными приложениями
index	файл с СУБД, хранящий список ключей, каждый из которых определяет уникальную запись в БД и содержит информацию о ее физическом расположении; служит для ускорения поиска и сортировки данных
relational database	реляционная база данных; один из методов построения баз данных, который основан на построении нескольких таблиц
built-in-function	встроенная функция
hyperlink	гиперссылка, выделенный элемент веб-страницы
query	запрос; набор ключевых слов для получения информации

2. Translate from Russian into English

2.1. База данных — это комплекс данных, которые обрабатываются специальными программами, предназначенными для поиска, хранения, чтения и других операций с данными.
2.2. Текстовое поле в базе данных может содержать неструктурированный текст большой длины.
2.3. Одним из методов построения баз данных, основанным на построении нескольких таблиц, является реляционная база данных.
2.4. Составной (compound) документ может включать текст, графику, звуковые фрагменты, электронные таблицы и т.д.
2.5. Электронная таблица — это программа обработки данных, расположенных в таблице.

2.6. При помощи индексных файлов (index-file) повышается скорость обработки операций ввода-вывода за счет быстрого нахождения необходимых записей.
2.7. В базе данных можно создать информацию о каждом сотруднике фирмы и осуществлять поиск записи по фамилии.
2.8. Помимо связывания и встраивания данных различного формата (например, текста, графики, звуковых данных и проч.) в системе Windows между разными приложениями, можно также вставить ссылку на фрагмент.
2.9. При помощи встроенной функции пользователь может выполнить необходимые вычисления.
2.10. Активизация гиперссылки вызывает переход на другую страницу или другую часть текущей страницы.

3. Reading

3.1. Read the text

How to Buy Database Software

Databases don't have to be complicated. Our guide to these feature-rich data applications will help you understand the basics, and assist in helping you select the one that best suits your company's needs.

A database is an excellent tool for managing and storing data when spreadsheets like Excel 2010 aren't enough. With database like FileMaker Pro 11, Microsoft Access 2010, and Alpha Five v10 Developer, you can create interactive forms, run reports against data, and publish Web applications. Databases pick up where spreadsheets leave off by enabling highly efficient and powerful ways of organizing and representing data in charts, reports, queries, and more.

Database design and management can be complex, but there are several database applications that facilitate easy setup and administration. Although these products differ in feature set and user interfaces, there are five key components that comprise a relational database regardless of which platform you select: tables, rows, columns, records and keys.

Databases Defined

Think of a database as a modular system: A database contains tables, tables contain rows, and columns and rows correspond to single records. Keys, particularly primary keys, act as unique identifiers in relational databases and the means by which such databases "relate" one table to another. Confused? Imagine, then, that you have a database with two tables. Table 1 contains employee names and employee social security numbers. The column containing social security numbers is set as a primary key. Table 2 contains employee social security numbers and employee home addresses. You can establish a relationship between Table 1 and Table 2 based on the primary key of social security numbers. This allows you to make queries or run reports that will pull up all of the information in both tables at the same time. This is, of course, a very simple example, but it gives a general idea of how tables, relationships, and keys work. Imagine a vast database with many sorts of information, and several keys, and you can see that a database can be a very powerful tool, indeed.

Database Products For All User Levels

Database design can be complicated for non-developers, so our Editors' Choice for databases is FileMaker Pro 11. It's an ideal way for those not well-versed in database design to create a database or ad-hoc report. With FileMaker Pro 11, small businesses can create powerful relational databases; easy-to-use does not translate into poor database development.

If you're familiar with database solutions, Microsoft Access 2010 and Alpha Five v10 Developer may be more your speed. Both have a steeper learning curve than FileMaker Pro 11 does, but the underlying, real programming languages — VBA in Access 2010 and Ajax in Alpha Five v10 — mean that developers can create highly customized solutions using the databases as back-ends.

Users accustomed to the familiar Microsoft Office ribbon interface (and who don't require databases to be published to the Web) will find a lot to like in Access 2010. Redmond's offering simplifies database creation with the use of templates and built-in macros. Should you want to publish a database to the Web, you'll need a SharePoint 2010 server, or a Microsoft-hosted SharePoint site.

Alpha Five v10 simplifies the process of getting a database published to the Web, as everything you need to do so is included. The makers of Alpha Five v10 tout the product as a way for non-developers to build Ajax Web applications. Indeed, it is a powerful product and during testing we were able to create several Web apps without knowing a lick of Ajax, but there's still an assumption that the user

has rudimentary database knowledge, and therefore presents a learning curve to database novices.

Operating System Compatibility

Besides skill level, there is another consideration to ponder when selecting which database choice is right for you or your business: Operating system compatibility. Users working in predominately Windows-based networks may find Access 2010 an easy tool to create compatible complex applications. If you're working with primarily with Macs, FileMaker's Bento or FileMaker Pro 11 (which also supports Windows) may prove better fits. Bento is a more lightweight database management program than FileMaker Pro 11 — perfect for a small business running Macs and without heavy database needs.

Database Usage

There's also database usage to take into account. If you have a number of users — more than 20, who will be accessing the database throughout a workday — Access 2010 and Alpha Five v 10 can scale and handle a larger number of database transactions and simultaneous connections than a streamlined application such as Bento. FileMaker Pro 11 is also tailored more for the SMB, though FileMaker offers other editions for larger organizations, like FileMaker Server 11 Advanced.

Database design and management need not be painful and arduous. Anyone can get a database up and running with a little willingness to get acquainted with the basic concepts.

Samara Lynn
(www.PCmagazine.com)

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. Databases like FileMaker Pro 11, Microsoft Access 2010, and Alpha Five v10 Developer are excellent tools for managing and storing data.
2. There are five key components that comprise a relational database: Tables, rows, columns, cells and fields.
3. Database is a modular system.
4. With Microsoft Access 2010, small businesses can create powerful relational databases.

5. Users working in Windows-based networks may find FileMaker Pro 11 an easy tool to create compatible complex applications.

3.2.2. Using the information in the article, complete these statements

1. A database is used to:
   (a) store, organize and retrieve a large collection of related information;
   (b) create the main document with a word processor;
   (c) to enter text, numbers and formulas.
2. Databases pick up where spreadsheets leave off by
   (a) enabling highly efficient and powerful ways of storing and sorting records;
   (b) enabling highly efficient and powerful ways of organizing and representing data in charts, reports, queries, and more;
   (c) keeping personal records or mailing lists with names, addresses, departments, etc.
3. What does "relational database" refer to?
   (a) software which allows data to be displayed and managed in a table format;
   (b) an organized collection of data stored in a computer file;
   (c) a collection of data items organized as a set of formally-described tables from which data can be accessed or reassembled in many different ways without having to reorganized the database tables.

4. Discussion

4.1. Discuss advantages and disadvantages of Microsoft Access 10 and Alpha Five v10 Developer databases.
4.2. Why do you think FileMaker Pro 11 is an ideal way for those not well-versed in database design to create a database or ad-hoc[1] report?
4.3. Why is it important to ponder on operating system compatibility when selecting which database choice is right for you or your business?
4.4. What are some potential problems the developers of modern databases will face?

[1] Ad-hoc (Latin) — done only when the situation makes it necessary, and without any previous planning.

UNIT 14

1. Vocabulary

bitmap (bmp)	растр (точечный битовый массив). Способ представления данных компьютерного графического изображения в виде растра, при котором каждый пиксель определяется как набор значений, содержащих информацию о состоянии относительного уровня яркости и цветности данного пикселя
bitmapped graphics	растровая графика; хранится в компьютере в виде набора прямоугольной мозаики (растра), составленной из точек (пикселей), каждая из которых может быть окрашена в свой цвет. В результате любое изображение может быть описано количеством точек по горизонтали и вертикали и цветом каждого пикселя
vector graphics	векторная графика; обрабатывается компьютером как идеальные геометрические фигуры, которые можно масштабировать, вращать и производить над ними другие действия. Преимущество векторной графики заключается в том, что форма, пространственное положение и цвет объектов описываются с помощью математических формул. Это обеспечивает сравнительно небольшие размеры файлов изображений, высокое качество трансформации объектов и независимость от разрешения принтера или монитора
computer-aided design (CAD)	система автоматизированного проектирования (САПР)

wireframe model	каркасная модель; изображение трехмерного объекта в виде отдельных линий
wireframe	каркасный метод изображения объекта
rendering	рендеринг; в трехмерной графике — процесс создания реалистичных изображений на экране, использующий математические модели и формулы для добавления цвета, тени и т.д.
desktop publishing (DTP)	настольная издательская система
clip-art	клипарт (в издательских системах), иллюстративная вставка, графический фрагмент, аппликация; используется при подготовке авторских произведений. Современные графические и текстовые редакторы, программы для настольных издательских систем
fractal	фрактал; геометрическая форма, которая может быть разбита на отдельные части, которые приближенно представляют собой уменьшенную копию целого
animation	анимация, мультипликация. Вывод на экран последовательности слегка различающихся изображений для имитации движения
geographic information system (GIS)	географическая информационная система (ГИС). Класс программных систем, связанных с вводом, обработкой, хранением и отображением пространственных данных (карты местности, планы, схемы и т.п.)
filter	фильтр; инструмент для обработки изображений
computer-aided manufacturing	автоматизированная система управления производством, технологическими процессорами (АСУТП). Программы для управления производством

2. Translate from Russian into English

2.1. Процесс создания реалистических изображений на экране, использующий математические модели и формулы для добавления цвета, тени и т.п. называется рендерингом.

2.2. САПР (система автоматизированного проектирования) предназначена для проектирования как простых, так и сложных систем, например больших интегральных микросхем, автомашин и проч.

2.3. Библиотека изображений (clipart) — это графическая информация, которая может включать фотографии, рисунки, карты, графики и проч.

2.4. В последнее время все чаще для создания анимационных фильмов применяются компьютерные системы.

2.5. Одним из главных элементов мультимедиапроектов и презентаций является компьютерная анимация.

2.6. Для создания компьютерной анимации существует множество приложений.

2.7. Компьютерная анимация воспроизводится с помощью компьютера на экране монитора или с помощью специальных аппаратных средств.

2.8. Каркасная модель — это изображение трехмерного объекта в виде отдельных линий.

2.9. В настоящее время лидерами среди программных пакетов обработки векторной графики считаются CorelDraw, Adobe Illustrator и Free-Hand.

2.10. Создание на основе векторной графики фотореалистичных изображений является очень трудоемким процессом и требует особых навыков и техники.

3. Reading

3.1. Read the text

CAD: Computer-Aided Design;
CADD: Computer Aided Design & Drafting

Definition: Computer-aided design (CAD), also known as computer-aided drafting, is the use of computer software and systems to design and create 2D and 3D virtual models of goods and products for the purposes of testing. It is also sometimes referred to as computer assisted drafting.

Benefits of Computer-Aided Design

In the field of product development there are often immense costs associated with the testing of new products. Every new product must undergo at least a small measure of physical testing — not only to ensure that it meets minimum safety standards but also to ensure that it will successfully operate under the range of conditions to which it can expect to be exposed. For instance, the wing of an aeroplane must undergo stress tests to ensure that it will retain its integrity even under the most gruelling weather and turbulence conditions before it is approved for use.

Unfortunately, this testing can be ruinously time-consuming and expensive. If an aeronautical company has to physically build dozens of wings in the course of testing a new design then the final cost and time scale of the project can be far higher than projected.

Fortunately, there is no need to physically test all of these designs. Instead, developers can run virtual stress tests using computer-aided design, substituting a wind tunnel for a CAD application that can simulate the same conditions.

The benefits of virtual simulations are obvious. In addition to a reduction in the cost of product development and the time required to run tests there is also the advantage that conceptual designs can be modified instantly as the tests progress.

Perhaps one of the best examples of this versatility can be seen in the design of the aeroplane wing. The science of aerodynamics is complex, and it is often

the case that certain wing shapes can create unexpected turbulence under certain conditions. When this occurs during physical testing it can be a challenge to discover the problem and make alterations. When running virtual tests using CAD, however, alterations to the design can be made quickly and easily, so new designs can be tested and retested until the problem is resolved.

New developments in CAD applications and technologies are regularly presented at such industry conferences as ICCAD, and in peer-reviewed journals such as *Computer-Aided Design and Applications*. An introduction to the subject is available at NIST, and agency of the US Commerce Department.

Business Applications for CAD

While computer-aided design can be an excellent tool for performing stress tests on conceptual products, there are still more potential uses.

Idea Generation

With the limiting factor of prototype manufacture removed, CAD allows the process of idea generation to become much more flexible. Enterprises can afford to be more open to new ideas and suggestions than in the past — from both employees and potential customers. Suggestions for new products can be quickly tested at a much lower cost than in the past.

Augmentation

CAD opens up the possibility to make slight improvements on new product designs instantly. While this can be of great benefit in the design of a new product it can also be extremely useful for investigating possible improvements to existing products — or even reverse engineering and augmenting the products of competitors.

Market Testing

Through designing new products using CAD it becomes possible to begin the process of market testing much earlier than in the past. Focus groups can be presented with virtual mock-ups of new products more quickly than would be possible with physical prototypes, and alterations can be made based on their feedback almost instantly. Since modifications can be made simply by entering new data into the CAD software, updated virtual mock-ups can be presented to the same audience for further feedback during the same session.

The Future of CAD

Since the early development of computer-aided design we have seen a trend towards increasing accessibility. When CAD applications became available for

product development in the 1960s it was only the largest of enterprises that could afford to make use of the technology — the aerospace and automobile industries, for instance.

As computer technology developed, computer-aided design made the move from dedicated systems to general-use personal computers, opening the door for smaller enterprises and individual users. Today it is possible to run most CAD software (and even some high-end 3D packages) on typical desktop PCs.

In the future we can expect further advances in 3D software packages, allowing users a more simple and intuitive experience. Perhaps most exciting for CAD users is the fact that the cost of 3D printing will steadily decline, opening up a whole new avenue in the product development process. Not only will CAD users be able to make instant modifications to their conceptual designs, but they will also be able to instantly create a physical prototype — solving an inherent drawback of virtual product development.

References

www.bestpricecomputers.co.uk

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. CAD is used to design and create only 2D virtual models of goods and products.
2. The benefits of virtual simulations are limited.
3. New developments in CAD applications and technologies are regularly presented at industry conferences and in peer-reviewed journals.
4. It is possible today to run most CAD software on typical PCs.
5. In the future we will be able to create a physical prototype — solving a drawback of virtual product development.

3.2.2. Using the information in the article, complete these statements

1. The benefits of virtual simulations are obvious because:
   (a) using computer-aided manufacturing software, engineers can simulate and test designs before parts are actually produced;
   (b) there is the advantage that conceptual designs can be modified instantly as the tests progress;
   (c) testing can be time-consuming and expensive.

2. New developments in CAD applications and technologies are regularly presented
   (a) on special Web sites;
   (b) at industry conferences such as ICCAD, in peer-reviewed journals such as *Computer-Aided Design and Applications*;
   (c) in periodicals.
3. In the future we can expect further advances in 3D software packages, allowing
   (a) large and small enterprises to use CAD applications;
   (b) most CAD software to be run on typical desktop PCs;
   (c) users to create a physical prototype — solving an inherit drawback of virtual product development.

4. Discussion

4.1. What are the benefits of CAD?
4.2. Discuss what CAD can offer to business.
4.3. What do you think the future of CAD is?
4.4. Do you think that by using computer-aided manufacturing software engineers can simulate and test designs before parts are actually produced?
4.5. What areas of industry would benefit from the introduction of CAD?

UNIT 15

1. Vocabulary

multimedia	представление и обработка разнообразной информации (звуковой, видео, графики, анимации) в цифровом и электронном виде с применением компьютерной техники, а также любая совокупность текста, графики, анимации, звука и видео
multimedia PC (MPC)	мультимедиа-ПК. Стандарт Microsoft на этот тип машин, определяющий характеристики процессора, ОЗУ, компакт-диска, монитора и звуковой платы
interaction	взаимодействие; диалог между пользователем и системой.
interactive	интерактивный. Интерактивным называется приложение, результат работы которого зависит от пользователя, который может изменять как результат, так и представление результата
hypertext	гипертекст, обобщенный текст. Многоуровневый способ представления информации при помощи связей между документами, а также документ, имеющий связи с другими документами через систему выделенных слов (ссылок)
hypermedia	гиперсреда, гипермедиа. Технология представления любых видов информации в виде относительно небольших блоков, ассоциативно связанных друг с другом, расширенный по сравнению с гипертекстом

	метод мультимедийной информации, охватывающий разные среды. В гипермедиа включается ПО, разработанное для интерактивного управления различными элементами коммуникационной среды, такими как видео, аудио, текст, графика, анимация, цифровые эффекты и проч.
burn	записывать на компакт-диск; прожигать, нарезать (*разг.*); производить запись на компакт-диски типа CD-R, CD-RW, DVD-R, DVD-RW и т.п. при помощи специального пишущего привода
to compress	сжимать, уплотнять (данные); уменьшать размер файла для экономии памяти и/или времени передачи данных
compressed disk	«сжатый диск», диск, над всеми файлами которого выполнена процедура сжатия
streaming	потоковый
streaming video	потоковое видео; технология передачи видеоизображения, позволяющая просматривать его по мере поступления данных непосредственно из сети, без предварительной загрузки всего видеофайла на локальный компьютер
virtual reality (VR)	виртуальная реальность. Сложные системы моделирования псевдофизической реальности, формирующие доступные пользователю трехмерные визуальные «миры», с помощью мощного компьютера, стереоскопических очков, перчаток, шлемов

Расширения имен файлов DOS и Windows

.pdf (Portable Document Format)	формат переносимых документов

.doc (Document/ Documentation)	файл с текстом документа; файл, создаваемый редактором текстов Microsoft Word или Word Perfect
.rtf (Rich Text Format)	метод кодирования форматированного текста и графики для переноса между приложениями под MS-DOS, Windows, Windows 95, OS/2 и Apple Macintosh
.htm или .html (Hypertext Markup Language)	текст с гипертекстовой разметкой в формате HTML, используемый для создания и просмотра веб-страниц
.avi (Audio Video Interleaved)	формат файлов, разработанный корпорацией Microsoft для хранения видеофильмов, синхронизированных со звуком. Содержит чередующиеся записи цифрового видео и аудио
.mov (Quicktime Movie)	файл с видеофильмом
.mpg или .mpeg (Moving Picture Expert Group)	файл со сжатым видео и аудио, используется в веб и мультимедиа
.gif (Graphics Interchange Format)	графический формат файла; файл с изображением в пакете 3D-Studio
.jpg или jpeg (Joint Photographic Experts Group)	графический файл в формате JPEG
.tif (Tagged Image File/Format)	графический файл в формате TIFF, часто файл с изображением, введенным со сканера
.wav (Waveform Audio)	звуковой файл; файл с оцифрованной звуковой информацией

.ra (Real Audio)	аудиофайл; используется для прослушивания музыки в веб
.mp3	музыкальный файл в формате MPEG 3
.zip	файл, созданный упаковщиком PKZIP, либо программами, совместимыми с ним
divx	формат «ДивЭкс». Формат компрессии видео на основе MPEG 4. Обеспечивает намного большую степень сжатия, чем предыдущие видеоформаты MPEG 1 и MPEG 2

2. Translate from Russian into English

2.1. Мультимедиа обеспечивает возможность хранения огромных массивов информации, интерактивного доступа к ее элементам и воспроизведения на экране ПК видеосюжетов со звуковым сопровождением.
2.2. Мультимедиа — это технологии, позволяющие с помощью компьютера интегрировать различные среды, средства и способы обмена информацией.
2.3. Интерактивным называется приложение (application), результат работы которого зависит от пользователя, который может изменять как результат, так и представление результата.
2.4. Интерактивность подразумевает диалоговый обмен данными между пользователями.
2.5. Электронная почта, чаты, телефония, интерактивное телевидение являются примерами интерактивной информационной системы.
2.6. Гипертекст соединяет различные документы на основе заранее заданного набора слов.
2.7. Термин «мультимедиа» не является в общем случае синонимом термина «гипермедиа».

2.8. Гипермедиа — это расширенный метод организации мультимедиаинформации, при котором, кроме текста, поддерживаются перекрестные ссылки с другими типами данных (видео, графика, звук).
2.9. Сжатие без потерь используют для файлов программ и баз данных.
2.10. Сжатие с потерями применяют для видеоизображений и аудиозаписей.

3. Reading

3.1. Read the text

Multimedia

Multimedia is media and content that uses a combination of different content forms. The term can be used as a noun (a medium with multiple content forms) or as an adjective describing a medium as having multiple content forms. The term is used in contrast to media which only use traditional forms of printed or hand-produced material. Multimedia includes a combination of text, audio, still images, animation, video, and interactivity content forms.

Major Characteristics of Multimedia

Multimedia presentations may be viewed in person on stage, projected, transmitted, or played locally with a media player. A broadcast may be a live or recorded multimedia presentation. Broadcasts and recordings can be either analog or digital electronic media technology. Digital online multimedia may be downloaded or streamed. Streaming multimedia may be live or on-demand.

Multimedia games and simulations may be used in a physical environment with special effects, with multiple users in an online network, or locally with an offline computer, game system, or simulator.

The various formats of technological or digital multimedia may be intended to enhance the users' experience, for example to make it easier and faster to convey information. Or in entertainment or art, to transcend everyday experience.

Usage

Virtual reality uses multimedia content. Applications and delivery platforms of multimedia are virtually limitless.

Multimedia finds its application in various areas including, but not limited to, advertisements, art, education, entertainment, engineering, medicine, mathematics, business, scientific research and spatial temporal applications. Several examples are as follows:

Creative Industries

Creative industries use multimedia for a variety of purposes ranging from fine arts, to entertainment, to commercial art, to journalism, to media and software services provided for any of the industries listed below. An individual multimedia designer may cover the spectrum throughout their career. Request for their skills range from technical, to analytical, to creative.

Commercial

Much of the electronic old and new media used by commercial artists is multimedia. Exciting presentations are used to grab and keep attention in advertising. Business to business, and interoffice communications are often developed by creative services firms for advanced multimedia presentations beyond simple slide shows to sell ideas or liven-up training. Commercial multimedia developers may be hired to design for governmental services and nonprofit services applications as well.

Entertainment and Fine Arts

In addition, multimedia is heavily used in the entertainment industry, especially to develop special effects in movies and animations. Multimedia games are a popular pastime and are software programs available either as CD-ROMs or online. Some video games also use multimedia features. Multimedia applications that allow users to actively participate instead of just sitting by as passive recipients of information are called *Interactive Multimedia*. In the Arts there are multimedia artists, whose minds are able to blend techniques using different media that in some way incorporates interaction with the viewer. One of the most relevant could be Peter Greenaway who is melding Cinema with Opera and all sorts of digital media. Another approach entails the creation of multimedia that can be displayed in a traditional fine arts arena, such as an art gallery. Although multimedia dis-

play material may be volatile, the survivability of the content is as strong as any traditional media. Digital recording material may be just as durable and infinitely reproducible with perfect copies every time.

Education

In Education, multimedia is used to produce computer-based training courses (popularly called CBTs) and reference books like encyclopedia and almanacs. A CBT lets the user go through a series of presentations, text about a particular topic, and associated illustrations in various information formats. Edutainment is an informal term used to describe combining education with entertainment, especially multimedia entertainment.

The possibilities for learning and instruction are nearly endless.

The idea of media convergence is also becoming a major factor in education, particularly higher education. Defined as separate technologies such as voice (and telephony features), data (and productivity applications) and video that now share resources and interact with each other, synergistically creating new efficiencies, media convergence is rapidly changing the curriculum in universities all over the world. Likewise, it is changing the availability of jobs requiring this savvy technological skill.

