МИНИСТЕРСТВО ОБРАЗОВАНИЯ РЕСПУБЛИКИ БЕЛАРУСЬ
Минский государственный лингвистический университет

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СТАНЬ ЭКСПЕРТОМ В ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЯХ

BECOME IT-SAVVY

Рекомендовано учебно-методическим объединением по лингвистическому образованию в качестве пособия для студентов учреждений высшего образования, обучающихся по специальности 1-23 01 02-01 «Лингвистическое обеспечение межкультурных коммуникаций (информационное обслуживание)»

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К78

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Пособие предназначено для совершенствования навыков и развития умений профессионально ориентированной коммуникации в сфере информационных технологий. Оно состоит из 7 разделов, где представлены актуальные с точки зрения информационных технологий аутентичные тексты с тренировочными упражнениями и заданиями, ориентирующими студентов на самостоятельный поиск и анализ информации.

Адресовано студентам 3 курса факультета межкультурных коммуникаций МГЛУ, изучающим английский язык в качестве основной специальности.

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Предисловие

Настоящее пособие выполнено в соответствии с требованиями Типовой программы по дисциплине «Практикум по культуре речевого общения» для высших учебных заведений по специальности 1-23 01 02-01 «Лингвистическое обеспечение межкультурных коммуникаций (информационное обслуживание)». Оно адресовано студентам 3 курса факультета межкультурных коммуникаций МГЛУ в качестве основного пособия для аудиторной и самостоятельной работы.

Пособие включает вводное задание и 7 разделов, освещающих следующие темы по аспекту «Устная практика: информационное обслуживание»: «Современные технологии и будущее», «Облачные технологии и искусственный интеллект», «Интернет – всемирная паутина», «Мобильные компьютеры», «Корпоративные приложения», «Безопасность данных», «Карьера и успех в IT-индустрии».

Основная цель пособия – развитие навыков профессионального общения в сфере информационных технологий на основе компетентностного подхода.

Каждый раздел пособия имеет следующую структуру: лексический минимум активной лексики по изучаемой теме; тексты, затрагивающие актуальные проблемы в сфере информационных технологий; задания, направленные на усвоение студентами материала прочитанного текста и закрепления активной лексики; комплекс заданий, ориентированный на развитие умений продуцирования монологического и диалогического высказывания по предъявляемой теме; задание на поиск информации в Интернете и ее последующую обработку.

Работа над темами начинается со знакомства с активной лексикой, на которую следует обратить внимание при последующем прочтении текста.

Затем вводится теоретическая информация по различным проблемам в сфере информационных технологий, представленная в аутентичных текстах. За текстами следуют упражнения на проверку усвоения прочитанной информации и закрепления лексического материала. Задания по тексту представлены в формате «объяснить выделенные понятия», «дополнить подходящими синонимами из текста», «дать эквивалент на соответствующем языке», «сопоставить слово с его дефиницией», «найти и прокомментировать правильное/неправильное утверждение», «ответить на поставленные вопросы», упражнений, направленных на осуществление коммуникации в заданных параметрах с использованием материала текста.

Комплекс коммуникативно ориентированных заданий соотносится по содержанию с изучаемой темой и предлагаемой теоретической информацией.

В рамках компетентностного подхода к обучению по аспекту «Устная практика: информационное обслуживание» автором пособия разработаны упражнения, направленные на развитие умений выстраивать диалогическое/монологическое высказывание по темам и осуществлять общение в конкретных коммуникативных ситуациях, максимально приближенных к реальным. В соответствии с предлагаемыми материалами студенты разрабатывают стратегии собственного коммуникативного поведения на основе тематически адекватной лексики, знаний социокультурных норм профессионального общения, правил речевого этикета, позволяющих эффективно использовать иностранный язык в своей профессиональной деятельности.

Завершающим этапом работы над темой является задание по подготовке презентации или проекта, который начинается с самостоятельного поиска материала в Интернете, его критического осмысления и творческой переработки.

INTRODUCTORY TASK

IT is short for Information Technology. It is a broad subject concerned with all aspects of managing and processing information, especially within a large organization or company. What contemporary names are associated with this sphere?

Assignment 1. Look at the table below. Match the company/product/service/ technology with a corresponding name.

Steve Jobs	Hyperloop
Elon Musk	Facebook
Bill Gates	Amazon
Joseph Bezos	Google
Mark Zuckerberg	Tesla
Larry Page and Sergey Brin	iPhone
Jack Dorsey	Microsoft
	Twitter

Assignment 2. Read the following quotes about IT. Do you agree or disagree with the ideas present in them?

1. The number one benefit of information technology is that it empowers people to do what they want to do. It lets people be creative. It lets people be productive. It lets people learn things they didn't think they could learn before, and so in a sense it is all about potential (*Steve Ballmer*).
2. Our intuition about the future is linear. But the reality of information technology is exponential, and that makes a profound difference. If I take 30 steps linearly, I get to 30. If I take 30 steps exponentially, I get to a billion (*Ray Kurzweil*).
3. Information technology has been one of the leading drivers of globalization, and it may also become one of its major victims (*Evgeny Morozov*).
4. The new information technology... Internet and e-mail... have practically eliminated the physical costs of communications (*Peter Drucker*).
5. Technology is dominated by two types of people: those who understand what they do not manage, and those who manage what they do not understand (*Archibald Putt, Putt's Law*).

Assignment 3. How do you think these professions might use IT technologies: architects, interior designers, farmers, landscape gardeners, musicians, rally drivers, salespeople? Compare your answers with your groupmates'.

Assignment 4. Scan the following four texts presenting one of the current spheres where IT technologies are in high demand.

A ticket on Jeff Bezos' space tourism rocket will cost at least $200,000

The price is as high as the trip itself

A Reuters report this morning has given us an advanced window on the price of entry for Jeff Bezos' Blue Origin space tourism offering, with two sources suggesting a single ticket will cost between $200,000 and $300,000. Blue Origin is an independent company that Bezos founded to work on space travel, and its New Shepard vehicle is a rocket with a passenger capsule attached at the tip, intended primarily to facilitate the fancies of well-off tourists.

Offering six reclining seats accompanied by large windows to soak up the sights of going to the edge of space, the new Shepard will provide its riders with a few minutes' worth of weightlessness and a view of the curvature of the earth. Good both for Instagram addicts and flat earth zealots.

Blue Origin's testing has included eight test launches and returns of the New Shepard so far, including some with dummies inside, though no humans have yet been put on board any of the test flights. Having previously suggested that the first trips might happen in 2018, Bezos' company is now more likely looking at next year for the start of its commercial offering.

The reported Blue Origin pricing has already been accepted by 650 people keen to experience this wholly new and exclusive form of tourism.

https://www.theverge.com/2018/7/13/17567872/jeff-bezos-blue-origin-space-tourism-price-ticket

Elon Musk wants to colonize Mars with SpaceX – here's what he said it will be like as one of the first residents

Elon Musk said being one of the first people to colonize Mars won't be glamorous. Speaking during a Q&A at the South by Southwest festival in Austin, Texas, on Sunday, the SpaceX founder addressed his plans to colonize Mars and what it will be like for those early pioneers on the red frontier.

According to Musk, there's a misconception that a base on Mars will serve as "an escape hatch for rich people." "It wasn't that at all," Musk said of his colonization vision. "For the people who go to Mars, it'll be far more dangerous. Difficult, dangerous, good chance you'll die. Excitement for those who survive. That kind of thing."

"There's already people who want to go in the beginning. There will be some for whom the excitement of exploration and the next frontier exceeds the danger," Musk continued. Musk said he expects SpaceX to begin making short trips back and forth to Mars in the first half of 2019. His long-term plan is to put 1 million people on the planet as a sort of plan B society in case nuclear war wipes out the human race.

In the event of nuclear devastation, Musk said, “we want to make sure there’s enough of a seed of civilization somewhere else to bring civilization back and perhaps shorten the length of the dark ages. I think that’s why it’s important to get a self-sustaining base, ideally on Mars, because it’s more likely to survive than a Moon base.”

Musk’s plan to build giant reusable spaceships for colonizing the red planet is an ambitious one. He and SpaceX have yet to detail exactly how hypothetical Mars colonists will survive for months or years on end. Many people still have practical questions for the tech billionaire.

https://www.businessinsider.com/elon-musk-colonization-of-mars-sxsw-2018-3

Moon colonization may soon be a real possibility, say scientists

While much of the new regarding establishing a base on another planet is revolving around Mars over the past few years, new technology may make Moon colonization a real possibility.

Back during the cold war era, the idea of Moon colonization was a hot topic – but plans on the side of both the USSR and the United States were suspended because the plan was very expensive and didn’t really accomplish anything concrete. Around 50 years later, however, we now have the technology and infrastructure to make it a real possibility. With companies like SpaceX reinvigorating the space travel industry and proving that it’s possible to travel into space in an economical manner, the dream of Moon colonization is more realistic than ever before.

One other benefit of Moon colonization that many don’t realize is the fact that a lunar colony could serve as a spot to allow us to more easily reach our exploration deeper into outer space. By launching missions from the Moon rather than here on Earth, Moon colonization opens up a myriad of possibilities that may make space travel in the future much easier and much less expensive. Another perk is the ability to extract valuable minerals – most particularly helium-3, which is used in neutron counters.