Journalism

Newspaper companies all over are also trying to embrace the new phenomenon by implementing its practices in their work. While some have been slow to come around, other major newspapers like The New York Times, USA Today and The Washington Post are setting the precedent for the positioning of the newspaper industry in a globalized world.

News reporting is not limited to traditional media outlets. Freelance journalists can make use of different new media to produce multimedia pieces for their news stories. It engages global audiences and tells stories with technology, which develops new communication techniques for both media producers and consumers. Common Language Project is an example of this type of multimedia journalism production.

Engineering

Software engineers may use multimedia in Computer Simulations for anything from entertainment to training such as military or industrial training. Multimedia

for software interfaces are often done as a collaboration between creative professionals and software engineers.

Industry

In the Industrial sector, multimedia is used as a way to help present information to shareholders, superiors and coworkers. Multimedia is also helpful for providing employee training, advertising and selling products all over the world via virtually unlimited Web based technology.

Mathematical and Scientific Research

In mathematical and scientific research, multimedia is mainly used for modelling and simulation. For example, a scientist can look at a molecular model of a particular substance and manipulate it to arrive at a new substance. Representative research can be found in journals such as the Journal of Multimedia.

Medicine

In Medicine, doctors can get trained by looking at a virtual surgery or they can simulate how the human body is affected by diseases spread by viruses and bacteria and then develop techniques to prevent it.

References

www.wikipedia.com

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. Virtual reality uses multimedia content.
2. Multimedia finds its application in limited areas.
3. Multimedia is heavily used in the entertainment industry (only to develop video games).
4. In education, multimedia is used to produce computer-based training courses.
5. Software engineers may use multimedia in Computer Simulations from entertainment to training.

3.2.2. Using the information in the article, complete these statements

1. Multimedia is used:
   (a) to perform traditional forms of printed or hand-produced materials;

(b) to produce animated images;
(c) to mean the combination of text, sound, and/or motion video.

2. Interactive elements can include:
(a) hand-produced and printed materials;
(b) multiple content forms;
(c) voice commands, mouse manipulations, text entry, touch screen, live participation.
3. The various formats of digital multimedia may be intended to:
(a) enhance the users' experience;
(b) imply text and images;
(c) combine multiple forms of media content.

4. Discussion

4.1. Share your ideas about actual or potential applications of multimedia in industry.
4.2. Do you think multimedia systems will ever become as popular as conventional audio-video systems?
4.3. What is the difference between multimedia and "motion pictures"?
4.4. How can multimedia be used in education?
4.5. What media do you think are meant in the term "multimedia"?

UNIT 16

1. Vocabulary

blog	интерпретация термина Web blog; блог — сетевой журнал, Интернет-дневник, персональный сайт-дневник; интерактивное издание, позволяющее размещать на персональной страничке информацию различного рода
podcasting	трансляция медиаконтента через веб-сервер
file sharing	предоставление файлов в совместное использование; способность операционной системы использовать свою локальную файловую систему совместно с другими компьютерами
broadcast	1) вещание, телевещание, радиовещание; 2) широковещание; 3) рассылка, рассылать, посылать информацию в любой форме более чем одному получателю
plug-in	подключаемый модуль, плагин. Внешний встраиваемый программный или аппаратный модуль, подключаемый к компьютерной программе с целью использования новых или расширенных возможностей
MP3 (MPEG layer 3)	метод кодирования с потерями и мультимедийный формат, предназначенный для хранения записей в виде сжатых файлов (.mp3)

MP3 player	МП3-плеер; ПО, позволяющее воспроизводить файлы формата .mp3
flash memory	флеш-память, мгновенная память; вид ROM-памяти, энергонезависимый тип полупроводниковой памяти
rip	1) взламывать; 2) сокращать программу (посредством удаления некоторых частей или файлов). Автомат смены дисков (CD-ROM) или лент, работает как автоматический автозагрузчик
tag	часть элемента данных, определяющая его тип
MIDI (Musical Instruments Digital Interface)	цифровой интерфейс музыкальных инструментов. Стандартный протокол сопряжения электронных музыкальных инструментов с компьютером и программным обеспечением
daw (digital audio workstation)	рабочая станция для цифровой обработки звука
speech recognition	распознавание речи; идентификация компьютером слов, произнесенных человеком
speech/voice synthesis	синтез речи компьютером по текстовому файлу или фонетическому описанию

2. Translate from Russian into English

2.1. Сетевой журнал или блог — это интерактивное издание, позволяющее размещать на персональной страничке информацию различного рода.

2.2. Примером широковещательной сети является Этернет (Ethernet).

2.3. Качество звукового сопровождения или изображения, получаемое с помощью мультимедиасистем, сравнимо с качеством ТВ-изображения.
2.4. Широковещательная служба может включать передачу звука, изображения, различных цифровых данных.
2.5. Наиболее распространенными МП3-плеерами являются WinAmp и Windows Media Player.
2.6. Программы распознавания речи позволяют вводить текст не с клавиатуры, а с микрофона, подключенного к компьютеру.
2.7. Распознавание речи — это способность интерпретировать произносимые слова и преобразовывать их в машинный код.
2.8. Метод кодирования с потерями является малопригодным для профессионального использования.
2.9. Мультимедийный формат, предназначенный для хранения записей в виде сжатых файлов (.mp3), разработан немецкой фирмой Fraundhofer IIF.
2.10. В основу стандарта MPEG для звука положены некоторые особенности человеческого уха (например, неспособность расслышать тихий звук, следующий сразу за громким).

3. Reading

3.1. Read the text

Talking to Computers

One of the shared assumptions in computer research is that talking to computers is a really great idea. Such a good idea that speech is regarded as the natural interface between human and computer.

Each company with enough money to spare and enough egotism to believe that it can shape everyone's future now has a 'natural language' research group. Films and TV series set in the future use computers with voice interfaces to show how far technology has advanced from our own primitive day and age. The unwritten assumption is that talking to your house will in the end be as natural as shouting at your relatives.

The roots of this shared delusion lie in the genuine naturalness of spoken communication between humans. Meaning is transferred from person to person so effortlessly that it must be the best way of transferring information from a human to another object.

This view is misguided on many different levels. First people are so good at talking and at understanding what others say because they share a common genetic heritage. Children's brains are hard-wired with a general language structure that they then apply to the surrounding spoken-word environment. The old view that language is learned by copying parents and other adults has been discredited in recent years, to be replaced by the theory that words are attached to a pre-existing structure in the child's mind in such a way that grammar 'emerges', as it were, rather than is taught.

This view of human language, added to shared human experience, shows how people understand each other precisely in a conversation where a transcript would make little sense. Unfinished sentences, in-jokes, catchphrases, hesitation markers like "er" and "you know", and words whose meaning is only clear in the context of that one conversation are no bar to human understanding, but baffled early attempts at computer speech recognition.

Recent advances in artificial intelligence address the problem — but only in part.

Pioneering linguistic research by scientists has revealed much of the underlying structure of human language, so much so that programmers can now mimic that structure in their software and use statistical and other techniques to make up for the lack of shared experience between operator and machine.

Some of the obvious drawbacks of universal voice control have already been countered. The dreadful prospect of an office full of people talking to their machines has brought about the headset and the throat microphone; these also address the fact that people feel ridiculous talking to something which is non-human. The increasing sophistication of voice-processing and linguistic-analysis tools cuts out the dangers of inaccurate responses to input, preventing the computer from having to respond to every single word uttered, no matter how nonsensical in the overall context.

The fundamental objection to natural language interfaces is that they're about as unnatural as you can get. You might be able to order a computer about in its limited sphere of action, but it'll never laugh at your jokes, make sarcastic comments, volunteer irrelevant but interesting information or do any of the

other things that make real human conversation so fascinating. If interaction is limited to didactic instruction from human to computer, why use up valuable processing time performing the immensely difficult task of decoding language correctly? To keep your hands free? For what, precisely?

There's another psychological reason why language control is difficult: the decline in domestic service throughout this century, the absence of military experience from the lives of the last two generations, and the flattening out of business management have all combined to produce a population that's not accustomed to giving crisp orders and expecting them to be obeyed

Controlling a computer by word power works best if you imitate a drill sergeant, avoiding all "could you's" and "would you mind's" that most of us use when trying to coerce someone into doing something they'd rather not do. This modern variant of the servant problem opens up the chance of ambiguity and error when interacting with a machine.

It could be said, though, that it's just as well we've forgotten how to give orders. Slaves always have had a reputation for conspiring against their master's backs.

References

www.longman-elt.com

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. Speech is regarded as the natural interface between human and computer.
2. Nowadays films and TV-series use computers voice interfaces.
3. Spoken communication is the best way of transferring information from a human to another object.
4. Some of the obvious drawbacks of universal voice control have already been countered.
5. Controlling a computer by word power works best if you use all "could you's and would you mind's".

3.2.2. Using the information in the article, complete these statements

1. Each company with enough money to spare now has:
   (a) a "natural language" research group;
   (b) a scientific research department;
   (c) a research and development department.
2. There is another reason why language control is difficult:
   (a) so-called "servant problem" opens up the chance of error when interacting with a computer;
   (b) a population that's not accustomed to giving crisp orders and expecting them to be obeyed;
   (c) the absence of military experience from the lives of the last two generations.
3. The view of human language, added to shared human experience, shows:
   (a) how people enter into conversation;
   (b) how people are on speaking terms;
   (c) how people understand each other precisely in a conversation.

4. Discussion

4.1. Explain in your own words why people have no difficulty understanding one another.
4.2. Do you think that natural conversation with a computer is a real possibility for the future?
4.3. Why do you think the communication with computers will always be limited?
4.4. What are the problems involved in using computers to react to human orders?
4.5. Why do you think talking to computers is a really great idea?

UNIT 17

1. Vocabulary

programming	программирование
program	программа
assembly language	язык ассемблера
assembler	ассемблер, язык программирования
high-level language	язык высокого уровня
compiler	компилятор
low-level language	язык низкого уровня
markup language	язык маркировки
flowchart	блок-схема
Java applet	Java-апплет — прикладная программа на Java в форме байт-кода
HTML (Hypertext Markup Language)	«язык разметки гипертекста», стандартный язык разметки документов в Интернете
Voice XML (Voice Extensible Markup Language, VXML)	один из открытых стандартов на основе XML — язык, протокол, диалоговый язык разметки
coding	кодирование

bug	сбой, ошибка
debugging	отладка программы, исправление ошибок
program documentation	программная документация
maintenance program	программа для технического обслуживания
machine code	машинный код

2. Translate from Russian into English

2.1. В соответствии с тем, в каких терминах необходимо описать задачу, существует деление на языки низкого и высокого уровня. Если язык близок к естественному языку программирования, то он называется языком высокого уровня, если ближе к машинным командам, — языком низкого уровня.

2.2. Ассемблер — язык программирования низкого уровня, представляющий собой формат записи машинных команд, удобный для восприятия человеком. Команды языка ассемблера полностью соответствуют командам процессора и представляют собой удобную символьную форму записи (мнемокод) команд и их аргументов.

2.3. Компилятор — это программа, выполняющая трансляцию на машинный язык программы, записанной на исходном языке программирования. Также как и ассемблер, компилятор обеспечивает преобразование программы с одного языка на другой.

2.4. Чтобы облегчить процесс программирования, необходимо представить алгоритм графически в виде блок-схем, которые выполняют различные назначения (ввод-вывод, начало-конец, вызов функции и т.д.).

2.5. Апплеты — это маленькие приложения, которые размещаются на серверах Интернета, транспортируются клиенту по сети, автоматически устанавливаются и запускаются на месте как часть документа HTML.

2.6. Объектно-ориентированные языки высокого уровня — это еще один класс языков программирования. На таких языках не описывают подробной последовательности действий для решения задачи, но эти языки предлагают человеку решить задачу в удобной для него форме. Первый объектно-ориентированный язык программирования Simula был создан в 1960-х годах Нигаардом и Далом.

2.7. Java — язык для программирования в сети Интернет, позволяющий создавать безопасные, переносимые, надежные, объектно-ориентированные интерактивные программы. Язык Java жестко связан с Интернетом, потому, что первой программой, написанной на этом языке, был браузер Всемирной паутины.

2.8. Основной причиной ошибок при разработке программ является неправильное преобразование информации из одной формы в другую.

2.9. Для освоения программы пользователем требуется определенная документация. Программная документация позволяет понять, какие функции выполняет та или иная программа, как подготовить исходные данные и запустить требуемую программу в процесс ее выполнения, а также что означают получаемые результаты.

2.10. VXML — это язык программирования, похожий на HTML тем, что он тоже является языком гипертекстовой разметки в Интернете и представляет собой теги, добавляемые в текстовый документ. VXML, интегрируемый с механизмами распознавания речи, поддерживает телефонный доступ к веб-услугам, а также навигацию по Интернету и интерактивную работу с веб-сайтами с помощью тонального набора и распознавания речи.

3. Reading

3.1. Read the text

A Lingua Franca for the Internet

The plethora of modern programming languages has a common evolutionary background. With each new generation, programming languages have tended to become more abstract and remote from the computer that they communicate

with. First-generation languages talked to the computer in the ones and zeros of "machine code", which was interpreted directly by its central processor as instructions for manipulating data stored in its memory. The second-generation, or "assembly", languages were devised to make the task of writing and reading such instructions easier, by using a code composed of letters and numbers, which was subsequently translated into the is and os that the machine could comprehend.

Third-generation languages, such as C, Pascal and FORTRAN, consist of English words such as READ, WRITE, and GOTO as well as mathematical symbols. Unlike first- and second-generation languages, the syntax (i.e., the rules for combining symbols and words) of third-generation languages is in principle independent of the computer they run on. A separate program called a compiler is used to translate the code into machine language.

A further abstraction is achieved in fourth-generation languages such as SQL (Structured Query Language), a programming language for querying[1] databases, or Mathematica and MathCad, languages for performing advanced mathematical manipulations and solving scientific problems. These languages also offer the programmer a far more natural form of expression, but at the expense of considerably narrowing the range of problems that the language can tackle.

When it came to developing a fifth generation of computer languages, this orderly evolution fizzled out[2]. The Japanese government's Fifth-Generation Computer project — aimed at marrying artificial intelligence techniques with programming — was abandoned in 1992, with little to show for ten years of research and billions of yen. The Japanese policymakers did not foresee the rise of the Internet and the need for an entirely different approach.

What the Internet has done, in effect, is to place the priority on the programmer, rather than the language. The elegance of computer languages — so dear to academic software gurus — has been sacrificed for ease of use. That is what matters to people who are building Web applications on a tight schedule. Hence the rise over the past decade of the quick-and-dirty[3] scripting[4] languages — the "sticky tape" of the World Wide Web.

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[1] To query — запрашивать информацию.

[2] Fizzle out — сходить на нет, прекратиться.

[3] Quick and dirty — сляпанный наспех.

[4] Scripting language — язык подготовки сценариев.

While scripting and object-oriented programming[5] represent significant new trends, the biggest shift in the past decade has been in the definition of what a programming language actually is. The success of Java and the high hopes that Microsoft is pinning on[6] C# have little to do with the languages themselves (both are really just variations of C++, an object-oriented version of C). What matters most for the success of these languages is that they are embedded in an Internet-friendly software environment.

As the battle between C# and Java rages in the student dormitories, the struggle will continue on a rather more conceptual level on the Web. Conceptually, the two languages represent wholly different bets on the future of the Internet. The Internet is about data transfer and not data processing. Where Java's philosophy is based on moving applets around the Internet — which, for many, is disturbingly similar to creating computer viruses — C# focuses much more on moving information.

Perhaps the closest thing today to a language that expresses the architecture of a program is UML (unified modelling language). Originally, UML was conceived as a way of standardizing existing tools used to design computer programs. It is a "big picture" modelling language, and it has been embraced by many computer programmers, even though it is not restricted to programming.

On the horizon, programming languages face the daunting challenge of helping to turn the Internet into a more intelligent place. Computers should be able to recognize the meaning of information on the Web by its context, and provide users with much more relevant information than Web browsers now do.

Although such programs can no doubt be constructed in Java or C#, these languages were not designed for such purposes. Herein lies an opportunity for languages designed with artificial intelligence specifically in mind. Such languages have existed for decades. The so-called functional language Lisp computes with symbolic expressions rather than numbers; the logical language Prolog works by making logical statements about objects.

Lisp and Prolog still have a loyal following in research circles, but their impact elsewhere has been modest. Languages such as Java have proved to be the fittest, in a Darwinian sense, because the Internet dictated that the big programming challenge was not one of artificial intelligence, but one of data manipulation, visualiza-

[5] Object-oriented programming — объектно-ориентированное программирование.

[6] To pin on smth — возлагать надежду на что-либо.

tion and communication between programs. As in Darwin's theory, the definition of what is fittest depends on the environment, which is constantly changing. Even though Lisp and Prolog may not be the shape of things to come, a programming language that incorporates concepts from artificial intelligence will no doubt appear when the time is ripe — and leave the likes of Java and C# by the wayside.

As the clash between C# and Java shows, there is a huge amount at stake in setting the trend for programming languages. Expect a whole alphabet soup of new languages within the next decade.

Adapted from the "Economist", 22d September 2001

3.2. Comprehension tasks

3.2.1. Answer the questions to the text

1. What is the history of programming languages development?
2. What made the orderly evolution of programming languages fizzle out?
3. What are the current trends in programming languages?

3.2.2. Match the following statements as True or False

1. The programming languages evolved in an orderly way till the advent of artificial intelligence.
2. What matters most for the success of languages is that they are embedded in an Internet-friendly software environment.
3. Java and C++ represent practically the same bets on the future of the Internet.

4. Discussion

4.1. With each new generation, programming languages have tended to become more abstract and remote from the computer that they communicate with.

4.2. Programming languages face the daunting challenge of helping to turn the Internet into a more intelligent place.

4.3. The plethora of programming languages that emerge nowadays can leave Java and C++ by the wayside.

UNIT 18

1. Vocabulary

project manager	руководитель проекта
database analyst	аналитик базы данных
network analyst	сетевой аналитик
system analyst	системный аналитик
Web designer	дизайнер веб-приложений
software engineer	программный инженер
hardware engineer	специалист по оборудованию
security specialist	специалист по компьютерной безопасности
network/computer system administrator	сетевой/системный администратор
database administrator	администратор базы данных
computer operator	оператор ПК
help desk technician	специалист службы поддержки.
computer training instructor	специалист по компьютерному обучению
technical writer	технический писатель

teleworker	дистанционный работник
teleworking	дистанционная работа посредством телекоммуникации
online teacher	преподаватель, дающий уроки онлайн
desktop publisher	разработчик графики приложений
Telemedicine	телемедицина
computer animator	специалист по компьютерной анимации

2. Translate from Russian into English

2.1. Администратор базы данных — специалист, отвечающий за выработку требований к базе данных, ее проектирование, реализацию, эффективное использование и сопровождение, защиту от несанкционированного доступа.

2.2. Системный администратор — сотрудник, в обязанности которого входит не только слежение за сетевой безопасностью организации, но и создание оптимальной работоспособности компьютеров и программного обеспечения для пользователей.

2.3. Технический писатель — специалист, занимающийся документированием в рамках разработки программного обеспечения.

2.4. Специалист службы поддержки — сотрудник структуры, решающей проблемы пользователей с компьютерами, аппаратным и программным обеспечением. Сотрудник технической поддержки регистрирует все обращения конечных пользователей. Начальной точкой контактов конечных пользователей со службой технической поддержки является колл-центр, который служит источником информации об удовлетворенности пользователей уровнем сервиса.

2.5. Оператор ПК занимается набором текстов, занесением информации в базу данных, созданием и форматированием электронных версий документов, составлением таблиц и сводок, проведением элементарных расчетов. Ра-

бота ведется на персональных компьютерах и требует от специалиста внимательности, высокой скорости печати, знания стандартного пакета офисных программ, умения пользоваться локальной сетью и находить нужную информацию в Интернете.

2.6. Веб-дизайнер — это специалист в области веб-разработки и дизайна, в задачи которого входит проектирование пользовательских интерфейсов для сайтов или приложений.

2.7. Инженерия программного обеспечения — это область компьютерной науки, которая занимается построением программных систем, настолько больших или сложных, что для этого требуется участие команды разработчиков, порой даже нескольких команд. Программный инженер должен быть хорошим программистом, уверенно разбираться в структурах данных и алгоритмах и свободно владеть одним или более языком программирования.

2.8. Системный аналитик — сотрудник, ответственный за анализ интересов заинтересованных лиц создаваемой IT-системы на предмет возможности их удовлетворения ее техническими свойствами. Основным продуктом системного аналитика являются организационно-технические решения, оформляемые как техническое задание на систему, техническое задание на программное обеспечение.

3. Reading

3.1. Read the text

Return of the Homebrew Coder

Most modern software is written by huge teams of programmers. But there is still room for homebrew[1] coders, at least in some unusual niches.

As digital gizmos[2] proliferate, consumers are running into some niggling[3] problems. How can you synchronize a Sony Ericsson smartphone with a Macin-

[1] Homebrew — доморощенный.

[2] Gizmo — электронное приспособление, устройство.

[3] Niggling — незначительный.

tosh computer running Microsoft's Entourage software? How do you send instant messages from your PocketPC or Palm handheld? How do you maintain a Web log quickly and easily? Such difficulties are typically faced by just a few thousand people with specific and unusual requirements — too few to merit the attention of the big computer firms, but enough to provide opportunities for a growing band of homebrew coders who set out to develop niche products.

In many cases these programmers are making a decent living in the process, thanks to the availability of high-speed Internet connections, cheap Web hosting services and online-payment systems, all of which make it quick and easy to distribute software and collect money from customers. The trend is also a response to the sorry state of the technology industry, following the bursting of the dotcom bubble[4]. Where they could once command salaries of $100,000, programmers now worry about their jobs disappearing to India. So instead of waiting for things to improve, some have decided to strike out on their own.

Brent Simmons is one such programmer. With the help of his wife, he runs a software company from his garage in Seattle. They make a clever piece of software, which runs on the Mac OS X operating system and makes it easy to read news and then post comments on to a Web log. "I like being able to design and implement software and have the final say", says Mr. Simmons. "It's a higher level of creativity than working on someone else's software. I get to refine and market my own ideas". At $40 each, Mr. Simmons needs to sell 2,000 copies of his program each year to earn what he would be paid as an employee elsewhere.

Jonas Salling from Stockholm, meanwhile, has attracted a loyal following for his handy software utilities. One allows data from Microsoft's Entourage personal-information manager for Macintosh computers to be transferred to Sony Ericsson smartphones. The other allows such phones, and certain Palm handhelds, to be used as wireless remote-controls via a Bluetooth link. So you can, for example, advance slides in a presentation by clicking on your phone's keypad. The number of people who actually want to do this is quite small, but they want to do it enough to pay Mr. Salling $10 for his software, which has won several awards.

Even more successful are Gaurav Banga and Saurabh Aggarwbi, based in Sunnyvale, California. They sell VeriChat, a nifty piece of software that allows people

[4] Dotcom bubble — пузырь доткомов, экономический пузырь, образовавшийся в результате взлета акций интернет-компаний, а также появления большого количества новых интернет-компаний и переориентировки старых компаний на интернет-бизнес.

to send and receive instant messages on smartphones, or on PocketPC and Palm handheld computers. VeriChat is sold on a subscription basis, and brings in $20 per user per year, collected via PayPal.