Helium-3 is very scarce on earth, but there’s actually a large amount of it on the Moon. As such, a number of governments are taking action to prepare themselves for a trip to the satellite in order to mine this precious material as a fuel supply.

As mentioned above, one of the main problems with our society here on earth is the incredible damage that climate change is doing to our environment – with much of that damage coming from industrial activity. If we were to take high-emission industry and move it towards Moon colonization in the future, we may be able to increase the longevity of our planet moving forward. This is obviously in the distant rather than immediate future, but scientists hope that we may soon find an economical and easy way to transfer goods from Earth to the Moon and vice versa – opening it up as an option for manufacturing if not a hub for a significant part of the human population.

While the dream of moon colonization is definitely more achievable than it was before, there are a number of obstacles we'd have to overcome to make it a reality. For example, there is no atmosphere and no magnetic field on the Moon – causing massive temperature differences that can sometimes reach as much as two hundred degrees Celsius. People are currently only able to work on the planet in specific suits and within sealed lunar rovers or within a sealed module with a life support system. It's true that life on the planet would likely not be ideal, but if we were to make our own base with its own sort of climate control using advanced materials, it's certainly possible we could create a moon base that is self-contained and would house people and infrastructure alike.

https://www.valuewalk.com/2018/04/moon-colonization-possibility-scientists/

Ice confirmed at the Moon's poles

In the darkest and coldest parts of its polar regions, a team of scientists has directly observed definitive evidence of water ice on the Moon's surface. These ice deposits are patchily distributed and could possibly be ancient. At the southern pole, most of the ice is concentrated at lunar craters, while the northern pole's ice is more widely, but sparsely spread.

A team of scientists, led by Shuai Li of the University of Hawaii and Brown University and including Richard Elphic from NASA's Ames Research Center in California's Silicon Valley, used data from NASA's Moon Mineralogy Mapper (M3) instrument to identify three specific signatures that definitively prove there is water ice at the surface of the Moon.

Most of the newfound water ice lies in the shadows of craters near the poles, where the warmest temperatures never reach above minus 250 degrees Fahrenheit. Because of the very small tilt of the moon's rotation axis, sunlight never reaches these regions.

Previous observations indirectly found possible signs of surface ice at the lunar South Pole, but these could have been explained by other phenomena, such as unusually reflective lunar soil.

With enough ice sitting at the surface – within the top few millimeters – water would possibly be accessible as a resource for future expeditions to explore and even stay on the moon, and potentially easier to access than the water detected beneath the moon's surface.

https://www.sciencedaily.com/releases/2018/08/180820203638.htm

Assignment 5. If you were a billionaire, what project among mentioned above would you support and invest your money in? Why?

Assignment 6. What other IT spheres do you consider to be the most perspective? Make a list of issues closely connected with the development in IT and range them from the point of its complication/required investments/impact on society.

Unit 1
MODERN TECHNOLOGIES AND THE FUTURE

Text A

Assignment 1. Before reading the following text, study your active vocabulary.

High-speed train, supersonic speed, challenge, fluctuating price, crucial, environmentally friendly, to be massively adopted, cost-effective, issue, endeavor.

Assignment 2. Read the texts on Hyperloop One and identify its mission.

A pod races through the Hyperloop for the first time ever

The future sounds a bit like a witch crying over a dead cat. That spooky wail is the sound Hyperloop makes – at least, the version of the high-speed transportation system designed by Hyperloop One, which just took a big stride toward the day it flings you between cities in near-vacuum tubes.

The Los Angeles company leading the race to fulfill Elon Musk's dream of tubular transit tested its pod for the first-time last weekend. That pod is 28 feet long and made of aluminum and carbon fiber. It looks a bit like a bus with a beak.

A fast bus with a beak. Once loaded into a 1,600-foot-long concrete tube in the Nevada desert, the pod hit 192 mph in about 5 seconds, using an electric propulsion system producing more than 3,000 horsepower. As the pod accelerated through the tube 11 feet in diameter, the 16 wheels retracted as magnetic levitation took over. Mag-lev – used by high-speed trains in Japan and elsewhere – reduces drag and the energy required to achieve near-supersonic speeds. It helps, too, that Hyperloop One's engineers also pumped nearly all the air out of the tube, reducing air pressure to what you'd experience at an altitude of 200,000 feet.

"This is the dawn of the age of commercialization for the Hyperloop," says Shervin Pishevar, Hyperloop One's executive chairman and cofounder.

It's a big step, to be sure, but just one of many in the long journey ahead. The weekend test provided a nice proof of concept, but the challenge is not in making Hyperloop work but in making it practical. For Hyperloop to truly take off, it must operate cheaply enough to lure customers away from air travel or high-speed rail. And then there's the problem of loading people or, more likely, cargo without ruining that near-vacuum state, designing and building stations, getting an endless list of public agencies and players to agree to build the thing, and so on.