Another homebrew coder is Nick Bradbury, who lives in Franklin, Tennessee. He wrote one of the first Web publishing tools. Then he started Bradbury Software, which sells a Web page editor and a news-reading program. Self-employment, he notes, has more than just financial benefits. "I put in more hours, but those hours are very flexible, which in my case means I can spend a great deal of time with my two kids", he says. And he finds it very rewarding to know that his software is making people's lives a little easier — "something I rarely, if ever, experienced while working in the corporate world".

The phenomenon of the homebrew coder is not new, of course. For two decades, programmers have distributed their wares as "shareware"[5], initially through dial-up bulletin boards or via disks given away with computer magazines, and later via the Internet. People can try a piece of software free of charge, and then send a cheque to its creator if they want to continue using it. This often entitles them to a registration code that unlocks extra features. But online payment services such as PayPal and Kagi have simplified and sped up the payment process, making the shareware model far more attractive for programmers. Software developers are essentially cutting out the traditional distribution channels, which are not efficient.

Mr. Bradbury also points to improvements in development tools, which make it easier for independent programmers to build complex software, and to a growing number of niche markets, as programmable devices such as smartphones proliferate. While new opportunities abound, however, this world of independents is an unforgiving meritocracy. For homebrew coders, the fact that their fortunes depend directly on the quality of their products is both the risk and the reward.

Adapted from the "Economist", 13th March 2004

3.2. Comprehension tasks

3.2.1. Answer the questions to the text

1. What kinds of problems do homebrew coders tackle?
2. What types of software do homebrew coders build to make a decent living?

[5] Shareware — условно-бесплатное ПО (предоставляется бесплатно на короткий срок, по истечении которого пользование необходимо оплачивать, или с другими оговорками).

3. What are the ways to distribute software written by homebrew coders and collect money from the customers?

3.2.2. Match the following statements as True or False

1. Niggling problems of consumers do not merit the attention of big computer firms but provide opportunities for homebrew coders.
2. The reason for the trend is the sorry state of the technology industry, following the bursting of the dotcom bubble.
3. Homebrew programmers experience serious problems with software distribution and money collection.

4. Discussion

4.1. Comment on the following statement: "For homebrew coders, the fact that their fortunes depend directly on the quality of their products is both the risk and the reward".

4.2. What would be more preferable for you: a product released by a big computer company or a tool made by a homebrew coder?

4.3. In terms of improvement of development tools and online-payment system which niche markets are likely to appear?

UNIT 19

1. Vocabulary

software	программное обеспечение
hardware	аппаратное оборудование
personnel	персонал, штат работников
processing	обработка
output	устройства выхода
communication	коммуникация
feedback	отзыв
memory	память
information system	информационная система
control system	система контроля
communication system	коммуникационная система
call centre	колл-центр
digital television	цифровое телевидение
teletext	телетекст
DAB (digital audio broadcasting)	трансляция цифрового звука
Internet	Интернет

2. Translate from Russian into English

2.1. Информационные технологии — широкий класс областей деятельности, относящихся к технологиям управления, хранения, преобразования, защиты, обработки данных, передачи и получения информации с применением вычислительной техники и программного обеспечения.

2.2. Веб-конференции — технологии и инструменты для онлайн-встреч и совместной работы в режиме реального времени через Интернет. Веб-конференции позволяют проводить онлайн-презентации, совместно работать с документами и приложениями, синхронно просматривать сайты, видеофайлы и изображения.

2.3. Видеоконференция — область информационной технологии, обеспечивающая одновременно двустороннюю передачу, обработку, преобразование и представление интерактивной информации на расстоянии в режиме реального времени с помощью аппаратно-программных средств вычислительной техники.

2.4. Телемедицина — осуществление дистанционной консультационной медицинской услуги, при которой пациент или врач, проводящий обследование или лечение пациента, получает дистанционную консультацию другого врача с использованием информационно-коммуникационных технологий, не противоречащих национальным стандартам.

3. Reading

3.1. Read the text

Beaming in Grandma

Technological prophets have forecast the triumph of video calling ever since 1936, when Germany's Reichspost[1] launched the first public videophone service. But a

[1] Deutsche Reichspost — the official German national postal authority till 1945.

flurry of announcements from technology companies suggests that its time may have come at last. Cisco unveiled a video-calling system for the living room called "umi telepresence". The same day Logitech launched a television set-top box[2] that doubles as a videophone. Microsoft's new Kinect Xbox game console offers video conferencing.

The market for professional video gear is also in flux. Skype, a service that allows users to make calls from their personal computers (PCs), is moving into corporate territory by offering video conferencing, among other bells and whistles[3]. PCs from HP will soon come with video software.

Video communication is becoming more popular, in part because the technology is improving. Video calls accounted for about 40% of the 95 billion minutes that people spent on Skype in the first half of this year.

Video communication is spreading from one place to another. Having used it at home to bring Grandma and Grandpa into the living room so the kids can showcase their latest school project or model their Halloween costumes, people now feel more comfortable trying video communication at work. Most important, senior executives have warmed to the high-end telepresence[4] systems sold by Cisco and others, boosting the use of the technology further down the corporate hierarchy.

Cisco sees telepresence in the home as the key to new video services for the consumer in areas such as health care, education and government services. Imagine showing the doctor the allergy reaction rash on your arm, spending an hour with an Algebra tutor or talking to the DMV clerk to process your driver's license renewal.

Cisco and Logitech want to build on this momentum, particularly in the home. Cisco's gear is the more daring because it is a dedicated video-calling system. The package includes a camera and a console. Users also have to pay $25 a month for unlimited calls. And they need a high-definition television set as well as a fast Internet connection to get good results.

Yet despite all the progress, video communication is probably still not ready to take the world by storm. Most systems are not compatible: common technical standards are years away, as is a common video phone book. And video-calling

[2] Set-top box — приставка.

[3] Bells and whistles — ненужные свойства (программы).

[4] Telepresence — дистанционное присутствие.

may begin to encounter stiff resistance. They forecast that the growth of high-end telepresence systems will allow companies to keep more workers at their desks, saving 2.1m airline journeys per year by 2012 and cutting car-rental costs. But it is not clear that travelling salesmen, for example, will take to the technology.

Another open question is whether customers will plump for dedicated video-communication systems over those that also serve other purposes, such as a PC or a game console. Companies need both types: dedicated ones for important meetings and PC-based ones for everyday communication. But will consumers spend a few hundred dollars for an extra device? Then again, experts were equally sceptical when Cisco launched its executive telepresence systems.

Whatever system they pick, consumers will come up with new ways to use it. Already some families host "Skype dinners", with relatives calling in. Others never hang up, thus turning a display in the kitchen into a window on somebody else's home. Similarly, some firms have started to experiment with "virtual water-coolers", connecting their office kitchens by means of a permanent video link. Whether this improves productivity or simply encourages long-distance debates about football and "American Idol" is unknown.

Adapted from the "Economist", 7th October 2010

Cultural note

1. Cisco Systems, Inc — американская транснациональная компания, разрабатывающая и продающая сетевое оборудование.
2. Logitech — швейцарская компания, специализирующаяся на производстве периферийных устройств для персонального компьютера.
3. DMV (Department of motor vehicles) — управление дорожной безопасности и транспортных средств в США.
4. American Idol — телешоу на телеканале FOX, основанное на популярном британском шоу Pop Idol, смысл которого заключается в соревновании на звание лучшего начинающего исполнителя в США.

3.2. Comprehension tasks

3.2.1. Answer the questions to the text

1. What recent developments in video calling marked the beginning of video communication triumph?

2. What is the purpose of boosting the use of telepresence system in the home?
3. What is the forecast about the use of telepresence system in the future?

3.2.2. Match the following statements as True or False

1. The first public video phone service was launched by CIA in 1969.
2. Video calls account for more than a half of the 95 billion minutes that people spent on Skype in the first half of this year.
3. The growth of high-end telepresence systems will allow companies to keep more workers at their desks, saving 2.1m airline journeys per year by 2012 and cutting car-rental costs.

4. Discussion

4.1. Telepresence is the key to new video services for the consumer in areas such as health care, education and government services.
4.2. There must be taken a lot of steps to bring telepresence as the means of immediate face-to-face communication to the desk, home office, shops.

UNIT 20

1. Vocabulary

networking	создание компьютерной сети
LAN (local area network)	локальная сеть
client-server architecture	архитектура «клиент-сервер»
server	сервер
workstation	рабочая станция
node	узел
protocol	протокол
router	маршрутизатор
Wi-Fi (wireless fidelity)	беспроводная технология
WLAN (wireless local area network)	беспроводная локальная сеть
access point	точка доступа
wireless adapter	беспроводной адаптер
hotspot	хотспот, точка беспроводного доступа в Интернет
topology	топология

bus topology	шинная топология
ring topology	кольцевая топология
star topology	звездообразная топология
WAN (wide area network)	глобальная сеть, охватывающая большие территории
backbone	магистраль
peer-to peer connection	соединение, в котором каждый узел является как клиентом, так и сервером
hub	хаб, концентратор

2. Translate from Russian into English

2.1. Компьютерная сеть — система связи компьютеров и/или компьютерного оборудования (серверы, маршрутизаторы и другое оборудование). Для передачи информации могут быть использованы различные физические явления, как правило, различные виды электрических сигналов, световых сигналов или электромагнитного излучения.

2.2. Маршрутизатор — устройство, обеспечивающее оптимальную передачу данных от сервера к серверу, просматривает заголовок пакета, определяет его оптимальный путь и осуществляет пересылку. Маршрутизаторы выполняют в сети роль регулировщиков движения потоков данных.

2.3. Локальная сеть — это небольшая по масштабу сеть, которая функционирует на сравнительно ограниченном по территории пространстве. В большинстве случаев это здание, многоквартирный дом, офис или предприятие. Доступ к такой сети осуществляется только изнутри и строго определенным кругом пользователей.

2.4. Магистральная сеть связи — часть коммуникационной сети, которая передает трафик с использованием наиболее высокоскоростных (и часто наиболее протяженных) трактов в сети.

2.5. «Клиент-сервер» — вычислительная или сетевая архитектура, в которой задания или сетевая нагрузка распределены между поставщиками услуг (сервисов), называемыми серверами, и заказчиками услуг, называемыми клиентами.

2.6. Адаптер — устройство, позволяющее одной системе соединяться с другой. Адаптеры используются для обеспечения энергопитания и обмена данными. Распространены универсальные адаптеры, позволяющие соединять разные типы устройств.

2.7. Сетевая топология — способ описания конфигурации сети, схема расположения и соединения сетевых устройств.

2.8. «Звезда» — базовая топология компьютерной сети, в которой все компьютеры сети присоединены к центральному узлу (обычно сетевой концентратор). Подобный сегмент сети может функционировать как отдельно, так и в составе сложной сетевой топологии (как правило, «дерево»). Весь обмен информацией идет исключительно через центральный компьютер, на который таким способом возлагается очень большая нагрузка, потому ничем другим, кроме сети, он заниматься не может.

2.9. Топология «общая шина» предполагает использование одного кабеля, к которому подключаются все компьютеры сети. Отправляемое рабочей станцией сообщение распространяется на все компьютеры сети. Каждая машина проверяет, кому адресовано сообщение, и если ей, то обрабатывает его. Принимаются специальные меры для того, чтобы при работе с общим кабелем компьютеры не мешали друг другу передавать и принимать данные.

2.10. «Кольцо» — это топология, в которой каждый компьютер соединен линиями связи только с двумя другими: от одного он только получает информацию, а другому только передает. На каждой линии связи, как и в случае «звезды», работает только один передатчик и один приемник.

3. Reading

3.1. Read the text

When Everything Connects

The wireless was once a big, wood-panelled machine glowing faintly in the corner of the living-room. Today's wireless device is the sleek mobile phone nestling in your pocket. In coming years wireless will vanish entirely from view, as communications chips are embedded in a host of everyday objects. Such chips, and the networks that link them together, could yet prove to be the most potent wireless of them all.

Just as microprocessors have been built into everything in the past few decades, so wireless communications will become part of objects big and small. The possibilities are legion. Gizmos and gadgets will talk to other devices — and be serviced and upgraded from afar. Sensors on buildings and bridges will run them efficiently and ensure they are safe. Wireless systems on farmland will measure temperature and humidity and control irrigation systems. Tags will certify the origins and distribution of food and the authenticity of medicines. Tiny chips on or in people's bodies will send vital signs to clinics to help keep them healthy.

The computing revolution was about information — digitizing documents, photographs and records so that they could more easily be manipulated. The wireless-communications revolution is about making digital information about anything available anywhere at almost no cost. No longer tied down by wires and cables, more information about more things will get to the place where it is most valuable.

For the moment, the mobile phone is stealing the show. It is evolving from a simple phone into a wallet, keychain, health monitor and navigation device. But as mobile-phone technology matures, even more innovation is taking place in areas of wireless that link things only meters or millimeters apart.

For that, thank the cross-breeding of Marconi's radio and the microprocessor. Etched into silicon, the radio is starting to benefit from the dramatic decreases in size and cost and the huge increase in performance that have recently propelled

computing. Satellite-navigation chips today cost as little as a dollar apiece. Radio-frequency identification (RFID) tags can be made so tiny that they fit into the groove of a thumb-print. When power can be wirelessly routed to such devices, something that is not far off, all the pieces will be in place.

Wireless brings countless benefits. Devices and objects can be monitored or controlled at a distance. Huge amounts of data that were once impossible or too expensive to collect will become the backbone of entirely new services. Wireless communications should boost productivity just as information technology has.

Of course, plenty of work will be needed before wireless communications can realise their promise. The first obstacle is novelty. As is usual in the early days of a new industry, all kinds of proprietary systems abound, many of them built from scratch. Until common standards and protocols emerge for machine-to-machine and wireless sensor communications, costs will be a problem.

It is not yet clear who will bang heads together to set standards. Today's mobile-phone businesses may be too busy getting people to talk to bother much about talking machines. Mobile operators see the new field as such a small part of their overall business that it gets relegated to the back-burner[1].

Government will play a crucial role, not least because radio spectrum will be in short supply. That makes it more important than ever that the airwaves are sensibly allocated according to the ability to pay. Special "reserves" and unlicensed spectrum could be put aside for emerging technologies that lack financial or political clout. And politicians and business people would do well to keep an eye on the health risks of electromagnetic radiation. No serious evidence yet suggests it is a danger — but the nonsense over genetically modified foods shows how much a new technology needs popular approval.

A greater concern in the long term is privacy. Today's laws often assume that privacy is guaranteed by a pact between consumer and company, or citizen and state. In a world where many networks interconnect on the fly and information is widely shared, that will not work. At a minimum, wireless networks should let users know when they are being monitored.

But for the moment the danger is surely too much regulation, not too little. It is hard for anyone to picture how wireless will be used, just as it was with electric motors and microprocessors, two earlier stand-alone technologies that have been built into a plethora of devices. Wireless technology will become a part of objects

[1] Back-burner — задний план, второе место.

in the next 50 years rather as electric motors appeared in everything from eggbeaters to elevators in the first half of the 20th century and computers colonised all kinds of machinery from cars to coffee machines in the second half. Occasionally, the results will be frightening; more often, they will be amazingly useful.

Adapted from the "Economist", 28th April 2007

3.2. Comprehension tasks

3.2.1. Answer the questions to the text

1. What are the benefits of making wireless communications part of gizmos and gadgets?
2. Which obstacles wireless communication is to overcome so that it could realize its promise?
3. What is a greater concern in terms of wireless information sharing?

3.2.2. Match the following statements as True or False

1. The wireless-communications revolution is about making digital information about anything available anywhere at almost no cost.
2. Mobile operators see the new field as such a big part of their overall business that it gets relegated to the front-burner.
3. In a world where many networks interconnect on the fly and information is widely shared, today's privacy laws will not work.

4. Discussion

4.1. Comment on the following statement: "It is hard for anyone to picture how wireless will be used... Occasionally, the results will be frightening; more often, they will be amazingly useful".

UNIT 21

1. Vocabulary

ADSL (Asymmetric Digital Subscriber Line)	асимметричная цифровая абонентская линия, модемная технология, в которой доступная полоса пропускания канала распределена между исходящим и входящим трафиком асимметрично
broadband	широкополосная передача
chat	беседа в Интернете
to communicate	передавать информацию, общаться
data transmissionrate	скорость передачи информации
to dial-up	набирать номер
e-mail	электронная почта
external	внешний
FTP (File Transfer Protocol)	протокол передачи файлов
instant messaging	способ мгновенного обмена сообщениями
internal	внутренний
ISP (internet service provider)	компания, предоставляющая доступ в Интернет конечным пользователям — организациям и частным лицам

mailing list	список рассылки
modem	модем
newsgroup	форум
PC card	периферийное устройство для компьютера
power-line internet	скоростной Интернет, использующий высоковольтные линии
to share	обмениваться
satellite	спутник
TCP/IP	набор сетевых протоколов разных уровней модели сетевого взаимодействия
Telnet	сетевой протокол для реализации текстового интерфейса по сети (в современной форме — при помощи транспорта TCP)
to transfer	перемещать, пересылать, передавать
versatile	многосторонний, многогранный, разносторонний

2. Translate from Russian into English

2.1. Интернет — это глобальная компьютерная сеть: около 150 миллионов компьютеров-серверов, соединенных друг с другом каналами связи, хранят общедоступную информацию.

2.2. Всемирная паутина является наиболее известным и признанным средством доступа к информационным ресурсам Интернета.

2.3. Просто щелкнув мышью по ссылке, вы можете перенестись с данной страницы на другую, и возможно, эта новая страница будет находиться на компьютере с другой стороны земного шара.

2.4. Для использования Интернета вам понадобится модем, устройство, которое осуществляет передачу данных путем преобразования цифровых сигналов, поступающих с компьютера, в аналоговые.
2.5. В Интернете для связи используется семейство протоколов TCP/IP, то есть «соглашения», позволяющие компьютерам «общаться» друг с другом независимо от того, к какой сети и каким образом они подсоединены.
2.6. Широкополосный доступ не только обеспечивает богатство информационного наполнения («контента») и услуг, но и способен преобразить весь Интернет как в плане предлагаемого Сетью сервиса, так и в плане ее использования.
2.7. Широкополосная связь — будущее телекоммуникаций; до настоящего времени она помогала людям во многих сферах, таких как электронная почта, видеоконференции между удаленными друг от друга компаниями, интернет-бизнес.
2.8. На сегодняшний день электронная почта — это самое удобное средство связи. Адрес электронной почты на визитной карточке является необходимым атрибутом современного делового человека.
2.9. За последние годы технологии изменились кардинальным образом, предоставив возможность доступа в Интернет через мобильные телефоны, PDA, КПК и даже обычный телевизор.
2.10. Интернет позволяет передавать видео- и аудиосигналы в режиме реального времени, что упрощает возможность общения людям, находящимся на огромных расстояниях друг от друга.

3. Reading

3.1. Read the text

The Internet is under Attack

At a ceremony at the Internet Corporation for Assigned Names and Numbers (ICANN) headquarters in Miami, the last remaining Internet Protocol v4 (IPv4) addresses were handed out to the Regional Internet Registries. The registries are to pass them onto organisations worldwide.

This isn't as desperate as it might sound. Right now we should all be switching to Internet Protocol v6, where addresses are more than plentiful. Created way back in 1996, IPv6 allows for such a huge number of addresses that it's difficult to write them down. In total there are 340,282,366,920,938,000,000,000,000,000,000,000,000 (or 340 undecillion).

However, IPv6 just hasn't gotten its act together. Despite so many addresses, only the tiniest fraction is in use right now. Why? Because switching from IPv4 to IPv6 is far from seamless. Businesses and homes will have to upgrade the firmware in their routers, at the very least and might need new hardware. It's the same elsewhere on the Internet; all the interconnecting yet invisible devices will need to be upgraded or replaced. The thing is that we can't simply turn off the Internet for a few hours to make the change. Operating systems such as Windows and Mac OS X have been IPv6-ready for years but because nobody's actually using it, it's not clear how well they'll work.

However, there's another solution to the shortage of addresses, such as Carrier Grade Network Address Translation that Comcast is currently trialling. Other Internet service providers (ISPs) might follow, and it's something we should watch closely because our very Internet freedom is threatened by it. Carrier Grade Network Address Translation (NAT) allows ISPs to share one Internet address among many users. An entire neighborhood could share a single address, for example. Low-level Internet users who do little more than browse the Web or check e-mail won't know any difference after being switched to Carrier Grade NAT. However, anybody who uses virtual private networking (VPN), who videoconferences site-to-site, or who uses file sharing software will hit a brick wall. Such technologies simply can't operate if Carrier Grade NAT is in use, because they rely on users having full IP addresses.

None of the ISPs want Carrier Grade NAT, or so they say, but the last entry in the above list might give them pause for thought: file sharing. Carrier Grade NAT lets ISPs switch off file sharing under the banner of making a necessary technological fix. Suddenly, ISPs would no longer be a part of the controversial file sharing debate. They wouldn't have to waste money and time responding to requests from copyright holders to identify file sharers. There'd be no more government pressure.

Sure, business users who want to videoconference or VPN into their workplace will complain at not having "proper" Internet connections, but they can always upgrade to a more expensive "business" package, whereby they get their own IP address.

Alongside IP address exhaustion, another warning sign of the times is the proposed expansion of general top-level domains (gTLDs). Top level domains are the endings of Web addresses, such as *.com* and *.org*, as well as country-level domains, such as *.uk* for the United Kingdom, and *.de* for Germany. At the moment everybody in the world either has (or wants) a *.com* address, even though this rarely makes much sense. In fact, there should be top level domains (TLDs) for every profession, type of business, product and so on.

The whole world relying on grabbing *.com* addresses is insane. There are other TLDs, of course, such as *.net*, but *.com* has a stranglehold over the public's imagination. However, this is set to change. The Internet Corporation for Assigned Names and Numbers (ICANN) has finally finished debating a massive expansion of the TLD space, and will soon be inviting applications for new TLDs. However, the US government isn't entirely happy about this. It wants governments to be able to veto new TLDs on grounds of taste or decency or, in fact, whatever reasons they dream up at the time.

The problem is this: what one person in one country finds offensive, somebody in another country might consider healthy. There's a strong chance countries that take offence would simply ban the controversial domain, and thereby break the Internet's democratic approach. The Internet could become fragmented, with access to domains governed entirely by the sensibilities of the party in power in a country at any given particular time.

It's at times of change that organisations and systems are at their weakest, and it certainly feels as if the Internet is both weakened and under attack at the moment. The Internet we will use in just a few years' time might look and operate radically differently compared to what we use today.

References

www.computerworld.com

3.2. Comprehension tasks

3.2.1. Using the information in the article, complete these statements

1. At the ceremony at the ICANN headquarters in Miami,
   (a) the IPv4 addresses were declared exhausted;
   (b) the era of Ipv6 addresses was launched;

(c) the Regional Internet Registries were to distribute the available addresses to their clients around the globe;
(d) the Ipv6 addresses are difficult to write down.

2. The tiniest fraction of Ipv6 addresses is in use because
(a) this protocol requires advanced equipment;
(b) the Internet is likely to be switched off;
(c) Operating systems such as Windows and Mac OS X do not work well;
(d) switching from Ipv4 to Ipv6 is seamless.
3. The solution to the scarcity of addresses that Comcast is currently testing, may result in
(a) serious problems for all Internet users;
(b) lack of privacy for Internet users;
(c) inability for advanced users to exploit the Internet to full extent;
(d) close watch on the Internet usage.
4. Carrier Grade NAT is supposed to give an advantage to the ISPs because
(a) they will get an opportunity to get rid of file-sharing problem;
(b) they will easily communicate with copyright holders;
(c) they will be able to make technological improvements;
(d) they will get government support.
5. The .com domain is expected
(a) to be banned by countries that consider it offensive;
(b) to be used by the insane;
(c) to experience tough competition;
(d) to lose its popularity.

4. Discussion

4.1. Arrange the panel discussion on the topic “The Internet is a blessing or a curse?”
4.2. Prepare a one-minute talk about your favourite service on the Internet.
4.3. Speak on latest advances taking place on the Internet.

UNIT 22

1. Vocabulary

attachment	прикрепление, приложение
to attach	прикреплять
domain name	доменное имя
e-mail address	адрес электронной почты
emoticon	эмотикон, смайлик (emotion + icon)
header	верхний колонтитул, заголовок (как часть сетевого пакета, содержащая адрес отправителя и получателя и др.)
to hold	*зд.* хранить, удерживать (в памяти)
incoming	входящий, поступающий
in common (with)	общее с чем-то, кем-то
mail server	сервер электронной почты
mailbox	почтовый ящик электронной почты
recipient	адресат, получатель
signature	подпись
smiley	смайлик; эмотикон, обозначающий улыбку

snail mail	обычная почта (в противоположность электронной; высмеивает медлительность обычной почты, которая доставляет корреспонденцию со скоростью улитки)
spam	спам (практически бесполезная рекламная информация)
spammer	спамер
subject	тема, предмет
to subscribe	подписывать(ся) на получение сообщений
subscriber	подписчик
username	имя пользователя

2. Translate from Russian into English

2.1. Практически на любом сайте для регистрации, общения, обмена информацией, получения дополнительных услуг и оформления заказа в интернет-магазине обязательно требуется указывать адрес электронной почты.

2.2. Электронная почта имеет много общего с обычной почтовой связью. Написав письмо на листе бумаги, отправитель вкладывает лист в конверт и надписывает адрес получателя. Затем он опускает конверт в почтовый ящик.

2.3. Почтовые серверы хранят электронные почтовые ящики пользователей. Как только пользователь заглянет в свой почтовый ящик, он сразу увидит поступившие письма.

2.4. Обычно для создания, отправки и получения сообщений электронной почты применяются специальные почтовые программы. Другой популярный способ работы с почтой — обычный браузер. Подписчику достаточно зайти на почтовую страницу, чтобы отправлять и получать письма.

2.5. Спам — это массовый побочный эффект электронной почты. Несмотря на то что вы вряд ли сможете полностью избавиться от спама, есть способы уменьшить его количество.
2.6. Есть смысл ставить в известность службу Abuse об особо ретивых спамерах — хотя бы для того, чтобы эта информация защитила других пользователей.
2.7. Для подключения услуги просмотра любой видеопрограммы или видеоролика вам необходимо подписаться на услугу.
2.8. Для чтения электронной почты теперь не обязательно иметь компьютер.
2.9. POP — это самый популярный протокол приема электронной почты. POP-сервер позволяет POP-клиенту загрузить письма, которые были получены им от другого почтового сервера.
2.10. Можно легко допустить ошибку при работе с электронной почтой. Письмо может быть послано случайно. Простое нажатие клавиши или щелчок мышкой могут послать письмо по неправильному адресу.

3. Reading

3.1. Read the text

How E-mail Works

Every day, the citizens of the Internet send each other billions of e-mail messages. If you're online a lot, you yourself may send a dozen or more e-mails each day without even thinking about it. Obviously, e-mail has become an extremely popular communication tool. Have you ever wondered how e-mail gets from your computer to a friend halfway around the world? What is a POP3 server, and how does it hold your mail? The answers may surprise you, because it turns out that e-mail is an incredibly simple system at its core.

According to Darwin Magazine: Prime Movers, the first e-mail message was sent in 1971 by an engineer named Ray Tomlinson. Prior to this, you could only send messages to users on a single machine. Tomlinson's breakthrough was the

ability to send messages to other machines on the Internet, using the @ sign to designate the receiving machine.

An e-mail message has always been nothing more than a simple text message — a piece of text sent to a recipient. In the beginning and even today, e-mail messages tend to be short pieces of text, although the ability to add attachments now makes many messages quite long. Even with attachments, however, e-mail messages continue to be text messages. You've probably already received several e-mail messages today. To look at them, you use some sort of e-mail client. Many people use well-known, stand-alone clients like Microsoft Outlook, Outlook Express, Eudora or Pegasus. People who subscribe to free e-mail services like Hotmail or Yahoo use an e-mail client that appears in a Web page. No matter which type of client you're using, it generally does four things:

- Shows you a list of all of the messages in your mailbox by displaying the message headers. The header shows you who sent the mail, the subject of the mail and may also show the time and date of the message and the message size.
- Lets you select a message header and read the body of the e-mail message.
- Lets you create new messages and send them. You type in the e-mail address of the recipient and the subject for the message, and then type the body of the message.
- Lets you add attachments to messages you send and save the attachments from messages you receive.

Sophisticated e-mail clients may have all sorts of bells and whistles, but at the core, this is all that an e-mail client does. Machines on the Internet can run software applications that act as servers. There are Web servers, FTP servers, telnet servers and e-mail servers running on millions of machines on the Internet right now. These applications run all the time on the server machine and they listen to specific ports, waiting for people or programs to attach to the port.

If someone wanted to send a message, the person would compose a text message in an e-mail client, and indicate that the message should go to a certain recipient. When the person presses the Send button, the e-mail client would connect to the e-mail server and pass to the server the name of the recipient, the name of the sender and the body of the message.

The server would format those pieces of information and append them to the bottom of the XXXX.TXT file. There are several other pieces of information that the server might save into the file, like the time and date of receipt and a subject line.

Your e-mail client allows you to add attachments to e-mail messages you send, and also lets you save attachments from messages that you receive. Attachments might include word processing documents, spreadsheets, sound files, snapshots and pieces of software. Usually, an attachment is not text (if it were, you would simply include it in the body of the message). Since e-mail messages can contain only text information, and attachments aren't text, there's a problem that needs to be solved.

Marshall Brain and Tim Crosby
(http://communication.howstuffworks.com)

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. The introduction of the @ sign allowed e-mail to appear.
2. An e-mail client is a person you write to.
3. Microsoft Outlook, Outlook Express, Eudora or Pegasus seem to be preferred by the Internet users.
4. Depending on which type of client is used, it does four different things.
5. There are quite a few applications acting as servers.
6. The e-mail server acts as an intermediary in the e-mail sending process.
7. The server adds some extra data to the message.
8. Attachments sent via the e-mail should be texts.
9. Attachments are recommended not to include in the main body.
10. E-mail messages are sent in huge numbers.

4. Discussion

4.1. Decide which means of on-line communication best suits the following groups of people. Give your reasons:
- relatives, living far from each other;
- colleagues;
- friends;
- teachers and students;

- researchers;
- scientists;
- housewives;
- pensioners.

4.2. Add some categories of your own.
4.3. Prepare a one-minute talk on the protocols engaged in the e-mail system.
4.4. Discuss recent advances to the e-mail service.

UNIT 23

1. Vocabulary

blog	блог, сетевой дневник
bookmark	закладка (ссылка на адрес просмотренной веб-страницы)
to browse	пролистывать, проглядывать (страницы в Интернете)
browser	браузер, веб-обозреватель, программа ускоренного просмотра (информации)
client	пользователь
cybershopping	интернет-покупки
dot	точка
e-commerce	электронная торговля (коммерческая деятельность, осуществляемая через Интернет)
favourite	любимый (сайт)
filename	имя файла
hyperlink	гиперссылка
hypertext	гипертекст
information highway	информационная супермагистраль (концепция развития средств вычислительной техники)

path	путь, маршрут, траектория
search engine	поисковая система
site	сайт
slash	наклонная черта
spider	поисковый агент, «спайдер»
to surf	переходить с одного сайта на другой
URL (Uniform Resource Locator)	унифицированный указатель информационного ресурса (стандартизованная строка символов, указывающая местонахождение документа в Интернете)
Web page	веб-страница
Web portal	веб-портал
Web site	веб-сайт
Web master	веб-мастер

2. Translate from Russian into English

2.1. Блог есть не что иное, как место, в котором человек может высказать свои мысли, идеи, поделиться своими фото, аудио, видео и так далее.

2.2. Психологи утверждают, что поддерживать веб-блог очень полезно, так как это дает возможность человеку освободиться от накопившихся переживаний и выплеснуть их на страницах своего блога.

2.3. По мере развития блоги стали инструментом рекламы. Если у вас есть персональный компьютер и интернет-соединение, вы можете легко завести свой блог и рекламировать свои продукты.

2.4. Чтобы отыскать в сети интересующий вас сайт, необходимо использовать поисковую систему.
2.5. Важные для пользователя адреса можно сохранять при помощи функции «закладка» на браузере.
2.6. Владельцы аккаунтов известной поисковой системы Google, у которых еще нет дневника на популярном блог-сервисе LiveJournal.com, для авторизации в LiveJournal теперь могут использовать свой Google-аккаунт.
2.7. Проснувшись утром, вы первым делом проверяете почту, заглянув в новенький iPad. За завтраком вы просматриваете Twitter и Facebook; это стало возможным благодаря появившимся приложениям, которые избавили вас от необходимости листать веб-странички.
2.8. Первой cloud-услугой станет создание сайтов в «облаке» при помощи ParallelsPleskSiteBuilder. Данный продукт позволит компании Reg.ru выйти на массовый рынок, а также стать поставщиком законченного комплекса решений и услуг для создания веб-сайтов.
2.9. Благодаря большому количеству шаблонов оформления, которые сгруппированы по отраслям, сконструировать и запустить полноценный сайт может пользователь, не обладающий познаниями в области дизайна и веб-программирования.
2.10. Защитники открытой «паутины» возлагают большие надежды на появление HTML5 — новейшей версии веб-кода, который предлагает возможности удовлетворить стремление к качеству услуг.

3. Reading

3.1. Read the text

* * *

Over the past few years, one of the most important shifts in the digital world has been the move from the wide-open Web to semiclosed platforms that use the Internet for transport but not the browser for display. It's driven primarily by the rise of the iPhone model of mobile computing, and it's a world Google can't crawl, one where HTML doesn't rule. And it's the world that consumers are increasingly

choosing, not because they're rejecting the idea of the Web but because these dedicated platforms often just work better or fit better into their lives. The fact that it's easier for companies to make money on these platforms only cements the trend. Producers and consumers agree: The Web is not the culmination of the digital revolution.

A decade ago, the ascent of the Web browser as the center of the computing world appeared inevitable. It seemed just a matter of time before the Web replaced PC application software and reduced operating systems to a "poorly debugged set of device drivers", as Netscape cofounder Marc Andreessen famously said. First Java, then Flash, then Ajax, then HTML5 — increasingly interactive online code — promised to put all apps in the cloud and replace the desktop with the Web Top. Open, free, and out of control.

But there has always been an alternative path, one that saw the Web as a worthy tool but not the whole toolkit. The argument then was that "push" technologies such as PointCast and Microsoft's Active Desktop would create a "radical future of media beyond the Web". The point was altogether prescient: a glimpse of the machine-to-machine future that would be less about browsing and more about getting. As it happened, PointCast quickly imploded, taking push with it. But just as Web 2.0 is simply Web 1.0 that works, the idea has come around again. Those push concepts have now reappeared as APIs, apps, and the Smartphone. And this time we have Apple and the iPhone/iPad juggernaut leading the way, with tens of millions of consumers already voting with their wallets for an app-led experience. This post-Web future now looks a lot more convincing. Indeed, it's already here.

The Web is, after all, just one of many applications that exist on the Internet, which uses the IP and TCP protocols to move packets around. This architecture — not the specific applications built on top of it — is the revolution. Today the content you see in your browser — largely HTML data delivered via the http protocol on port 80 — accounts for less than a quarter of the traffic on the Internet... and it's shrinking. The applications that account for more of the Internet's traffic include peer-to-peer file transfers, e-mail, company VPNs, the machine-to-machine communications of APIs, Skype calls, and online games, Xbox Live, iTunes, voice-over-IP phones, iChat, and Netflix movie streaming. Many of the newer Net applications are closed, often proprietary, networks.

And the shift is only accelerating. Within five years, Morgan Stanley projects, the number of users accessing the Net from mobile devices will surpass the number who access it from PCs. Because the screens are smaller, such mobile traffic tends

to be driven by specialty software, mostly apps, designed for a single purpose. For the sake of the optimized experience on mobile devices, users forgo the general-purpose browser. They use the Net, but not the Web. Fast beats flexible.

This was all inevitable. It is the cycle of capitalism. The story of industrial revolutions, after all, is a story of battles over control. A technology is invented, it spreads, a thousand flowers bloom, and then someone finds a way to own it, locking out others. It happens every time.

Chris Anderson and Michael Wolff
Adapted from the "Web Is Dead. Long Live the Internet"

3.2. Comprehension tasks

3.2.1. Tick those statements which reflect the position of the author

1. The recent shift in the digital world helps consumers feel fit.
2. The move from the wide-open Web to semi closed platforms gave rise to iPhone models.
3. Consumers appreciate new changes because they make their lives more convenient.
4. The Web was thought to flourish by placing applications in the cloud.
5. New technologies were supposed to weaken the Web position in the digital world.
6. The future of the Web is undoubtedly stable.
7. Web sites can be published without restraint, whereas apps require approval by third parties.
8. Apple has become the leader in the struggle for the world without the Web.
9. Consumers are eager to part with their wallets to obtain modern devices.
10. Online businesses will find new ways to drive revenue online, and selling apps may well be one of them.
11. Mobile phones providing access to the Internet are destroying the Web.
12. Today's apps do some things better than the Web, which is why they are so popular.
13. The Web is a system for making connections — between documents, devices and ultimately people.
14. Nothing is infinite. The Web is not exclusion.

4. Discussion

4.1. Discuss all the changes taking place in the digital world.
4.2. Prepare a report on the Web building codes.
4.3. Prepare a one-minute talk on the future of the Web.

UNIT 24

1. Vocabulary

AU (arithmetic unit)	арифметический блок
background	фон
to convert	преобразовывать, трансформировать, переводить (из одного состояния в другое)
to fill in	заполнять
CSS (Cascading Style Sheets)	вложенные таблицы стилей
to display	выставлять, показывать; демонстрировать
flash	мгновенный
HTML (Hyper Text Markup Language)	язык HTML (стандартный язык, используемый для создания веб-страниц)
HTML editor	редактор HTML
HTML tag	код, тег (специальный символ, определяющий раздел документа)
to intend	намереваться, предназначать, планировать

JPEG (Joint Photographic Experts Group)	метод сжатия изображений и соответствующий графический формат, часто используемый в Интернете (характеризуется компактностью файлов и более быстрой передачей, чем GIF, но медленным декодированием и «потерей» деталей изображения)
layout	планировка, план, расположение; разметка
MIDI (Musical Instrument Digital Interface)	цифровой интерфейс музыкальных инструментов
option	опция, дополнительное оборудование, дополнение к стандартной комплектации
shockwave	ударная волна
table	таблица
template	лекало, образец, трафарет, шаблон
WAV (wave form audio)	звуковой файл, файл с оцифрованной звуковой информацией

2. Translate from Russian into English

2.1. В Интернете ключевую роль играют сайты, для создания которых существует большое количество технологий.

2.2. Можно говорить и о большом количестве разновидностей сайтов. Бывают сайты — интернет-магазины, служащие для продажи товаров и услуг. Бывают сайты-визитки, небольшие сайты из пяти страниц, служащие визитной карточкой какой-либо организации.

2.3. Чтобы создать собственный сайт самостоятельно, необходимо изучить большое количество литературы (бумажной либо электронной), в которой рассмотрены основы HTML.

2.4. Язык HTML не является языком программирования. Это язык разметки гипертекста.
2.5. HTML — это набор тегов (управляющих слов), которые позволяют представить обычный текст в форматированном виде.
2.6. Представить так текст можно только в специальных программах — браузерах (это программы, с помощью которых «бродят» по Интернету).
2.7. Главным признаком HTML-документа является наличие в нем гиперссылок (или просто ссылок) на другие документы, сайты, файлы, картинки и т.д.
2.8. Именно возможность добавлять в страницы ссылки на объекты вне ее и сделала Интернет столь популярным и удобным для использования.
2.9. Ссылки подразделяются на внешние и внутренние, а также на текстовые и графические. Внешние ссылки ведут за «пределы» HTML-страницы, внутренние — на различные части этой же страницы.
2.10. Текстовые ссылки представляют собой текст (по умолчанию он выделен синим цветом и подчеркнут), а графические — в качестве объекта, по которому нужно щелкнуть для перехода, содержат какое-либо изображение.

3. Reading

3.1. Read the text

***

Every Web designer is keen on creating an outstanding site. To achieve this goal one should be aware of certain secrets. It is essential to bear in mind that usability and the utility, not the visual design, determine the success or failure of a Web site. Since the visitor of the page is the only person who clicks the mouse and therefore decides everything, user-centric design has become a standard approach for successful and profit-oriented Web design.

This approach requires understanding how users interact with Web sites, how they think and what are the basic patterns of users' behavior. Basically, visitors glance at each new page, scan some of the text, and click on the first link that

catches their interest or vaguely resembles the thing they're looking for. Most users search for something interesting (or useful) and clickable.

Moreover, users appreciate quality and credibility of information presented. If a page provides users with high-quality content, they are willing to compromise the content with advertisements and the design of the site. This is the reason why not-that-well-designed Web sites with high-quality content gain a lot of traffic over years. Thus, it may be concluded that content is more important than the design which supports it. Analyzing a Web page, users search for some fixed points or anchors which would guide them through the content of the page.

On the other hand, if a Web site isn't able to meet users' expectations, then the designer failed to get his job done properly. The higher is the cognitive load and the less intuitive is the navigation, the more willing are users to leave the Web site and search for alternatives.

The Web designer should not forget that users are accustomed to following their intuition. Users neither make optimal choices, nor do they search for the quickest way to find the information they're looking for. They don't usually scan a Web page in a linear fashion, going sequentially from one site section to another one. Instead they choose the first reasonable option. As soon as they find a link that seems like it might lead to the goal, there is a very good chance that it will be immediately clicked. A clear structure, moderate visual clues and easily recognizable links can without doubt help users to find their path to their aim.

However, there appears another significant aspect: users should be allowed to explore the site without forcing them into sharing private data. Ideally, all barriers are advisable to be removed, subscriptions or registrations should not be required. A user registration alone is enough of an impediment to user navigation to cut down on incoming traffic.

As Web sites provide both static and dynamic content, some features of the user interface attract attention more than others do. Obviously, images are more eye-catching than the text. Focusing users' attention to specific areas of the site with a moderate use of visual elements can help your visitors to get from point A to point B without thinking of how it actually is supposed to be done.

In other words: the less thinking needs to happen behind the scenes, the better is the user experience which is the aim of usability in the first place.

Moreover, modern Web designs are usually criticized due to their approach of guiding users with visually appealing 1-2-3-done-steps, large buttons with visual effects etc. But from the design perspective these elements actually aren't a bad

thing. On the contrary, such guidelines are extremely effective as they lead the visitors through the site content in a very simple and user-friendly way. Letting the user see clearly what functions are available is a fundamental principle of successful user interface design. It doesn't really matter how this is achieved. What matters is that the content is well-understood and visitors feel comfortable with the way they interact with the system.

It should be mentioned that it's necessary to adjust the writing style to users' preferences and browsing habits as the Web is different from print. Web designers are recommended to remember the key points: effective writing is to use short and concise phrases (come to the point as quickly as possible), use scannable layout (categorize the content, use multiple heading levels, use visual elements and bulleted lists which break the flow of uniform text blocks), use plain and objective language.

In addition, the "keep it simple"-principle (KIS) should be the primary goal of site design. Users are rarely on a site to enjoy the design; furthermore, in most cases they are looking for the information despite the design. Strive for simplicity instead of complexity.

From the visitors' point of view, the best site design is a pure text, without any advertisements or further content blocks matching exactly the query visitors used or the content they've been looking for. This is one of the reasons why a user-friendly print-version of Web pages is essential for good user experience.

It may be concluded, that with conventions you can gain users' confidence, trust, reliability and prove your credibility, since conventional design of site elements doesn't result in a boring Web site.

References

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http://blog.beeitltd.com/2011/02/10-ideologyof-efficient-Web-design/

3.2. Comprehension tasks

3.2.1. Using the information in the article, complete these statements

1. According to the text, the first thing a Web designer should take into account is
   (a) a visual presentation of the sight;
   (b) the number of links on the sight;
   (c) users' preferences;

(d) amusing information.

2. The feature of the sight a user is unlikely to appreciate is as follows:
   (a) credibility of information;
   (b) sophisticated navigation;
   (c) a lot of images;
   (d) a number of fixed parts.
3. Web designers are recommended to avoid
   (a) presenting visual elements on the sight;
   (b) sharing personal information;
   (c) making users register;
   (d) hard thinking to get from point A to point B.
4. A user-friendly design means
   (a) high-quality content;
   (b) a number of links to advertisements;
   (c) unambiguous navigation;
   (d) necessity to register.
5. While creating a good Web site, designers should not neglect
   (a) conventional features;
   (b) registration and subscription;
   (c) sophistication;
   (d) mark-up language.

4. Discussion

4.1. Discuss your university's Web site.
4.2. Prepare a one minute talk on the features of an ideal Web site.
4.3. Describe the Web site you visit quite often.

UNIT 25

1. Vocabulary

IRC (Internet Relay Chat)	интернет-чат
channel	канал
chat room	виртуальная комната
chat client	чат-клиент
chat server	чат-сервер
Web chat	веб-чат
nickname	ник, имя пользователя
channel operator (chanop, op)	чат-оператор
IM (instant messaging)	мгновенный обмен сообщениями
buddy list	список друзей
contact list	список контактов
video conferencing	видеоконференция
online telephone conversation	телефонный разговор онлайн
applet	прикладная программа, апплет
VoIP (voice over Internet protocol)	интернет-телефония

three-dimensional (3D)	трехмерный
avatar	аватар, картинка
VRML (Virtual Reality Modelling Language)	язык моделирования виртуальной реальности

2. Translate from Russian into English

2.1. При выборе ника для регистрации в программе мгновенного обмена сообщениями пользователи часто изобретают необычные имена.
2.2. В следующий раз наша компания проведет видеоконференцию со своими зарубежными партнерами.
2.3. Интересно, скольких людей из вашего огромного списка контактов вы никогда в жизни не видели?
2.4. В интернет-чате вы можете общаться сразу по нескольким каналам одновременно.
2.5. Современные технологии позволяют использовать трехмерные изображения для аватаров.
2.6. Сейчас существует большое количество чат-клиентов, и каждый пользователь может выбрать программу на свой вкус.
2.7. Все большую популярность приобретает интернет-телефония — возможность общаться с друзьями по всему миру практически бесплатно.
2.8. Я собираюсь изучать язык моделирования виртуальной реальности, чтобы иметь возможность самому создавать симуляторы.
2.9. Владельцы и операторы интернет-чатов обязаны контролировать поведение пользователей в виртуальных комнатах.
2.10. Несколько дней назад популярный веб-чат был взломан, и хакеры получили доступ к спискам контактов всех пользователей.

3. Reading

3.1. Read the text

Netiquette

The word netiquette is a combination of 'net' (from Internet) and 'etiquette'. It means respecting other users' views and displaying common courtesy when posting your views to online discussion groups.

As you become involved with online discussion groups, you will find that each group has its own accepted rules of behaviour. Many of these have come about because of technical limitations.

For example, on an e-mail discussion list — where not everyone may have seen past messages — it's considered polite to quote from a message you're replying to, so your response has context. It's also considered polite to keep those quotes short and relevant. On a Web based forum, however, where the original messages are visible to all, quoting is often unnecessary.

The Basic Rules

Refrain from personal abuse. You may express robust disagreement with what someone says, but don't call them names or threaten them with personal violence.

Don't spam. That is, don't repeatedly post the same advertisement for products or services. Most sites have strict and specific rules about who is allowed to post ads and what kind of ads they are.

Write clearly and succinctly. On a site that has many non-native English speakers, avoid using slang they may not understand.

Remember that your posts are public. They can be read by your partner, your children, your parents, or your employer.

Stay on-topic, especially when you're new. Don't post about football in a hair-care forum or about hair care in a gardening forum!

Don't expect other people to do your homework for you. If you're looking for technical help, for example, don't ask questions you could easily answer yourself by

reading the manual or online help provided with the product. When you do ask for help, include details of what attempts you've made to solve the problem. It will save time and also show people that you are making an effort to help yourself.

Do not post copyrighted material to which you do not own the rights. Sites vary in how strict they are about this, but as well as facing the possibility of legal action by the rights holder, you may also get the site sued.

The site's owner, perhaps assisted by one or more moderators, has the final say in enforcing the rules.

Helpful Hints

Almost every site has a page for newcomers that describes its rules of good behaviour. Usually this page will appear as the terms and conditions you must agree to when you open your account. However, sites may have additional information. You should read all of it.

Check to see if the site has a FAQ (frequently asked questions) section. FAQs typically include questions that have been asked and answered hundreds of times. If you have any queries about site protocol, you will most likely discover the dos and don'ts here.

Finally, it's always wise to see what the discussion group has been talking about for a week or two before you begin to post your messages. Online, as in real life, it can take a long time to get past a bad first impression.

Wendy Grossman for BBC, 9th September 2010

3.2. Comprehension tasks

3.2.1. Using the information in the article, complete these statements

1. Quoting on an e-mail discussion list
   (a) is essential and its absence is considered impolite;
   (b) must be avoided;
   (c) is given only if past messages have not been read by participants;
   (d) is accompanied with the context.
2. Which of the following rules are not mentioned in the text?
   (a) your language must be comprehensible;
   (b) avoid using words which can be understood only by a small group of people;
   (c) your messages should not be long;
   (d) non-native English speakers must write in clear, understandable language.

3. If you are looking for technical help
   (a) you may expect that people will explain everything in detail;
   (b) you may ask any questions you want;
   (c) describe your problem in detail;
   (d) you can find all necessary information in manuals and online help for the product.
4. Newcomers to the site can find useful information in
   (a) site protocol;
   (b) their account;
   (c) frequently asked questions section;
   (d) manuals.
5. Which proverb best reflects the message in the last paragraph?
   (a) no pains, no gains;
   (b) first impressions are most lasting;
   (c) when in Rome do as the Romans do;
   (d) haste makes waste.

4. Discussion

4.1. In virtual worlds people often do not know each other and that gives users the feeling of freedom what to say and how to say. As a consequence, people ignore rules of behaviour and verbal abuse is a usual thing in the Internet nowadays.
- Is it possible to control users' behaviour in forums and chat rooms?
- What can be done to stop Internet abuse?
- How do you react to other users' insults?
- What is trolling? Why do people troll?

UNIT 26

1. Vocabulary

cracker	интернет-взломщик
scam	мошенничество
phishing	фишинг
cyberstalking	киберпреследование, виртуальное преследование
piracy	пиратство
malware	вредоносное программное обеспечение
virus	вирус
worm	червь
Trojan horse	троянская программа
spyware	шпионское программное обеспечение
antivirus program	антивирусная программа
scanner	сканер
firewall	межсетевой, сетевой экран или фильтр
digital certificate	цифровой сертификат

2. Translate from Russian into English

2.1. При фишинге мошенники используют незнание пользователями правил пользования сетями.
2.2. Многие пользователи хотя бы один раз подвергались виртуальному преследованию в сети.
2.3. Установка межсетевого экрана позволит уменьшить количество вредоносного программного обеспечения.
2.4. Шпионское программное обеспечение — один из самых распространенных способов собрать конфиденциальную информацию о пользователе.
2.5. Одним из способов обезопасить личные данные является использование цифрового сертификата.
2.6. В 2007 году произошло резкое увеличение числа троянских программ, занимающихся кражей данных, которые пользователь вводит в веб-форму.
2.7. Фишинг основан исключительно на методах социальной инженерии, и как только в дело вступают вредоносные программы, атака уже не может более считаться фишингом.
2.8. Вирусы распространяются, копируя свое тело и обеспечивая его последующее исполнение: внедряя себя в исполняемый код других программ, заменяя собой другие программы, прописываясь в автозапуск и др.
2.9. Вирусом или его носителем может быть не только программа, содержащая машинный код, но и любая информация, содержащая автоматически исполняемые команды, — например, пакетные файлы и документы Microsoft Word и Excel, содержащие макросы.

3. Reading

3.1. Read the text

Cyberstalking and Law Enforcement: Keeping up with the Web

Four years ago, the word cyberstalking hadn't even been coined yet. No one knew what to call it then; some called it online harassment, online abuse or cyber-harassment. And we're not talking two people arguing with each other or calling each other bad names. These were incidents where it had gone beyond an annoyance and had become frightening. As more and more incidents became known and victims reached out to law enforcement for help, all they received were either blank stares or were told to turn off their computer. States didn't have laws in place to protect victims and their harassers kept up the harassment, escalating sometimes to real-life stalking situations.

So, what is cyberstalking? It's when an online incident that spirals so out of control, it gets to a point where the victim fears for their life.

Case Example

In 1999, "Nanci" went into a Worcester, Massachusetts romance chat room. Another chatter commented that he did not like her username. She defended herself and soon the two began arguing with each other in the chat room. But the argument didn't end. Each time Nanci tried to log onto the chat room, her harasser was there, waiting for her, and became more aggressive. At one point, he told her he'd hired someone else in the chat room to beat her up; another time he posted information he'd found out about her online, who her father was and where she lived, then said he wouldn't be happy until she was "six feet under the ground".

He'd become a cyberstalker.

Justifiably horrified, Nanci went to her local police, who basically laughed at her and told her there was nothing to be done. Yes, even with the implied death threat. The harasser became more aggressive and began e-mailing or Instant Messaging Nanci, telling her what kind of car she was driving, where she'd been earlier that day, and the name of her daughter. Nanci went to the State Police, the county District Attorney, then the State Attorney General. Each one pointed fingers at the other, claiming they couldn't help her, but that the other department should.

Nanci finally hired a lawyer, filed a civil suit, then contacted local media. When she appeared in court with TV journalists following her, the D.A. backed down and began helping her. Charges were finally filed against her cyberstalker and a trial date has been set for later this year.

But it shouldn't have gone that far.

"Cyberstalking often receives a low priority in computer crime cases", says Greg Larson, Vice President of Internet Crimes, Inc., "Police departments usually have limited manpower for computer crimes, so in importance, these cases seem to put on the back burner until a serious incident occurs".

What Law Enforcement is Doing Now

Law enforcement agencies now know that cyberstalking is a very real issue that needs to be dealt with, from local police departments to state police, the FBI, and US Postal Inspection Service, among others. Many are asking their officers to learn how to use the net and work with online victim groups such as WHOA (Women Halting Online Abuse), SafetyEd and CyberAngels. Others are attending seminars on cyberstalking being held throughout the country by companies such as Advanced Professional Seminars. And many law enforcement agencies are turning to companies like Internet Crimes, Inc. for one-day workshops where their officers can learn how to track down cyberstalkers and how to handle victims.

"I've found there is a need and a desire on the part of law enforcement to gain skills in the areas of combating online crime", comments Henry Quinlan, founder of Advanced Professional Seminars. "The future presents some interesting problems for law enforcement, especially in the area of recruiting people with computer skills".

Larson finds law enforcement is willing to learn, to grow and to do what they swore to do: Protect and Serve — online and offline.

J. A. Hitchcock
July/August 2000, issue of Link-UP

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. The problem of cyberstalkng has a long history.
2. Cyberstalking can be used to describe a situation when two people are having a quarrel online.
3. Victims of cyberstalking used to be neglected by officials.

4. Nanci's harasser threatened to confine her underground.
5. Nanci's pursuer learnt much personal information about her.
6. The police started investigating Nanci's case after her appearance on TV.
7. Nanci's harasser was convicted.
8. The reason why cyberstalking has low priority with law enforcement agencies is that officers have little computer knowledge.
9. Cyberstalking is drawing more and more attention of officials.
10. Law enforcement agencies are going to recruit more people to combat cyberstalking.

4. Discussion

4.1. How much can these pieces of advice help in case of cyber stalking?

• Use your primary e-mail account only for messages to and from people you know and trust.

• Get a free e-mail account from someplace like Hotmail, Gmail, and use that for all your other online activities.

• When you select an e-mail username or chat nickname, create something gender-neutral and like nothing you have elsewhere, or have had before. Try not to use your name.

• Don't fill out profiles for your e-mail account, chat rooms, IM (instant messaging), etc.

• Do set your options in chat or IM to block all users except for those on your buddy list.

• Do learn how to use filtering to keep unwanted e-mail messages from coming to your e-mail box.

• If you are being harassed online, try not to fight back. This is what the harasser wants — a reaction from you. If you do and the harassment escalates, do the following:

(a) contact the harasser and politely ask them to leave you alone;
(b) contact their ISP and forward the harassing messages;
(c) if the harassment escalates, contact your local police;
(d) if they can't help, try the State Police, and the Prosecutor;
(e) contact a victims group.

UNIT 27

1. Vocabulary

e-commerce, online shopping	электронная коммерция
online shop	онлайновый, интернет-магазин
shopping cart program	корзина в интернет-магазине
secure socket layer (SSL)	уровень защищенных сокетов (криптографический протокол)
payment gateway	платежная система
comparison engine	программа сравнения цен в интернет-магазинах
shopping basket	корзина (в интернет-магазине)
checkout button	кнопка «выписать счет», «оплатить», «оформить заказ»
log in	войти в систему под своим именем
sign up	зарегистрироваться
account	учетная запись
log out	выйти из системы
digital wallet	цифровой кошелек, интернет-кошелек

dotcom	дотком (интернет-компания, бизнес которой сосредоточен исключительно в Интернете)
internet auction	интернет-аукцион

2. Translate from Russian into English

2.1. Как сделать заказ через сайт?

- Выберите товар и нажмите кнопку «В корзину».
- На основании выбранных вами товаров формируется ваша корзина.
- После проверки правильности вашего заказа нажмите кнопку «Оформить заказ».
- Внимание! В случае если при формировании корзины вы не смогли найти нужный вам товар, укажите его наименование и необходимое количество в поле «Дополнительная информация», расположенном внизу формы.
- Заполните информационные поля анкеты (Внимание! Для зарегистрированных пользователей заполнение анкеты не требуется.)
- Нажмите кнопку «Отправить».
- После того как вы отправили заказ, менеджер компании свяжется с вами для подтверждения заказа.

2.2. Совершая оплату через Интернет, покупатель заполняет специальную форму, вводя в нее среди прочей информации номер своей кредитной карточки. Далее данные передаются через Интернет на веб-сервер интернет-магазина или процессинговой компании, проводящей электронные платежи.

- Проблема в том, что системный администратор, как правило, имеет полный и ничем не ограниченный доступ к базе данных, что создает потенциальную угрозу для кражи конфиденциальной информации.

3. Reading

3.1. Read the text

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Although online shopping has many advantages, there are also problems which may occur from time to time. Ordering the wrong product, receiving the wrong item and the need to return a purchase can often be significant enough to make a potential online shopper reconsider the decision to purchase again.

Although these problems are some of the most common online shopping glitches, they do not happen frequently. However, when these problems do occur they can cause a great deal of stress and frustration for the online shopper. We'll discuss some of these common problems in an attempt to help the reader make a clear decision about whether or not to purchase an item on the Internet.

Ordering the Wrong Item

When shopping in traditional brick and mortar stores, it is quite difficult to accidentally purchase the wrong item because the sales process typically involves you physically carrying the item up to the sales counter and paying for it. In online shopping, where the consumer never physically handles the item before the process is complete and the item delivered, it is certainly possible to purchase the wrong product.

Most often this occurs when the customer uses the Web site to make the purchase and clicks on the wrong item or when the consumer contacts customer service to make the buy and provides a different product number or code than the one for the product they really want. Other times, the consumer clicks on the correct product and provides an accurate product number but he may still make a mistake if there are size options or different colors to choose from. This problem can be rather troubling because the consumer will be disappointed when the wrong product shows up.

The Wrong Product Was Delivered

Even when online shoppers do not make mistakes during the ordering process, it is still possible for the consumer to receive the wrong product. This often occurs

when the orders are filled by hand and a mistake is made in the online retailer's warehouse. A warehouse worker may ship the wrong item completely or may ship the correct item in the wrong size or color.

Again the consumer will likely not know a mistake was made until the product arrives. Usually, the online retailer will likely take responsibility for returning the incorrect item and will ship the correct item as soon as possible. However, in some cases, this may not completely correct the problem. For example, a consumer who purchased an item for a specific event or as a gift, may not receive the replacement item in time.

Returning an Incorrect Item

In situations where the online shopper orders the wrong item as well as situations where the online retailer mistakenly ships the wrong item, there may still be a need to return something. Although this may not seem to be a big problem, it can be particularly irritating for some consumers. Online shoppers who choose to do their shopping online specifically because they work odd hours may have a great deal of difficulty returning products.

The usual process of shipping the item back to the online retailer will generally involve taking the item to a post office. Depending on the hours you work, it may be difficult to get to a post office during regular business hours and may require taking time off from work to return the product to the retailer.

Online shopping, just like anything else in life, has times where not everything goes to plan. Make sure to shop at reputable merchants who have proven customer service and your chances of being a satisfied Online customer are very good.

Pierre Belanger
(EzineArticles.com)

3.2. Comprehension tasks

3.2.1. Answer the following questions

1. What main problems with online shopping does the article describe?
2. How often do these problems occur?
3. What can online shopping problems lead to?
4. Why is it difficult to choose a wrong item in an ordinary shop?
5. What are the main reasons for choosing a wrong item online?

6. Which can cause more trouble: choosing a wrong model or choosing a wrong size/colour?
7. What problems can arise at the delivery stage?
8. Why can these problems happen?
9. What is the usual solution to delivery problems?
10. Why can the replaced item bring no satisfaction sometimes?
11. What problems can occur while returning the wrong item?
12. What kind of online shops does the author recommend to purchase in?

3.2.2. Tick those statements which reflect the position of the author

1. Problems with online shopping are irritating rather than critical.
2. Most mistakes occur due to human factor.
3. Shopping online is inconvenient for those who work odd hours.
4. Choosing the wrong size or colour are the most commonly made mistakes.
5. It is quite easy to return the shipped item if you are not satisfied with it.
6. Once having a problem with online shopping customers are likely to stop purchasing on the Internet.

4. Discussion

4.1. Compare and contrast brick-and-mortar and online shops in terms of
- availability;
- working hours;
- prices;
- deliveries;
- staff;
- guarantees.

UNIT 28

1. Vocabulary

electronic banking	электронные банковские операции
online banking, internet banking	банковские операции, проводимые через Интернет
brick-and-mortar bank	традиционный банк
brick-and-click bank	банк, занимающийся как традиционными, так и онлайновыми банковскими операциями
virtual bank, internet bank	банк, работающий только через Интернет
wireless banking	беспроводные банковские операции
pay bills	оплачивать счета
schedule payment	составлять, упорядочивать расписание платежей
transfer the funds	переводить деньги
check account balances	проверять состояние счета
save online statements	сохранять выписки со счета в Интернете
send short message notifications	посылать SMS-оповещения
trade stocks	торговать акциями

two-factor authentication	двойная проверка подлинности, двухуровневая идентификация
PIN (Personal Identification Number)	личный идентификационный номер, ПИН-код
TAN (Transaction Authorization Number)	номер авторизации операции
security token	маркер доступа
biometric authentication	биометрическая идентификация

2. Translate from Russian into English

2.1. Номер клиента в системах электронных расчетов — это уникальная комбинация цифр, с помощью которой вас идентифицируют как пользователя интернет-банка.

2.2. Троянцы можно легко приспособить для кражи реквизитов кредитных карт, и их использования может оказаться вполне достаточно, чтобы взломать систему защиты банка: здесь все зависит от степени надежности принятых мер информационной безопасности. Многие банки, использующие однофакторную аутентификацию пользователей, уязвимы для относительно простых видов атак.

2.3. Банки, которые более ответственно относятся к своим системам защиты, используют, как минимум, один динамический пароль — одноразовый пароль, который действителен только для одной сессии. Такая аутентификация может применяться как при входе в систему, так и при подтверждении транзакции, а лучше в обоих случаях. Это сделает невозможным подтверждение транзакции с помощью устаревшего пароля, а в идеале — остановит злоумышленника уже при попытке несанкционированного входа в систему.

2.4. Интернет-банк позволяет удобно и безопасно следить за состоянием своего счета, производить перечисления и вклады и пользоваться другими услугами банка, используя Интернет.

3. Reading

3.1. Read the text

Chase Online Banking Services Still Down

Chase's online customers were unable to conduct business on the Web site of Chicago's biggest bank into Tuesday evening, the down time having stretched on for more than a day.

"It's an eternity in the online world", said Jacob Jegher, a senior analyst with Celent, a Boston-based financial services research and consulting firm.

Chase has 16.5 million customers who use its online services.

The biggest issue was the inability of customers to pay bills online, Jegher said.

"If you're a last-minute person in terms of paying your bills ... you'll be unable to do it", he said. "The implications are late payments and fees".

Chase said it would work with customers who encountered such problems.

"Whatever the issue is, we're happy to talk with them", said spokesman Tom Kelly. He said customers' personal information and bank balances remain secure.

Chase said automatic payments haven't been affected.

As of Tuesday evening, the nation's second-largest bank did not have an estimate as to when its problem, which it describes as "technical", would be fixed.

JPMorgan Chase & Co. Chief Executive Jamie Dimon apologized for the glitch at a banking conference in New York on Tuesday afternoon.

In the absence of more specific information on what caused Chase's problem, speculation swirled on Twitter and online message boards.

There are many possibilities, said Jegher. "It could be a security and fraud issue, or it could be more basic, a technical glitch".

In January, some Bank of America customers had trouble accessing online accounts, but the problem was resolved in less than a day. From the outset, BofA ruled out a cyber-attack.

The "general rule is transparency and ... get it out quickly", said public relations specialist Jonathan Dedmon, a principal at the Dilenschneider Group.

However, "sometimes it just takes awhile to get all the facts and the confidence that the problem is being resolved correctly", he said.

The problem, which affected the Chase online sites for retail banking and credit card transactions, began Monday night.

This kind of glitch comes just as financial firms are finding it easier to get customers to go digital. Larger banks have made a massive push to encourage business to be handled online, both because it's less costly for the bank and because it's convenient for the customer.

And that push has worked. For the first time, more bank customers — 25 percent — prefer to bank online compared with any other method of transaction, a 2009 survey from the American Bankers Association showed. The Internet is the preferred banking mode for customers under age 55.

Roupen Demirdjian, owner of Middle Eastern restaurant Sayat Nova in Chicago, visited a Chase branch late Tuesday afternoon to cash a check. He said he often uses online banking to balance his account, as well as to pay bills. He said he didn't need to access to his online account immediately, but said he'd be upset if the system were down another day or two.

"Then I wouldn't be able to point and click", he said. "My check-writing isn't what it used to be".

Kathy Bergen and Becky Yerak
Posted 14th September 2010

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. The problem with accessing accounts online continued for two days.
2. The biggest problem was that online clients could not pay their bills.
3. The consequences of late payments were fines.
4. The problem was fixed by Tuesday evening.
5. Jacob Jegher explained what caused the glitch of the system.
6. The problem with some Bank of America customers was in January was cause by a cyber-attack.
7. It is not always possible to quickly fix the problem with online access to bank accounts.
8. Both banks and customers find it useful to go digital in banking.

9. The average age of those who prefer online banking is 55.
10. Roupen Demirdjian prefers online banking because he has got atrocious handwriting.

4. Discussion

4.1. Discuss in small groups what could be the possible reasons for Chase's online system failure, then compare your ideas in class.
4.2. Suggest possible fixes for these problems.

UNIT 29

1. Vocabulary

mobile phone, cellular phone	мобильный телефон
coverage area	зона покрытия
base station	базовая станция
sells	«соты»
roaming	роуминг
out of range	вне зоны действия сети, нет связи
1G phones, first generation phones	сотовый телефон первого поколения
2G phones, second generation phones	сотовый телефон второго поколения
digital	цифровой
GSM (Global System for Mobile Communications)	стандарт GSM, глобальная система мобильных коммуникаций
sim card (subscriber identity module)	СИМ-карта (модуль идентификации абонента)
3G phones, third generation phones	сотовый телефон третьего поколения
smart phone	смартфон

UMTS (Universal Mobile Telecommunications Systems)	универсальные системы мобильной коммуникации
4G phones, fourth generation phones	сотовый телефон четвертого поколения
bluetooth	технология беспроводного доступа блютус
WAP (Wireless Application Protocol)	протокол беспроводного доступа
PDA (Personal Digital Assistant)	КПК (карманный персональный компьютер)
MP3, MPEG-1, MPEG-2 audio layer III	формат МП3
programmable ring tones	программируемые мелодии для телефона
changeable faceplate	сменная лицевая панель
built-in digital camera	встроенная цифровая камера
hands-free kit	гарнитура «хэндс-фри»
speakerphone	громкая связь

2. Translate from Russian into English

2.1. Данная модель КПК имеет сменную лицевую панель и удобную гарнитуру «хэндс-фри».

2.2. Разделение зоны покрытия на несколько элементов («сот») способствует многократному использованию частоты по всему городу, поэтому миллионы людей могут пользоваться мобильными телефонами одновременно.

2.3. Аналогом сотовой сети считается мобильная технология первого поколения, с того времени как начали использовать цифровую передачу информации (второе поколение), число каналов значительно увеличилось.
2.4. Сотовый телефон периодически переключается с одной базовой станции на другую, от которой исходит более мощный сигнал.
2.5. На большинстве телефонов, когда вы только пересекаете границу, услуга роуминга высвечивается автоматически, однако в любом случае перед поездкой лучше проверить карту покрытия мобильной связи.
2.6. Цифровые телефоны превращают голос в двоичную систему, а затем сжимают его, благодаря чему от трех до десяти звонков с цифровых телефонов занимают место, равное одному аналоговому звонку.
2.7. СИМ-карты сохраняют всю информацию и номера идентификации, которые необходимы для подключения к мобильному оператору, что позволяет не менять сам телефон.
2.8. Высокоскоростная передача данных 3G идеальна для скачивания информации из Интернета по протоколу беспроводного доступа, отправки и получения больших мультимедийных файлов.
2.9. Для многих пользователей важными характеристиками телефона являются наличие хорошей встроенной цифровой камеры, а также функция громкой связи.
2.10. Смартфон можно определить как устройство, взявшее от мобильного телефона форму и базовый набор функций и дополненное интерфейсом и функциональностью компьютера. Обязательным условием для смартфонов является наличие операционной системы.

3. Reading

3.1. Read the text and find suitable sentences among given below to fill the gaps

Types of Cell Phones

Cell phones have certainly come a long way in the last few decades, and the rate of progressing technology has given us a device that is so much more than just a

'phone' in today's world. |1|_____. When you see the kind of tasks that you can carry out on your smartphone you will be amazed at the simplicity of them, and their effectiveness as well.

Today, you can use your phone for surfing the Internet and opening heavy flash based Web sites, you can access your social networking accounts and share information and pictures with friends from all around the world. You can download content from these devices, you can chat with your friends using various IM apps, you can share content with others using Bluetooth technology, you can store and access large amounts of songs, videos and movies, you can play tons of great games, you can work with spreadsheets and word processors, you can click pictures and shoot videos and then edit them expertly, you can have a video chat with people from anywhere in the world and all these advantages of mobile phones are in addition to the basic tasks of telephony and messaging that a cell phone provides.

The cell phones that are manufactured today are as capable as your PC and this is in fact a device that substitutes your PC when you are on the move. The range of activities that you can perform is very large, but this also leads to a lot of confusion about the different types of cell phones. When one goes out to buy a phone today, one is flooded with innumerable choices and this makes the decision making process quite difficult. |2|_____. Since there are so many choices available, it is fair to say that there is truly something for everyone in this market today.

Various Types of Mobile Phones

The Smartphone

All the activities mentioned above can now be performed on one single device, and this device has replaced MP3 music players, digital cameras, PDAs and several other devices, and has merged them all together. The smartphone has been around for many years, but the Apple iPhone can be considered to be the true pioneer in this domain.|3|_____. A smartphone is basically a cell phone that does everything well and you can have no complaints with it. You can also connect it to an HDTV through an HDMI port and view high quality content on the TV set and you can also use the GPS on the phone to get accurate navigational details. The best smartphones in the market are as follows: Apple iPhone 4, Samsung Galaxy S, Motorola Atrix, HTC Desire HD.

The Camera Phone

A camera phone is similar to a smartphone in many aspects, but the difference is that the camera on the device is better than most point and shoot digital cameras around. The Nokia N8 is a shining example of the perfect camera phone, since it

has a 12 MP camera with Carl Zeiss optics and a Xenon flash. |4|_____. Regular smartphones have an average camera that gives satisfactory images for regular people, but professionals can use the camera on a camera phone and get extremely clear and crisp pictures. Since the camera lens is better, the size of it will be bigger too. As a result, camera phones are generally bulkier than regular phones, especially at the back of the device.

The MP3/Music Phone

This is one of the types of cell phones that are designed specifically for listening to music and enjoying it immensely. Music phones are generally cheaper than regular phones, and they do not perform half the functions that a full fledged smartphone can. Nevertheless they are great for music lovers because they have specific music control buttons on the face of the device, they have high quality audio output which is optimized even further with the help of high quality earphones, and they also have large storage space so that one can store a greater number of songs and audio files on them. |5|_____.

The Basic Phone

|6|_____. These are basic phones that are strong, durable and give a far greater battery life than a smartphone user can ever imagine. Some believe that features of telephony, an alarm, a calendar and a flashlight are all a phone should have, and all the major manufacturers service this market segment as well. These phones are priced much lower than other phones too, and they are also good backup phones for people who own complex smartphones that do suffer from defects every now and then. Some popular basic phone models are as follows: Samsung Haven, Nokia 6350, Motorola Entice, Sony Ericsson W518a.

Apart from these types of cell phones, you will also need to make a decision about the form factor of the mobile phone that you buy. You can pick one from amongst the following:

- a full touchscreen phone;
- a touchscreen phone with a side-sliding or front-sliding full QWERTY keyboard;
- a phone with a full QWERTY keyboard;
- a clamshell design phone;
- a flip phone;
- a phone with a basic T9 keyboard.

The hardware and the software of the phone is also something that you should take into consideration, as these also make a massive difference. |7|_____. So,

there you have it. Mobile phones are at the peak of their powers today, and the delightful thing is that further improvements are implemented on a regular basis. So, go ahead and pick a good phone for yourself today.

Rahul Thadani, 17th March 2011
(http://www.buzzle.com/articles/types-of-cell-phones.HTML)

3.2. Complete the text with the following sentences

(a) When it comes to picking an OS for your phone you can choose one amongst iOS, Android, Windows Phone 7, Symbian and Palm OS.
(b) There are plenty of choices for people who believe that a phone is supposed to be used only for telephony purposes.
(c) The qualities of the images that are shot with this phone are very impressive.
(d) The proverbial smartphone has taken over our lives, and these are mini computers that we can carry around in our pocket.
(e) The best phones of this type available are as follows: Apple iPhone 4, Sony Ericsson Aino, Motorola Droid X, Samsung Focus, HTC EVO 4G.
(f) Since then, various new models have arisen that have blatantly copied the hardware and the software of the iPhone, and even surpassed it in some cases.
(g) Not only do you have to consider the features of the phone now, you also have to worry about the hardware specifications of the device and the software and the OS that it runs.

4. Discussion

4.1. What do people consider when buying a new mobile phone? Make a list of factors that influence the choice (e.g. *design, price* etc.). Compare your lists and account for the chosen factors.
4.2. Work in small groups. List the factors in order of importance. Agree on three crucial ones.
4.3. Imagine that you are buying a new phone. Comment on the chosen factors from your own perspective (*in terms of design, I personally prefer the phones that ...*). Pay special attention to technical characteristics.

UNIT 30

1. Vocabulary

automaton (*pl*. automata)	автомат, промышленный робот
joint	сустав
actuator	исполнительный механизм
end effector	захватное устройство (робота)
sensor	сенсор
robotic arm	механическая рука-манипулятор
planetary rover	космическая самоходная машина, планетоход
space probe	космический зонд (аппарат для исследования космического пространства)
mobile robot	мобильный робот
artificial intelligence (AI)	искусственный интеллект
Android	андроид, человекоподобный робот
expert system	экспертная система
neural network	нейронная сеть

2. Translate from Russian into English

2.1. Нейронные сети — это одно из направлений исследований в области искусственного интеллекта, основанное на попытках воспроизвести нервную систему человека, а именно, способность нервной системы обучаться и исправлять ошибки, что должно позволить смоделировать, хотя и достаточно грубо, работу человеческого мозга.

2.2. Экспертная система — это интеллектуальная компьютерная программа, в которой используются знания и процедуры логического вывода для решения достаточно трудных задач и требующая для своего решения значительного объема экспертных знаний человека. Таким образом, экспертная система — это компьютерная система, которая эмулирует способности эксперта к принятию решений.

2.3. Исследователи одного из американских университетов изобрели руку-робот, которая, может захватить и переместить предметы, находящиеся от нее на небольшом расстоянии.

2.4. Многие хирурги теперь используют роботов-ассистентов в микрохирургии.

2.5. Как у любого робота, работа робота-пылесоса построена на использовании различных сенсоров.

2.6. Роботы стали неотъемлемой частью жизни человека: они выполняют различные задачи на производстве, помогают в быту, используются в медицине и многих других отраслях.

2.7. Исполнительное устройство промышленного робота выполняет все его двигательные функции.

3. Reading

3.1. Read the text

Pre-reading task

Here is an example of a conversation with a computer (or to be more precise with the combination of a computer and a program). Read the first part and answer the question: which contributions belong to the machine — in upper or lower case? What helped you understand?

GOOD DAY WHAT IS YOUR PROBLEM?
I haven't much of a problem really.
DO YOU THINK YOU ARE UNIQUE?
I think I am unique in some ways.
SOMETIMES YOU THINK YOU AREN'T UNIQUE IN SOME WAYS.
That's true as well, I'm sure.
ARE YOU SURE?
Yes, I am certain.
IS THIS THE FIRST TIME YOU'VE BEEN CERTAIN?
No, I have felt certain of things before now.

ELIZA

The program that generated this conversation is loosely based on a well-known one, developed by Joseph Weizenbaum in the mid-1960s, called ELIZA. ELIZA altered people's view of computers, since it appeared that computer science had breached the defenses of human language. In one version, ELIZA took the role of a nondirective therapist — that is to say, a psychiatrist whose main aim is to help patients determine the direction of the therapy themselves, and to find their own solutions.

After the program has printed its opening phrase "GOOD DAY WHAT IS YOUR PROBLEM?" it operates in a cycle, repeatedly carrying out the following actions:

Get input from the user.
Generate a response.

Print the response.

When the program gets input from the user, it converts all the characters typed by the user into lowercase, and then in printing its response it converts lowercase characters into uppercase ones. So, in showing the internal workings of the ELIZA program, we shall use all lowercase characters. Generally, the program just responds to its most recent input, but occasionally, not on every cycle, it stores the input so that it can reproduce it later prefaced by "EARLIER YOU SAID".

It is the middle part of the cycle — generating an appropriate response — that is interesting. This has the following sequence of actions:

Transform the input to change the 'point of view'.

If there is a pattern that matches the transformed input, then choose one of the responses associated with the pattern. Otherwise choose a general-purpose response.

As the program will often use all or part of the input in constructing a response, it first changes the 'point of view' to that of ELIZA. The method is just to change "you" to "I", "me" to "you", "are" to "am", "myself" to "yourself", and so on. So the sentence "you understand me" would be changed to "I understand you". One problem with this very simple approach is that `you' can be the subject or the object of a sentence (i.e., it may come before or after the verb). Just changing "you" to "I" would result in "I understand you" being changed to "you understand I".

The program, therefore, uses another simple trick to deal with this: if the transformed sentence ends in 'I', then the 'I' is changed to 'me'. This is far from foolproof, for example:

- If I could explain to you I could explain anything to anyone;
- IF YOU COULD EXPLAIN TO I YOU COULD EXPLAIN ANYTHING TO ANYONE.

Further tricks like this would not solve the central problem, which is that ELIZA is not founded on any principled representation of the form and content of English.

With the input in its new form, the program then searches for a keyword on a particular topic, or a suitable pattern to match the transformed input, by means of pattern matching. Pattern matching underlies most of ELIZA's apparent cleverness, and computer languages that have access to a pattern matching mechanism can easily be programmed to emulate ELIZA.

Patterns. A pattern for ELIZA is a list containing a mixture of words and wild cards. Wild cards are elements that can match any series of words, so a pattern is like a partly specified sentence in which some of the words are present and some are still to be filled in. We shall adopt the convention that lists of words and wild cards are enclosed in square brackets, and we will use = or == to denote a wild card in the list. The = (single equals) wild card stands for a single word, and the == (double equals) wild card stands for any number of words (including none at all). The pattern is matched against the list of words inputted by the user (after each occurrence of 'you' has been changed to 'I', etc.), for example:

[you think you are unique in some way] is changed to [I think I am unique in some way] which matches the pattern [== i am ==];

[anyone who wasn't a computer] matches the pattern [== computer ==].

In order to match keywords or phrases in the input ELIZA has a series of such patterns associated with standard responses:

PATTERN	STANDARD RESPONSE
[== want ==]	[beware of addictions]
[== need ==]	[can you do without]
[== mother ==]	[tell me more about your family]
[== sister ==]	[family life is full of tensions]
	[do you like your relatives?]

The program compares the input to each pattern in turn until a match is found. It then produces one of the standard responses. If there is more than one response available, then it picks one at random.

All in all, it is not difficult to program a computer to give it the appearance of understanding English and producing intelligent responses. One simple method is to match a series of words against a pattern and, if the words match, to give a predefined response. This was used in ELIZA, which was celebrated as an early computer program that could hold an extended dialogue with a human being. But its facade crumbles when you ask it a question with a complicated grammatical structure, or one that demands a reasoned or calculated response. What ELIZA lacks is firstly a means of recognizing the grammatical structure of language and secondly a means of converting the user's query into a representation of the un-

derlying knowledge, from which inferences can be drawn. Despite its limitations the ELIZA approach of word pattern matching has some use as a simple means of communicating with a computer through natural language, in circumstances where 'user-friendliness' is more important than precision.

Adapted from "Sharples, Mike et al.", 1991
"Computers and Thought: A Practical Introduction,
to Artificial Intelligence"
MIT Press

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. ELIZA marked a considerable achievement in the development of computer science.
2. ELIZA's cycle consists of 5 stages.
3. Changing the so-called point of view the program can generate grammatically incorrect sentences.
4. By means of replacing 'I' with 'me' ELIZA avoids foolish errors.
5. The key unsolved issue is that ELIZA's algorithm is not based on insightful knowledge of the language.
6. Pattern matching makes ELIZA's responses intelligent.
7. ELIZA's main downside is inability to draw inferences.

4. Discussion

4.1. Look at the following statements and responses and try to work out why ELIZA went wrong:
(a) To err is human;
COULD A MACHINE ERR IS HUMAN?
(b) Who dares wins;
I THINK YOU KNOW THE ANSWER?
(c) No one is more optimistic than myself;
AREN'T YOU BEING A LITTLE NEGATIVE?

(d) Whatever my problems are not one of them gets me down;
CAN YOU ALWAYS EXPECT WHATEVER YOUR PROBLEMS TO BE ONE OF THEM GETS YOU DOWN?

4.2. A more up-to-date version of this program is available online at, for example: http://www.xs4all.nl/~hwiegman/ELIZA.HTM or http://nlp-addiction.com/chatbot/.
Try talking to the program and share your impressions with the class. Did it seem intelligent to you? Give your reasons.

4.3. Think about the ways ELIZA's performance can be improved. Make a list of your suggestions.

4.4. Prepare reports on other applications of robots and AI techniques.

UNIT 31

1. Vocabulary

domotics	домовая информатика
intelligent device	интеллектуальный прибор, устройство
intelligent home	интеллектуальный дом
interface	интерфейс
command initiator	устройство, отдающее команду
command receiver	приемник команд
wired system	проводные системы
wireless system	беспроводные системы
PAN (personal area network)	личная, персональная сеть

2. Translate from Russian into English

2.1. Умный дом, или интеллектуальный дом, — это автоматика, объединяющая различные инженерные системы в квартире или доме.

2.2. В таком доме жить приятно и легко, так как в нем бытовая техника самостоятельно выполняет каждодневные домашние дела, освобождая хозяина от лишних действий и создавая условия для нового уровня жизни.

2.3. Под системами безопасности для дома или квартиры подразумевается комплекс систем состоящих из видеонаблюдения, системы контроля доступа, контроля территории, контроля и предотвращения утечек воды, газа и охранно-пожарной сигнализации.
2.4. С помощью сенсорных панелей, как проводных, так и беспроводных, вы можете управлять всеми системами дома: световыми, системами климат-контроля, видеонаблюдения и др.
2.5. Связать несколько компьютеров вместе, чтобы они образовали единую информационную сеть, бывает необходимо не только в большом доме, но и в квартире, где компьютеров больше, чем один. Сделать это можно классическим проводным способом или же более современным — беспроводным — по Wi-Fi.
2.6. Система пожарной сигнализации является неотъемлемой частью системы обеспечения безопасности современного здания.
2.7. В современных интеллектуальных домах используются следующие виды охранных датчиков: датчики движения, акустические датчики разбития стекла, контактные датчики и вибрационные датчики.
2.8. Цель умного дома — создание единой локальной сети с единым пультом компьютерного управления, которая объединит все системы и приборы.

3. Reading

3.1. Read the text

Smart Buildings Pose Steep Learning Curve

Much of the technology to make buildings smarter and more energy efficient has been around for years, if not decades in some cases. But most owners have turned a cold shoulder to these innovations. In the long-gone days of cheap energy, such extravagance was ignored. But in a period of rising oil prices and tougher global competition, more owners are taking steps to cut operating costs.

Architects now speak of developing intelligent buildings, properties that use technology to operate a range of functions more efficiently. What's more, their efforts are being aided by a new generation of Web based technology.

Now a single system can control air temperature, lighting, and building security. A manager sitting at home can use his personal computer to tell whether the temperature is too cold on the fifth floor of an office building. Using the same system, a security guard stationed 1,000 miles away can detect an intruder who has broken into an office building.

While the new technology is stirring conversations among developers, few buildings have adopted the latest systems. "Only a small number of intelligent buildings are going up in the U.S.", says Jim Young, CEO of Realcomm, a San Diego-based operator of trade shows that focus on technology for the real estate industry.

But simple economics should increasingly drive the development of smart buildings. Young believes that rising oil prices and economic pressures will force more developers and tenants to focus on intelligent design. "We are still in the early stages of introducing new technology", says Young. "But ideas are starting to percolate. In the next two years, we will see more progress than has occurred in the past 20 years".

High Cost of Intelligence

"A big barrier to the introduction of technology is price", says Paul Quinn, chief information officer of Duke Realty, an Indianapolis-based REIT. "Many tenants are not willing to spend extra for something new", says Quinn. Many office leases are structured so that landlords can pass utilities expenses on to the tenants. In other instances, tenants are given a fixed amount of money to help defray the costs of renovating a space, commonly referred to as tenant improvements.

While the tenants can use the cash to make the space smarter, many prefer using the money to install walls or other conventional features. Finally, the greater initial costs could result in higher rents, something that no tenant welcomes.

Tax Relief is a Motivator

In some instances, developers can qualify for government subsidies, which can help to reduce costs sharply. In 2004, Macerich Co., a mall REIT based in Santa Monica, Calif., conducted a major renovation of its Queens Center Mall. The 1.2 million sq. ft. shopping center is located on Queens Boulevard in New York. The company poured $600,000 into refurbishing the central plant that provides heating and air conditioning.

"We got most of the money back because of tax rebates from New York state", says Jeffrey Bedell, vice president of operations for Macerich, which owns 77 malls. "Aside from the tax incentives, we achieved energy savings of about $300,000 annually".

Fewer Managers

Wireless technology can simplify a variety of tasks and cut personnel costs. Sensors can activate lawn sprinklers when the soil is too dry. In bathrooms, paper towel holders and soap dispensers can be connected wirelessly to the building's network. When soap runs out, an e-mail can automatically alert the maintenance department.

Smart features can also cut the costs of monitoring fire safety equipment. Suppose an office building has 100 fire extinguishers. In the traditional approach, a guard would check each extinguisher once a month, verifying that the equipment was functioning. But with a computerized system, the extinguishers can be monitored remotely. When a valve indicates the pressure level has fallen, maintenance will be notified.

"With the right technology, you can have one operations center monitor 80 buildings", says Young of Realcomm. "That can allow you to lay off 200 facility managers".

For the time being, only a few building owners are seeking to save energy by installing such automatic systems. But eventually the market will demand intelligent buildings, says Bowles of CoreNet Global. "It may not make sense to own an old-fashioned building five or ten years down the road", he says. "Increasingly, buildings will need intelligent features in order to be marketable".

Stan Luxenberg
1st November 2007
(http://nreionline.com/technology/smart_buildings/)

3.2. Comprehension tasks

3.2.1. Answer the following questions combining all the information from the text

1. Does everyone welcome smart technologies in building? Why or why not?
2. What capabilities of intelligent buildings are mentioned in the article?
3. What are the advantages of adopting smart building technologies?

4. Discussion

4.1. Describe a home you would like to live in. What functions would you like to see automated?

4.2. At the moment smart home technologies are expensive. Are there any features that you consider worth paying for? Account for your choice.

4.3. Do intelligent homes have any downsides? What are they?

UNIT 32

1. Vocabulary

nanotechnology	нанотехнологии
nanobot	наноробот
nanocomputer	нанокомпьютер
quantum computer	квантовый компьютер (компьютер, в котором предлагается использовать квантово-механическую природу частиц для обработки информации, что обеспечивает беспрецедентный параллелизм вычислений)
quantum bit, qbit	квантовый бит, кубит (единица хранения информации в квантовом компьютере)
DNA computer	ДНК-компьютер (компьютер, в котором информация хранится в молекулах ДНК)
DNA biochip	биочип ДНК (организованное размещение молекул ДНК на специальном носителе для обработки огромных массивов информации)
embed	встраивать, внедрять
wearable computer	миниатюрный компьютер, встроенный в одежду или украшения («носимый компьютер»)
user interface	пользовательский интерфейс

gesture interface	жестовый интерфейс
FRID (radio-frequency identification)	технология радиочастотной идентификации
immersive internet	иммерсивный Интернет (с эффектом погружения в виртуальную реальность)
intelligent robot	разумный робот
MIPS (millions of commands per second)	миллионов команд в секунду

2. Translate from Russian into English

2.1. Нанороботы — это гипотетические устройства размером в десятки нанометров, которые могут самостоятельно манипулировать отдельными атомами.

2.2. Американские ученые сделали прорыв в области нанотехнологий — они готовы создать управляемую машину со встроенными синтетическими молекулами ДНК.

2.3. Нанокомпьютер способен обрабатывать за одно действие 4 в 16-й степени бит информации, при том что современные компьютеры могут обрабатывать за один раз не более одного бита.

2.4. Нанокомпьютер — это квантовый компьютер или компьютер с размерами логических элементов порядка нескольких нанометров, обладающий чрезвычайно высокой производительностью.

2.5. «Носимые компьютеры» относятся к классу техники, носимой на себе либо встроенной в одежду или аксессуары; таким образом, техника переходит из разряда переносной или портативной в разряд постоянно носимой.

2.6. RFID-идентификация — бесконтактная идентификация объектов, в которой радиосигнал считывает или записывает данные, хранящиеся в транспондерах, или RFID-метках.
2.7. Для реализации нового типа интерфейса — жестового — к рукам человека прикрепляют несколько датчиков. Эти электроды считывают активность с определенных мышц рук и пальцев, а также отслеживают их положение в пространстве. Специальное программное обеспечение обрабатывает всю эту информацию и передает команды компьютеру.
2.8. Пока система жестового интерфейса умеет понимать только сравнительно медленные и простые жесты. Их необходимо повторить — медленно и четко — несколько раз, для того чтобы система запомнила их и связала с соответствующими командами интерфейса.
2.9. Применение биочипов позволяет оперативно выявлять бактерии и вирусы, выяснять индивидуальные генетические особенности пациента.

3. Reading

3.1. Read the text and arrange the passages in the correct order. Write the corresponding number in the box provided. The first one is given

My High-tech Life in 2032

A dozen cameras and motion- and laser-guided distance sensors manage traffic and road signs, and GPS 2.0 does the navigating.

It's the year 2032, and I just received a gentle nudge from Galt, our telepresence android robot (and hear my wife's voice piping through it — I wish she wouldn't keep doing that). Roughly 5 feet tall and with the strength of a preteen, Galt has limited autonomy. It can navigate my home on a Segway-balanced body and use its telescoping arms to choose matching clothes for me to wear each day. Its vision system picks up infrared fabric codes on the backs of my pants and shirts to ensure a proper match-perfect for color-blind people like myself.

Galt has been programmed to know my morning routine, so it takes the OLED sheet ITV, an 8-by-10-foot, 3-millimeter-thick flexible screen that uses millions of organic light-emitting diodes, and quickly attaches it to the bedroom

wall so I can watch ITV while I get dressed. Small eyelet hooks are on the walls of each room where I use the screen. I watch my favorite online morning shows in ultra-wideband high-def and start channel surfing by filling the entire screen with 48 different mini screens. In the upper left-hand corner, I note the tenth annual bionic arm-wrestling championship. The competitors use their natural-looking yet incredibly powerful robotic arms. It's amazing how many tournaments used to end in a draw before wrestlers started overclocking their arms. Ouch! That guy just blew an actuator.

My Total Lifecam

The day flies by and before I leave, I grab my iPod Roll off the charge desk. My portable gadgets have been resting on it all day, sucking power right through the veneered top. I forgot to put the iPod Roll within range of my PC, so now I shift it over about a foot and it syncs up, grabbing four HD ITV shows and some new music from KROC, the superstar singing duo comprising Rocco Ritchie (Madonna's son) and Kori Federline (Britney's stepdaughter). They're actually quite good. I think I'll stream their new song to my Facebook page and add another blog post about the future of computing. I've been thinking a lot lately about what the next 25 years will look like.

My Most Unusual Commute

Shaved and fully dressed, I grab my briefcase and head for the door. I'm halfway to my Toyota AquaPrius when my wife calls me back. "You forgot something!" She hands me my trifold PC, which I quickly slip into my jacket pocket. Finally settled into the car, I have just decided to take a rare manual drive to the office when my chest starts vibrating-indicating an incoming call from the PC phone in my breast pocket.

I set the car to autopilot and begin cruising out of the driveway. Magnetic/electric guide wires embedded in the road keep my car on track. A dozen cameras and motion- and laser-guided distance sensors manage traffic and road signs, and GPS 2.0 does the navigating. A tap on the tiny Bluetooth receiver in my ear connects my PC phone. My boss needs third-quarter projection numbers now, so I pull out the trifold PC, fold down the sides, and pull the screen out from the base. EV-DO Revolution-Z securely connects me to my office network, and soon I'm working in Moho, Microsoft's Web based spreadsheet app. The smartest thing Microsoft ever did was buying the Zoho online suite in 2012. I like how smoothly it runs on the Google OS.

My Totally Biodegradable Gadgets

Ed from IT drops by with a new phone for me. It looks a bit like a pen but snaps apart into an earpiece and a section I can put in my pocket. There's no keypad; instead I "dial" it by tapping out mini codes. I program it to call my wife on two short taps. A tap, brush against the surface, and two more taps put through a call to my best friend. I take the new phone and drop my old one into the desktop grinder. All my gadgets are now totally biodegradable, so I expect it'll end up fertilizing someone's garden.

Just as I'm about to start transcribing that interview with Rory Gates (Bill's 33-year-old son and the CEO of Microsoft), I notice a red glow coming from my left arm. It's my RF chip. Red means my son, Daniel, is in the building and probably coming up for a surprise visit. He works in Broadway's VR Theater, playing 15 separate virtual characters on a 360-degree stage. The audience is both local — people who attend the show in person, putting on the VR goggles and Bose noise-canceling headsets — and global. I've seen 26 of his performances from the comfort of my desk. He's very good.

I'm halfway through August projections when an instant message pops up. I pull out the flexible screen addition from the side of my 8-by-10-inch roll-out screen, which gives me a 2-by-2-inch extra bit of screen real estate, and dock the message window there. It's my buddy John, asking me how I'm feeling. Yesterday I had a little medical procedure: 16 computer-guided nanobots scrubbed their way through my 65-percent-occluded arteries. (I only passed the final ones this morning-that was a bit uncomfortable.) I tell John I'm feeling fine and log off.

This Acer/Gateway/Lenovo (they merged in 2017) ThinkFold is running a bit slow today. It's not the memory; I have about 128 GB of available RAM and the 2-terabyte, solid-state drive has more than enough room. Perhaps it's the remastered 1977 miniseries Roots I'm downloading in the background? I pause the download and the ultralight system speeds up.

I make an appointment to see Intel's latest CPU innovation. A few years ago, Intel partnered with HP to create the first printable CPU. Now they're printing out entire circuit boards. It should be a fascinating meeting

Daniel's visit is nicely timed, since an e-mail is just arriving from my daughter, Sophie. She's dumping her latest boyfriend. On my 180-degree, 3,048-by-1,028-pixel, curved ViewSonic screen is an alive mail, with a video of her and Brad walking on the beach. While we watch, Sophie uses Liquid Resize to remove Brad and seamlessly stitch the beach back together. It's as if he was never there.

But wait, she's not done. She has another clip of her dog on the beach and, as Dan and I watch, she's added Scruffy to the shot so it looks as if he's walking alongside her. Nice.

Dan heads out, but before I can get back to work, another interruption: My wife's calling with the news that our new HP system arrived this morning. It's an all-in-one with a sleek, ultrathin-though bright-21-inch screen. The motherboard and 2-inch optical HD drive are in the base. I ask her if she needs help setting it up. "No, it's already running", she says. "This is so much easier than my old computer". I ask her how she likes Macintosh OS Ultimate. "It's great! I put my Epson photo printer, digitizing tablet, and Canon all-in-one printer within a couple of feet of it, and it instantly recognized everything and set it up for me".

Lance Ulanoff
1st January 2008
(http://www.pcmag.com/article2/0,2817,2243716,00.asp)

4. Discussion

4.1. Make a list of innovations that the author of the article describes.
4.2. Are these innovations likely or unlikely to appear? Prove your opinion by giving examples of gadgets, their features or research that can bring about these innovations.
4.3. Which of the mentioned innovations would you like to see in everyday life? Why?
4.4. The article was published in 2008, so it presents the vision of the future characteristic of that time. Has anything changed due to the development of technology since that time? How?
4.5. Read the quote below about predicting the future. Do you agree with it? Support your point of view with arguments and examples.
4.6. *"Giving up the illusion that you can predict the future is a very liberating moment. All you can do is give yourself the capacity to respond... the creation of that capacity is the purpose of strategy"* (Lord John Browne, Chairman of BP).

Unit 33

1. Vocabulary

non volatile	энергонезависимый, не изменчивый
unformatted	неформатированный
transmission	передача
interconnected	связанный, взаимосвязанный
Intranet	интранет
Extranet	экстранет
teleconferencing	организация телеконференций
supersite	суперсайт
semiconductor	полупроводник
microbrowser	микробраузер
reboot	перезагружать
encrypt	зашифровывать
update	обновлять базу, модернизировать
upgrade	обновлять (программное обеспечение)
upload	загружать
crypt	расшифровывать

decompres	распаковывать
debug	отлаживать
defragment	дефрагментировать
uninstall	удалить, деинсталлировать
e-learning	электронное обучение
e-zine	электронный журнал
e-commerce	электронная коммерция
cyberspace	киберпространство
cyberslacking	кибервремяпровождение

2. Translate from Russian into English

2.1. Энергонезависимая память способна сохранять контент, даже если питание компьютера выключено.
2.2. Передача данных может быть как беспроводной, так и с использованием проводов.
2.3. Интранет — это сеть компьютеров внутри организации или компании.
2.4. Организация телеконференций позволяет пользователям в разных частях света видеть друг друга и говорить.
2.5. Микробраузер предназначен для показа веб-страниц на мобильных устройствах и PDAs.
2.6. Когда вы перезагружаете компьютер, вы снова включаете его.
2.7. Когда вы загружаете данные, вы переносите их со своего компьютера на другой компьютер/устройство или в сеть.
2.8. Зашифровывать означает перевести данные в секретные коды.
2.9. Расшифровывать означает перевести зашифрованные данные обратно в первоначальную форму.

2.10. Отлаживать программу означает искать в ней ошибки и исправлять их.
2.11. Если вы удаляете программу со своего компьютера, вы ее деинсталлируете.
2.12. Термины «электронное обучение» и «электронная коммерция» подразумевают использование Интернета и ИКТ в обучении и коммерции.
2.13. Электронный журнал — это газета или журнал, опубликованный в сети.
2.14. Киберпространство — это электронная среда, в которой происходит общение в сети.

3. Reading

3.1. Read the text

***

A report by the Consumer Electronics Association (CEA) says electronics are among the most popular gifts being bought this holiday season. It also predicts that spending on these devices will set new records.

It is said that consumers will spend an average of about two hundred thirty dollars on electronics. This is five percent more than last year and the highest level since the organization (CEA) began keeping records of holiday spending.

Jim Barry is a spokesman for the Consumer Electronics Association. He says the CEA study found that electronics represent three of the top five things on its "holiday gift wish list" this year.

He says: "Notebook computers are at the top, followed by iPads and then e-readers. IPad is a touch-screen tablet computer and that's really the big player in that category".

The computer company Apple began selling its small, touch-screen computers in April. The company reported that it had sold more than three million iPads by the end of July. Its latest earnings report shows sales of more than four million iPads during the last three months of this year.

People use the touch-screen computers to surf the Web, write e-mails, watch movies and read books. Since the iPad's release earlier this year, several other companies have come out with their own tablet computers just in time for Christmas.

A report from the e-marketer research group predicts that worldwide, tablet sales will reach more than eighty-one million in two thousand twelve. Still, Jim Barry says these devices are facing tough competition this year from another Christmas favorite.

JIM BARRY: "Another hot category right behind that are the e-readers. So you can read on an iPad or a touch-screen tablet, but the e-book readers are less expensive. The Kindle is the market leader there, from Amazon. But you also have the Nook from Barnes and Noble and the e-reader from Sony. And you have more and more of those e-readers coming into the market as well".

He also says modern technology is changing the way people relate and increasing their expectations for their electronic devices.

JIM BARRY: "The buzz phrase in the industry is 'content anywhere'. And it's really the ability to take your information and entertainment with you just about anywhere to stay connected to your work and your family. And that's what all of these devices do".

The Consumer Electronics Association report found that iPod music players are also in high demand this holiday season. So are video game systems and digital cameras.

But not all of the things on the holiday gift wish list involved electronics. Clothes, cars and motorcycles also made the list. So did family togetherness and good health. And the one thing that people wanted most?

JIM BARRY: "At the top of the list was peace and happiness".

June Simms and Steve Ember
Adapted from the "VOA Special English Technology Report",
27th December 2010

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. According to CEA an average amount of money spent on electronics is expected to reach the top on record.
2. Electronics account for two out of five most popular holiday gifts.
3. E-readers are the second item on the top five list.
4. The price of e-readers makes them keep coming into the market.

3.2.2. Using the information in the article, complete these statements

1. What does “another Christmas favourite” refer to?
   (a) tablet computer;
   (b) e-reader;
   (c) iPad.
2. Several other companies released their own tablet computers because:
   (a) they are versatile;
   (b) they want to offer another favourite gift;
   (c) competition forces them to do so.
3. The most wanted thing that people wish to have is:
   (a) good health;
   (b) togetherness;
   (c) peace and happiness.

4. Discussion

4.1. Discuss advantages and disadvantages of e-readers.
4.2. Discuss advantages and disadvantages of iPads.
4.3. Why do you think these devices will/will not grow in popularity?
4.4. How can iPads be used in education and e-learning?
4.5. What improvements can make tablets more widespread and popular?

UNIT 34

1. Vocabulary

manufacture	производитель
software engineer	инженер программного обеспечения
animator	аниматор
computer consultant	компьютерный консультант
computer technician	компьютерный техник
typist	машинистка
freeware	свободно распространяемое программное обеспечение
shareware	условно-бесплатное программное обеспечение
spyware	шпионская программа
adware	рекламная программа
groupware	групповая программа

2. Translate from Russian into English

2.1. Intel и AMD являются всемирно известными производителями чипов.
2.2. Инженер программного обеспечения отвечает за создание и работу компьютерных программ.
2.3. Аниматор принимает участие в создании фильмов, используя средства анимации.
2.4. Нью-йоркская компьютерная компания ищет компьютерного консультанта для работы в области компьютерной безопасности.
2.5. Компьютерный техник отвечает за обновление и правильное функционирование программного обеспечения.
2.6. Работа машинистки требует внимательности и может привести к проблемам с руками и суставами.
2.7. Свободно распространяемое программное обеспечение охраняется авторским правом, однако оно может быть бесплатно загружено из Интернета.
2.8. Условно-бесплатное программное обеспечение может быть бесплатно загружено из Интернета, но на определенный период — до принятия решения о его покупке.
2.9. Шпионская программа следит за действиями пользователя компьютера и предназначена для передачи этой информации.
2.10. Рекламная программа служит для распространения рекламы и может содержать шпионские программы.
2.11. Групповая программа позволяет группам пользователей совместно работать над проектом в сети.

3. Reading

3.1. Read the text

Internet Computer Information System and its Progress and Problems, VOA Special English

The United Nations organized the World Summit on the Information Society to discuss Internet growth in developing nations. But the three-day meetings held in Tunisia also looked at the issue of struggle over who controls the Internet.

It is known that the Internet grew out of research paid for by the United States Defense Department in the nineteen sixties and seventies. As a result, the United States government still has some control over it. In nineteen ninety-eight, the Commerce Department set up a non-profit organization to supervise the domain name system of the Internet's World Wide Web. ICANN stands for the Corporation for Assigned Names and Numbers.

For example, thanks to ICANN, a person in Cuba will see the same Web site as someone in Belarus. ICANN also has some Internet policy powers. It can remove Web sites from the Internet. It also decides who can sell and list domain names.

The European Union, China, Brazil, India and other countries want the United States to release at least some control over the World Wide Web. They believe that the Internet is an international resource that should be supervised by the United Nations or some other independent organization. The US Administration disagrees. It says that ICANN is the best way to guarantee an open, secure and dependable online environment. Heavy governmental controls would suppress Internet growth and development.

Governments, businesses and organizations also want to discuss public policy issues, including Internet crime, junk mail and viruses. Most Internet communication is business-to-business as buying and selling goods and services over the Internet is growing around the world. However, there are risks involved with this e-commerce.

For example, it was estimated that more than fifty-two thousand million dollars in goods and services were purchased a year through identity theft. Identity thieves steal personal information from Americans. They collect Social Security numbers, banking records and telephone numbers. They use this information to request loans, or to get credit cards in the name of the victim.

Identity thieves often use computer viruses to collect a victim's personal information. They may also use spyware. These are programs that are loaded onto a computer without the owner's knowledge. Spyware follows the computer user's online activities. Identity thieves also use another method called Internet "phishing". These e-mail messages attempt to collect an Internet user's personal information, such as credit card numbers, by acting like a real business.

Advertisers interested in selling products over the Internet may use adware to identify possible buyers. Adware is a software program sent with free files or programs to a computer. Once loaded onto a computer, adware can collect information about a person's interests. Adware can use this information to provide targeted sales messages to the computer user.

Google has also started its own project. The company has put thousands of library books and documents on the Internet. Google gave three million dollars to help the United States Library of Congress create a World Digital Library on the Web. This will be a collection of rare books, documents, maps and other materials from America's library and other national libraries. The head of the Library of Congress says people will be able to learn about other cultures without traveling farther than the nearest computer.

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. The World Summit on the Information Society in Tunisia discussed problems associated with the spread of the Internet in developing countries.
2. The United States Defense Department and the United States government still have some control over the Internet.
3. The US Administration agrees on delegating control over the Internet to the United Nations.
4. Identity thieves mostly use spyware to collect information about user's personal data.

3.2.2. Using the information in the article, complete these statements

1. It is likely that advertisers selling products over the Internet use adware to
   (a) identify possible buyers;
   (b) collect information about a person's interests;
   (c) provide targeted sales messages to the computer user;
   (d) all points (a—c).
2. A World Digital Library on the Web is designed to enable people to
   (a) access to the collection of rare books from national libraries;
   (b) learn about other cultures;
   (c) access maps and other materials from America's library;
   (d) access to the Library of Congress.

4. Discussion

4.1. Discuss advantages and disadvantages of control over the Internet.
4.2. Do you think some control over the World Wide Web should be given to the UN or another independent organization?
4.3. How can computer users protect themselves from adware and spyware?
4.4. Why is it important to have access to a World Digital Library on the Web?

UNIT 35

1. Vocabulary

silicon chip	кремниевый чип
search engine	поисковая система
web portal	веб-портал
control panel	пульт управления
self-test	самопроверка
clipboard	буфер обмена
address bus	шина адресов
bandwidth	пропускная способность
mail merge	составление стандартных писем
broadband	широкополосная сеть
shortcut	быстрый вызов
smart card	смарт-карта
scrollbar	прокрутка
recording head	записывающая головка
add-on	дополнения
set-up/setup	установка

menu-driven	управляемый с помощью меню
voice-activated	активизированный голосом
object-oriented	объектно ориентированный
space-saving	компактный
hands-free	устройство, позволяющее оставить руки свободными
stand-alone	автономный

2. Translate from Russian into English

2.1. Поисковая система — это программа поиска информации в сети.
2.2. Веб-портал представляет собой сайт, который предлагает обширную информацию и ссылки на другие сайты.
2.3. Панель управления представляет собой утилиту управления конфигурацией и основными функциями системы.
2.4. Самопроверка используется для автоматического тестирования прибора.
2.5. Буфер — это область для временного хранения информации в компьютере.
2.6. Шина адресов осуществляет поиск адресов и их локализацию на компьютере.
2.7. Пропускная способность представляет собой количество информации, которую можно послать между компьютерами через телефонный провод.
2.8. Составление стандартных писем подразумевает использование компьютера для написания писем разным адресатам по списку.
2.9. Широкополосная сеть позволяет большому количеству информации или сообщений быть посланными быстро и одновременно между компьютерами или другими электронными устройствами.
2.10. Ярлык является файлом малого размера, который позволяет быстро начать использовать компьютерную программу.

3. Reading

3.1. Read the text

latest ICT Facts and Figures by End of 2010

Since two thousand five, the number of Internet users worldwide has doubled to more than one and a half billion people. At least two billion are expected to be online by the end of 2010. It is expected that more than seventy percent of new Internet users will be in developing countries. Still, only twenty-one percent of the population of the developing world is online — compared to seventy-one percent in developed countries.

There are still very huge divides when it comes to accessing the Internet, especially high-speed and high bandwidth Internet. In developing countries, you have only one out of five people using the Internet. If we look at certain regions like in Africa, for example, the figures are even lower. In Africa we have not even ten percent of the population using the Internet.

Less than sixteen percent of homes in developing countries are wired for the Internet. But, on the other hand, mobile phone usage has reached sixty-eight percent in developing countries. The world has almost seven billion people now. Nine out of ten have access to mobile networks. More and more people in developing countries are using their mobile phones to connect to the Internet.

The fact is that it's rather difficult to put in places the cable infrastructure and the fiber infrastructure and therefore the mobile networks really offer a great opportunity for people in developing countries to connect to the Internet over the wireless networks.

Mobile technology is already improving lives in developing countries. For example, banking by phone, e-health services and farm reports by text messaging are becoming increasingly popular. And the possibilities will only grow as broadband or high-speed connections become more widely available. The broadband is even called now "the next truly transformational world technology".

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. By the end of 2010 the number of Internet users worldwide is expected to be at least two billion people.
2. The greatest difference between developed and developing countries concerns bandwidth and high speed Internet.
3. Wired Internet connection is the most likely way of Internet access in Africa and other developing countries.
4. Mobile technologies are already widespread in developing countries and will improve lives of people in future.

3.2.2. Using the information in the article, complete these statements

1. It is likely that developing countries will use extensive:
   (b) wireless networks;
   (c) cable infrastructure;
   (d) fiber infrastructure.
2. Lives of people in developing countries will continue improving via their using:
   (a) online banking and health services;
   (b) text messaging and farm reporting;
   (c) mobile technologies.
3. In future possibilities of people will grow as:
   (a) they will be more aware of computer technologies;
   (b) they will continue using wireless networks;
   (c) broadband or high-speed connections will become more widely available.

4. Discussion

4.1. Discuss advantages and disadvantages of wireless and wired Internet connection.
4.2. In what way(s) do you think governments of developed countries can help developing countries to improve the situation with Internet connection.
4.3. How can mobile technologies improve lives of people in developing countries?
4.4. Why is it important to make access to the Internet available to as many people as possible?

UNIT 36

1. Vocabulary

browse your favourite sites	просматривать любимые сайты
broadband access	широкополосный доступ
to tune in to the Internet radio	настроиться на интернет-радио
to play videos and music	воспроизводить видео и музыку
optical disk	оптический диск
to read and write data	читать и записывать данные
high-definition television (HDTV)	телевидение высокой четкости
backward compatible	совместимый с предыдущими версиями
to go online	выходить в Интернет
to connect to the Internet	подключиться к Интернету
to transmit data	передавать данные
to install the software	установить программное обеспечение
to access the web	получить доступ к сети
to send and receive e-mails	посылать и получать электронные письма

to burn CDs	записывать компакт-диски
to log onto your account	войти в свой абонемент (аккаунт)
to plug into the computer	подключать к компьютеру
hacking into other people's computers	взлом компьютеров других людей
high-speed networks	высокоскоростные сети
outgoing mail	исходящая электронная почта
incoming mail	входящая электронная почта
instant messaging	обмен мгновенными сообщениями
electronic commerce	электронная торговля
wireless hotspots	беспроводные точки доступа
virtual environment	виртуальная среда
interactive TV	интерактивное телевидение
highly sensitive information	конфиденциальная информация
freely available	в свободном доступе
plug and play	подключись и работай (принцип и спецификация быстрого подключения к компьютеру дополнительного оборудования и самоконфигурирования системы, поддерживаемая современными BIOS, ОС и аппаратными средствами)
drag and drop	перетаскивание (технология работы с экранными объектами в Windows с помощью мыши)

2. Translate from Russian into English

2.1. Использование широкополосного доступа обеспечивает быструю и надежную интернет-связь.
2.2. Вы можете настроиться на интернет-радио, чтобы слушать свой любимый канал.
2.3. Оптический диск дает возможность сохранять гораздо больший объем информации, чем другие диски.
2.4. HRTV — это новый тип телевидения, который обеспечивает более высокую четкость изображения по сравнению с другими видами телевидения.
2.5. Когда вы устанавливаете программное обеспечение, вы загружаете его на ваш компьютер.
2.6. Чтобы зарегистрироваться на своем абонементе в сети, необходимо ввести логин и пароль.
2.7. Он подключил микрофон к компьютеру, чтобы начать запись.
2.8. Взлом компьютеров и систем считается серьезным преступлением.
2.9. Фирма начала работать более эффективно, как только получила доступ к быстродействующим сетям.
2.10. Для любой компании очень важно создавать резервные копии входящей и исходящей электронной почты.
2.11. Обмен мгновенными сообщениями — популярный интернет-сервис, который позволяет быстро обмениваться письменными сообщениями.
2.12. В некоторых общественных местах, таких как железнодорожные станции, аэропорты и т.п., люди могут получить доступ к Интернету на беспроводных горячих точках.
2.13. Виртуальная среда создается на компьютере и может восприниматься пользователем как реальная.
2.14. Не рекомендуется публиковать конфиденциальную информацию в социальных сетях или посылать ее по электронной почте.
2.15. Некоторые фильмы, программы и сервисы сейчас в свободном доступе в Интернете.

3. Reading

3.1. Read the text

Plans for Broadband across the US

A newly released proposal calls for almost everyone in the United States to have high-speed Internet service at home within ten years. The Federal Communications Commission (F.C.C.) sent its National Broadband Plan to Congress.

The F.C.C. wants one hundred million homes to have inexpensive Internet service at ten times current speeds. Another goal for twenty twenty is to have the fastest and most extensive wireless network of any nation.

The United States invented the Internet. Yet a recent study placed it sixteenth in broadband access. F.C.C. Chairman Julius Genachowski says the service available is slow and costly compared with other developed countries.

Currently, about two-thirds of Americans have broadband at home. But almost one hundred million do not. The government says fourteen million of them cannot get broadband even if they wanted it.

The United States built a national highway system to expand transportation. Now President Obama says a similar effort is needed to expand broadband networks.

His administration says expanding access is an economic development issue. Fast connections, it says, are important to business and job creation, and to other areas like education and health care. The government proposes to spend up to sixteen billion dollars on a wireless network for public safety agencies.

Most Americans get broadband service through their cable television provider or telephone company. There are rules for companies that supply utilities like electricity and water to let competitors use their wires or pipes. But some experts point out the lack of such “open access” rules for telephone and cable companies. This is unlike some other countries with better broadband access.

Expanding service to some areas of the country will require wireless transmission. But there is a limited amount of radio frequency spectrum available.

To help pay for the plan, the F.C.C. wants to sell five hundred megahertz of spectrum. But it says the plan will require ten times more unused spectrum than it can now offer. TV stations are worried that they will be forced to give up some of their frequencies.

Some members of Congress have questioned the costs of the F.C.C. plan and how it may affect competition. At the same time, a court case has raised questions about the agency's legal powers to regulate broadband service.

Mario Ritter
Adapted from the "VOA Special English Economics Report",
10th March 2010

3.2. Comprehension tasks

3.2.1. Answer the following questions

1. Government will aim at:
   (a) providing people with inexpensive Internet services;
   (b) increasing current speed ten times;
   (c) both a&b.

3.2.2. Match the following statements as True or False

1. It is the F.C.C. plan to make the US wireless network the world largest and fastest within ten years.
2. Although the Internet was invented in the US, its current rating in broadband access. is not high.
3. Other developed countries provide slower Internet service and less competitive prices.
4. A national highway system is mentioned in the text to compare the effect it made on national economy with that of expanding broadband networks.

3.2.3. Using the information in the article, complete these statements

1. Wireless transmission is necessary because it will:
   (a) expand service to some areas of the country;
   (b) be important to business and job creation;
   (c) be important to the areas like education and health care.

2. In order to pay for the plan the F.C.C. wants to:
   (a) force some TV stations to give up some frequencies;
   (b) sell five hundred megahertz of spectrum;
   (c) require ten times more unused spectrum.

4. Discussion

4.1. Discuss advantages of broadband and high speed Internet for the national economy of the country.
4.2. Discuss what high speed Internet can offer to businesses, education, health services etc.
4.3. Why do you think the US rank in broadband access is lower than that of other developed countries?
4.4. What are some potential problems the developers of broadband access in the US will face?
4.5. What are some solutions to the problems in 4.4?

UNIT 37

1. Translate from Russian into English

1.1. Накопитель можно рассматривать как совокупность носителя и привода.
1.2. По способу записи и чтения информации на накопителе дисковые накопители делят на магнитные, оптические и магнитооптические.
1.3. В состав системного программного обеспечения входят операционные системы, среды программирования, утилиты, системы управления файлами и системы управления базами данных.
1.4. Лингвистическое программное обеспечение — компьютерные программы и данные, обеспечивающие анализ, обработку, хранение и поиск аудиоданных, рисунков (OCR) и текстов на естественном языке.
1.5. Весь спектр современных вычислительных систем можно разделить на три больших класса: миникомпьютеры и микрокомпьютеры, мейнфреймы, суперкомпьютеры.
1.6. Архитектура компьютера включает описание пользовательских возможностей программирования, описание системы команд и системы адресации, организации памяти и т.д.
1.7. Конвертация данных — преобразование данных из одного формата в другой обычно с сохранением основного логическо-структурного содержания информации.
1.8. Средства хранения данных, используемые в персональных компьютерах, — это модули оперативной памяти, жесткие диски, дискеты, CD- и DVD-диски, а также устройства флеш-памяти.
1.9. Центральная задача информационного поиска — помочь пользователю удовлетворить его информационную потребность.
1.10. Рунет — русскоязычная часть всемирной сети Интернет.

2. Reading

2.1. Read the text

How Computer Memory Works

Although memory is technically any form of electronic storage, it is used most often to identify fast, temporary forms of storage.

Whether it comes from permanent storage (the hard drive) or input (the keyboard), most data goes in random access memory (RAM) first. The CPU then stores pieces of data it will need to access, often in a cache, and maintains certain special instructions in the register.

From the moment you turn your computer on until the time you shut it down, your CPU is constantly using memory:

- You turn the computer on.
- The computer loads data from read-only memory (ROM) and performs a power-on self-test (POST) to make sure all the major components are functioning properly. As part of this test, the memory controller checks all of the memory addresses with a quick read/write operation to ensure that there are no errors in the memory chips. Read/write means that data is written to a bit and then read from that bit.
- The computer loads the basic input/output system (BIOS) from ROM. The BIOS provides the most basic information about storage devices, boot sequence, security, plug and play (auto device recognition) capability and a few other items.
- The computer loads the operating system (OS) from the hard drive into the system's RAM. Generally, the critical parts of the operating system are maintained in RAM as long as the computer is on. This allows the CPU to have immediate access to the operating system, which enhances the performance and functionality of the overall system.
- When you open an application, it is loaded into RAM.
- After an application is loaded, any files that are opened for use in that application are loaded into RAM.

• When you save a file and close the application, the file is written to the specified storage device, and then it and the application are purged from RAM.

In the list above, every time something is loaded or opened, it is placed into RAM. This simply means that it has been put in the computer's temporary storage area so that the CPU can access that information more easily. The CPU requests the data it needs from RAM, processes it and writes new data back to RAM in a continuous cycle. In most computers, this shuffling of data between the CPU and RAM happens millions of times every second. When an application is closed, it and any accompanying files are usually deleted from RAM to make room for new data. If the changed files are not saved to a permanent storage device before being purged, they are lost.

Fast, powerful CPUs need quick and easy access to large amounts of data in order to maximize their performance. Modern CPUs running at speeds of about 1 gigahertz can consume massive amounts of data — potentially billions of bytes per second. The problem that computer designers face is that memory that can keep up with a 1-gigahertz CPU is extremely expensive — much more expensive than anyone can afford in large quantities.

Computer designers have solved the cost problem by using expensive memory in small quantities and then backing it up with larger quantities of less expensive memory.

The cheapest form of read/write memory in wide use today is the hard disk. Hard disks provide large quantities of inexpensive, permanent storage.

The next level of the hierarchy is RAM. The bit size of a CPU tells you how many bytes of information it can access from RAM at the same time. For example, a 16-bit CPU can process 2 bytes at a time (1 byte = 8 bits, so 16 bits = 2 bytes), and a 64-bit CPU can process 8 bytes at a time. A computer's system RAM alone is not fast enough to match the speed of the CPU. That is why you need a cache.

Caches are designed to make the data used most often by the CPU instantly available. This is accomplished by building a small amount of memory, known as primary or level 1 cache, right into the CPU. Level 1 cache is very small, normally ranging between 2 kilobytes (KB) and 64 KB. The secondary or level 2 cache typically resides on a memory card located near the CPU. The level 2 cache has a direct connection to the CPU. In most systems, data needed by the CPU is accessed from the cache approximately 95 percent of the time, greatly reducing the overhead needed when the CPU has to wait for data from the main memory.

Memory can be split into two main categories: volatile and nonvolatile. Volatile memory loses any data as soon as the system is turned off; it requires constant power to remain viable. Most types of RAM fall into this category. Nonvolatile memory does not lose its data when the system or device is turned off. A number of types of memory fall into this category. The most familiar is ROM, but Flash memory storage devices such as CompactFlash or SmartMedia cards are also forms of nonvolatile memory.

References

http://www.howstuffworks.com/computer-memory1.htm

2.2. Comprehension tasks

2.2.1. Match the following statements as True or False

1. Most forms of memory are intended to store data temporarily.
2. When the information is kept in memory, the CPU can access it much more quickly.
3. Some computers also use virtual memory, which expands physical memory onto a hard disk.
4. BIOS is loaded from RAM.
5. RAM is the most common type of memory found in computers and other devices.
6. When an application is closed, it is not purged from RAM.
7. Often, that amount of RAM is not enough to run all of the programs that most users expect to run at once.
8. Level 2 cache is built directly into the processor itself.
9. Cache speeds up computer system.
10. Both types of RAM are volatile, meaning that they lose their contents when the power is turned off.

3. Discussion

3.1. Decide whether there are parts a computer can function without.
3.2. From your viewpoint, which component of the computer is crucially important?
3.3. What is RAM needed for?
3.4. Prepare a talk on storage devices.
3.5. Decide whether the ingenuity of the programmer is of importance or only good skills are required.

UNIT 38

1. Vocabulary

low-end (computer)	недорогой продукт для начинающих
high-end (computer)	мощный, высокопроизводительный, профессиональный, с широкими функциональными возможностями
highly demanding	приложения с высокими требованиями (к памяти, applications вычислительной мощности и т.д.)
fast processor	высокоскоростной процессор
plentiful RAM	большой запас оперативной памяти
spacious disk	вместительный диск
compatible software	совместимое программное обеспечение
expandable system	расширяемая (наращиваемая) система
integrated	интегрированный
separate	отдельный, раздельный
reliable	надежный

2. Translate from Russian into English

2.1. Программная совместимость — это способность компьютерной системы исполнять ПО, написанное для другой системы.
2.2. Аппаратная совместимость предполагает взаимозаменяемость конструктивных блоков, плат и т.д.
2.3. Начинающим пользователям вполне подойдут программные или аппаратные средства, предоставляющие не все возможности, доступные в более дорогих моделях.
2.4. Дорогой, возможно, «навороченный» продукт предназначен, как правило, для профессионалов.
2.5. Для обработки и сохранения информации необходим большой объем оперативной памяти.
2.6. Компьютерная система, в которой предусмотрена возможность увеличения производительности, количества периферийных устройств или объема памяти, называется расширяемой системой.
2.7. Современному пользователю трудно представить собственный компьютер молчаливым. Сегодня практически все системные платы оснащаются встроенным интегрированным звуком.
2.8. Высокоскоростной процессор позволяет пользователям записывать высокоточное видео и вести детальную непрерывную съемку.
2.9. Видеокассеты ушли в прошлое — их заменили CD-, DVD-диски, в будущем нас ожидают еще более качественные форматы и вместительные диски.
2.10. Часто, сдавая сломанный ноутбук в ремонт, клиенты спрашивают, какой ноутбук самый надежный.

3. Reading

3.1. Read the text

How to Choose a Computer System?

Choosing a computer can be difficult. First, you should decide what you are going to use the computer for. Then, you need to mind the configurations and your budget. Last but not the least, you should consider where to buy. We hope the following suggestions will help you make your selections.

Computers are getting really inexpensive these days. Buy the most powerful computer your budget allows.

Computer prices do go down with time. However, that doesn't mean that you should wait forever to use it, to learn from it, and, most of all, enjoy it. Computer is the best investment money can buy now! Why do I say that, knowing that the value of a computer goes down significantly with time? What a computer can help you is limitless.

The most powerful computers these days are for gamers, servers, and rocket scientists. The priority is probably true in that order.

Do not buy a so-called "name-brand" or "major-brand" if upgrading may be on your mind a couple of years down on the road. These brands are specifically designed to hook you on buying only their highly priced components to maximize their 40–60% profit margin. Most "clone" makers are operating only with a 5–25% margin. Go figure where you could save money. Besides, most major PC makers are not really "manufacturers". They are just "box-makers" — putting components together — like everybody else.

Clone or house-brands are often based on open structures, which means easier and cheaper upgrading, using "universal" components. You pretty much can go anywhere to have the computer served, upgraded, or repaired.

Not all clones are equal. Directron.com and its parent company have been distributing the Think-Box branded systems since 1991. We do choose the components carefully with the least failure rates. We offer all our system customers free life-time customer support by e-mail and telephone. Our customer service procedure is easy and fast.

You should consider putting a computer together yourself only if you have some computer knowledge and some spare time. It is not that easy the first time. However, it does get easier once you have started. The satisfaction you get from putting a computer together is difficult to describe with words. Besides, you could sell a few of them and try to become the next Michael Dell. Who knows...

Rule of thumb: It is a better deal to buy a new one instead of upgrading an old one if the old one is more than three years old.

If all you need to do is word processing, spreadsheet, home finance, some basic windows games, e-mails, and browsing the Internet, you are an average user. Nothing really "high end" is needed. Consider a mid-grade computer that includes 350–500 MHz microprocessor, 32 or 64 MB of memory, 8 MB video, 4–8 GB hard drive, 56K Modem, and any sound card. A 15" or larger monitor is recommended.

Servers are a lot more complex than any other computer systems. Normally servers should have as high a CPU speed as possible, preferably Pentium III microprocessor with 512 K cache, a minimum of 128 MB memory and 9.1 GB or higher hard disk drives, often SCSI along with a network adapter. SCSI hard drives are better designed for simultaneous data access and not limited to just four hard drives as their IDE counterpart. Since servers rarely deal with a complex graphics, a 4 or 8 MB video card would do the job, unless it is a Terminal Server. Use a large case with tons of cooling. Don't forget an uninterruptible power supply (UPS) and a tape backup drive to protect your data and investment. Well, the price tag could go up quickly.

Designing a gaming computer is more fun than anything. Currently high-end and hardware-demanding games include QuakeII, QuakeIII, Hexen, StarCraft and Half-Life. These games run well only on intense gaming engines. Go with top of the line processor, such as 500–600 MHz, Pentium III or AMD K6-3. Take a minimum of 128 MB Memory and at least 8.4 GB hard drive. IDE with ultra DMA/ATA66 is OK. The deciding factor is the video card for all the 3D actions. You need the best video card your budge allows! Examples are STB Voodoo3 3500, ATI-128, and Matrox G400 with 16–32 MB video memory. A DVD drive is a must these days. Depending on how the end-user plans to game you might need a network adapter or a modem. PC gaming is a lot of fun, so be sure design a computer that you can enjoy it for a long time. Do get a nice sound card. For game machines, do not even think about systems with integrated components such as video and audio. You will hate it when the next version of your favorite game is released.

If you are choosing a computer for normal office work, only the mid-range computer is necessary. We actually recommend Intel Celeron for workstations. Celeron is quite more inexpensive with less cache than their Pentium cousins but is almost equally powerful. You really do not need that much cache for word processing, spreadsheet, and e-mail. Consider 350–500 MHz, 64 MB, 4–8 GB hard disk drive and 4–8 GB video card.

Dr. Michael

3.2. Comprehension tasks

3.2.1. Match the following statements as True or False

1. It is a good idea of investing into a computer.
2. Considering brands is very important while choosing a computer.
3. Computer clones are always equal.
4. Designing a gaming computer is far from being boring.
5. Celeron is far more expensive than Pentium.

4. Discussion

4.1. How to make the right decision?

- Are you looking for a computer to perform basic tasks or to meet special requirements?
- What top computer brands do you know?
- What are their advantages and disadvantages?
- What possible problems should be considered while buying a computer?
- Technical support from the major manufacturers tends to be a lot better.
- Do you share this opinion? Give your arguments.
- Does the weight of a power supply matter or not?
- Supposing the package you buy doesn't include a wireless LAN, what would you have to buy then to install software to run it.
- Is the price important to you?

UNIT 39

1. Vocabulary

to digitize	преобразовывать в цифровой вид (форму)
to hook up	подключить, подсоединить
to convert	преобразовывать, обращать
to set up	настроить (параметры); установить (программы)

2. Translate from Russian into English

2.1. Главное отличие цифровой передачи данных от телеграфной, телефонной и других видов связи заключается в том, что получателем или отправителем информации является машина, а не человек.
2.2. Протокол IP образует единое адресное пространство в масштабах всего мира.
2.3. Сегодня конвергенция мыслится прежде всего на базе средств пакетной передачи данных, протокола IP, хотя и не ограничивается им.
2.4. Объем голосового трафика, передаваемого по каналам IP-телефонии, растет с каждым днем.
2.5. Этому в немалой степени способствуют те новые технологии в рамках IP, которые нацелены на повышение качества речи, стирание граней между VoIP и традиционной телефонией.
2.6. VoIP-телефония — технология, объединяющая телефонию и Интернет.

2.7. VoIP-телефония — наиболее прогрессивный метод передачи голосовой информации.
2.8. IP-телефония преобразует голос в цифровые сигналы, затем передает через Интернет в нужную точку Земли, а потом транслирует через обычную сеть.
2.9. VoIP-телефония обеспечивает высокое качество связи за счет технологии сжатия голосовых сигналов и оптимального использования емкости телефонных линий.
2.10. Несмотря на большой функциональный потенциал, характерный для сетей с пакетной коммуникацией, в VoIP-сетях сегодня слабо развиты дополнительные услуги и функции.

3. Reading

3.1. Read the text

How VoIP Works

If you've never heard of VoIP, get ready to change the way you think about long-distance phone calls. VoIP, or Voice over Internet Protocol, is a method for taking analog audio signals, like the kind you hear when you talk on the phone, and turning them into digital data that can be transmitted over the Internet.

How is this useful? VoIP can turn a standard Internet connection into a way to place free phone calls. The practical upshot of this is that by using some of the free VoIP software that is available to make Internet phone calls, you're bypassing the phone company (and its charges) entirely.

VoIP is a revolutionary technology that has the potential to completely rework the world's phone systems. VoIP providers like Vonage have already been around for a while and are growing steadily. Major carriers like AT&T are already setting up VoIP calling plans in several markets around the United States, and the FCC is looking seriously at the potential ramifications of VoIP service.

Above all else, VoIP is basically a clever "reinvention of the wheel". In this article, we'll explore the principles behind VoIP, its applications and the potential

of this emerging technology, which will more than likely one day replace the traditional phone system entirely.

The interesting thing about VoIP is that there is not just one way to place a call. There are three different "flavors" of VoIP service in common use today:

• ATA — The simplest and most common way is through the use of a device called an ATA (analog telephone adaptor). The ATA allows you to connect a standard phone to your computer or your Internet connection for use with VoIP. The ATA is an analog-to-digital converter. It takes the analog signal from your traditional phone and converts it into digital data for transmission over the Internet. Providers like Vonage and AT&T Call Vantage are bundling ATAs free with their service. You simply crack the ATA out of the box, plug the cable from your phone that would normally go in the wall socket into the ATA, and you're ready to make VoIP calls. Some ATAs may ship with additional software that is loaded onto the host computer to configure it; but in any case, it's a very straightforward setup.

• IP Phones — These specialized phones look just like normal phones with a handset, cradle and buttons. But instead of having the standard RJ-11 phone connectors, IP phones have an RJ-45 Ethernet connector. IP phones connect directly to your router and have all the hardware and software necessary right onboard to handle the IP call. Wi-Fi phones allow subscribing callers to make VoIP calls from any Wi-Fi hot spot.

• Computer-to-computer — This is certainly the easiest way to use VoIP. You don't even have to pay for long-distance calls. There are several companies offering free or very low-cost software that you can use for this type of VoIP. All you need is the software, a microphone, speakers, a sound card and an Internet connection, preferably a fast one like you would get through a cable or DSL modem. Except for your normal monthly ISP fee, there is usually no charge for computer-to-computer calls, no matter the distance.

Robert Valdes and Dave Roos

3.2. Comprehension tasks

3.2.1. Answer the following questions

1. What is behind VoIP technology?
2. Do you think VoIP is able to change the world's phone system?
3. What stands for ATA?

4. What advantages does this device provide?
5. How do IP phone function?
6. What seems the easiest way to apply VoIP?

3.2.2. Match the following statements as True or False

1. VoIP method has existed for a long time.
2. It is impossible to replace a traditional phone system.
3. The most common way to place a call is through an analog telephone adaptor.
4. Wi-Fi phones provide the possibility to make VoIP calls from any remote place.
5. Computer-to-computer calls are usually free.

4. Discussion

4.1. You are a just employed IT specialist. Your boss assigned you with the task to implement new technologies to advance the company's efficiency. What would you start with?
4.2. Discuss all the advantages and disadvantaged VoIP implementation may result in.
4.3. Discuss possible improvements of the VoIP technology.

UNIT 40

1. Vocabulary

help desk (technician)	компьютерная служба помощи
debugging	1) отладка (поиск и исправление ошибок в разрабатываемой программе); 2) наладка (оборудования), исправление неисправностей
troubleshooting	поиск неисправностей, диагностика, устранение неполадок
error message	сообщение об ошибке
dialogue box	диалоговое окно, блок диалога
fuzzy	нечеткий
corrupted	искаженный, поврежденный
flicker	мерцать, мелькать
fail	выходить из строя
low memory	недостаточно памяти
unauthorized	несанкционированный
cooling fan	охлаждающий вентилятор
reboot	перезагрузка

recovery	восстановление, возобновление, исправление
back up	создавать резервную копию
uninterruptible power supply	источник бесперебойного питания

2. Translate from Russian into English

2.1. Самый простой и надежный метод защиты от неавторизованного доступа — режим независимого использования компьютера одним пользователем в специально предназначенной комнате.
2.2. Некоторые цели системы безопасности реализуются с помощью программных средств, например защиты файлов от вирусов.
2.3. Если соединение не может быть установлено, то во всплывающем окне система указывает номер ошибки с кратким пояснением.
2.4. Когда требуется срочная компьютерная помощь, следует обратиться к профессионалам.
2.5. Мерцание монитора приводит к быстрой утомляемости глаз и головным болям.
2.6. Более дорогие компьютерные корпуса оснащаются охлаждающими вентиляторами.
2.7. Диалоговое окно является вспомогательным окном, содержащим различные органы управления.
2.8. По сравнению с портативными компьютерами стационарные компьютеры открыть проще, а устранение неполадок происходит без лишней суеты.
2.9. Перезагрузка — это процесс, при котором компьютер полностью очищает или восстанавливает содержимое оперативной памяти и возобновляет свою работу заново.
2.10. Создание резервной копии диска ориентировано на сохранение всей файловой системы жесткого диска.

3. Reading

3.1. Read the text

How To Solve Every Problem of Your Computer

There are many problems about computer errors and if people even are advanced users — they still have got lots of misunderstandings —how to obtain this edge and how to cope with this problem. Now I want to share with you my thoughts about computer problems and errors. I will spare you the details about computer inside or something every programmer should know. No, you will just get nice and free tutorial which will help you to deal with the best help services and which will help you to resolve your problems by yourself.

Deal with the best specialists, because in case you have get some serious problems with your computer — you need someone who will help you. If you do not want to lose all information on your computer, but you are sure the error is in the computer is high and tremendous — hire a specialist who will be able to help you. That is OK — you will say, but what should I do in case there are some problems. You do not have to be in shame — there are many people like you and they have got the same problems. Let us count some problems why people do not want to hire specialists to get some help.

1. It will take you lots of money. Remember this myth number one. You are able to deal with some services and servicers which will give you cheap but quality help. Be sure it will help you to deal with the best ins and at the same time you will not waste a spare cent!

2. Make sure there are some people who are able to help you, but if you think it is mere waste of time — here you go. As you see the main problem people have got and it is number two — they are sure it will take them lots of time. But you should know it is just a current belief. In case you still think it will take you lots of time — just deal with online services! Hire someone or ask for online advice — it will help you to resolve a computer problem online and without any hesitations and problems.

As you see there are enough strong arguments why you do not have to solve problems yourself and why you have to hire someone. Use online or real services to get people who will help you and be sure — your device is under protection and cover!

So, good luck for you for now and click here to get more tips for free about your kind of help and problems. Use this link to get the cheapest way and to deal with the best ups for you! Take it now and do not waste your time!

If you do not take care of the registry of your PC and this is where registry cleaners are your major helpers.

We would like to give you some general tips — today the online technologies give you a really unique chance to choose exactly what you need at the best terms which are available on the market. Strange, but most of the people don't use this opportunity. In real life it means that you must use all the tools of today to get the info that you need. Visit social networks and check the accounts that are relevant to your topic. Go to the niche forums and participate in the discussion. All this will help you to create a true vision of this market. Thus, we are giving you a real chance to make a smart and nicely balanced decision.

P.S. And also sign up to the RSS feed on this blog, because we will everything possible to keep updating this blog with new publications about registry cleaners.

3.2. Comprehension tasks

3.2.1. Match the following statements as True, False or Not stated

1. Any user can resolve computer problems independently.
2. Many people feel ashamed to hire a computer specialist in case of problems.
3. Specialist services are rather expensive.
4. Some computer problems can be resolved online.
5. Nowadays most people choose the online technologies for help.

4. Discussion

4.1. Supposing your computer is running slowly, what steps could you take to fix it?
4.2. What do you do when Windows programs stop responding?
4.3. Is it necessary to reboot the computer if it freezes?
4.4. How do you fix the Windows blue screen errors?
4.5. Do you turn for help if you have no idea how to erase your hard disc drive and start over?
4.6. What do you do to protect your files and folders in Windows?
4.7. For example, you Twitter account has been hacked. What measures will you undertake?

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