All that comes later, and chief engineer Josh Geigel says Hyperloop One is indeed working on cracking those myriad challenges. No one knows just how Hyperloop will pan out, but at least we know what it sounds like. Creepy.

https://www.wired.com/story/hyperloop-one-test-pod-video/

What is the Hyperloop?

The Hyperloop concept was proposed by billionaire inventor Elon Musk, CEO of the aerospace firm SpaceX and the guy behind Tesla. It's a reaction to the California High-Speed Rail System currently under development, a bullet train Musk feels is lackluster (and which will be one of the most expensive and slow-moving in the world).

A one-way trip between San Francisco and Los Angeles on the Hyperloop could take about 35 minutes.

Musk's Hyperloop consists of two massive tubes extending from San Francisco to Los Angeles. Pods carrying passengers would travel through the tubes at speeds topping out over 700 mph. Imagine the pneumatic tubes people in The Jetsons use to move around buildings, but on a much bigger scale. For propulsion, magnetic accelerators will be planted along the length of the tube, propelling the pods forward. The tubes would house a low-pressure environment, surrounding the pod with a cushion of air that permits the pod to move safely at such high speeds, like a puck gliding over an air hockey table.

Given the tight quarters in the tube, pressure buildup in front of the pod could be a problem. The tube needs a system to keep air from building up in this way. Musk's design recommends an air compressor on the front of the pod that will move air from the front to the tail, keeping it aloft and preventing pressure building up due to air displacement. A one-way trip on the Hyperloop is projected to take about 35 minutes (for comparison, traveling the same distance by car takes roughly six hours).

Why the need?

Conventional means of transportation (road, water, air, and rail) tend to be some mix of expensive, slow, and environmentally harmful. Road travel is particularly problematic, given carbon emissions and the fluctuating price of oil. As the environmental dangers of energy consumption continue to worsen, mass transit will be crucial in the years to come.

Rail travel is relatively energy efficient and offers the most environmentally friendly option but is too slow and expensive to be massively adopted. At distances less than 900 miles, supersonic travel is unfeasible, as most of the journey would be spent ascending and descending (the slowest parts of a flight.) Given these issues, the Hyperloop aims to make a cost-effective, high speed transportation system for use at moderate distances. As an example of the right type of distance, Musk uses the route from San Francisco to L.A. (a route the high-speed rail system will also cover). The Hyperloop tubes would have solar panels installed on the roof, allowing for a clean and self-powering system.

There are of course drawbacks. Most notably, moving through a tube at such high speeds precludes large turns or changes in elevation. As a result, the system is optimal for straightforward trips across relatively level terrain.

California is, of course, susceptible to earthquakes, and the Hyperloop design takes this into account. The tubes would be mounted on a series of pylons spread along the route, each pylon placed every 100 feet or so. The pylons will allow for slip due to thermal expansion and earthquakes, ensuring that the tubes will not be broken by any such movement.

Realistically, the most important problem in getting any project off the ground is money, doubly so when talking about a public work. Even if one can produce an impressive blueprint, there are still issues of public approval, legislation, regulations, and contractors to worry about. Fortunately, the Hyperloop would be a cost-saving measure, especially when measured against the corpulent rail project currently underway. Musk's white paper for the Hyperloop estimates the total cost could be kept under six billion dollars. Meanwhile, phase one of the California High-Speed Rail Project is expected to cost at least $68 billion.

It remains unclear whether commercial Hyperloop systems will ever be widely adopted. As the global population swells and the environment declines, however, better mass transit systems will become essential. Leonard Bernstein once claimed that great endeavors require two things: "a plan, and not quite enough time." The plan for the Hyperloop is there, but how much time do we have?

https://www.digitaltrends.com/cool-tech/what-is-the-hyperloop/4/

Assignment 3. Continue the line of synonyms by adding a word from the text.

1. Fast, quick, rapid, swift, breakneck, express…
2. Innumerable, countless, immeasurable…
3. Reach, achieve, obtain, attain, arrive…
4. Dispel, speed up, disperse, quicken, hasten…
5. Succeed, prosper, do well, thrive…
6. Frightening, disturbing, weird, threatening, eerie, menacing, sinister…

Assignment 4. Discuss the following questions.

1. What is Hyperloop One?
2. What helps Hyperloop attain high speed?
3. What challenges does Hyperloop face?
4. Does Hyperloop seem to be a utopian project?
5. Is it possible that Hyperloop will supplant conventional means of transport?
6. Would you like to take a ride on Hyperloop?

Assignment 5. You are participating in a press-conference devoted to the recent achievements of Hyperloop testing. One of you is Elon Musk. The others are journalists asking provocative questions about the upcoming launch of Hyperloop in the format "Is it true that…?", "Is it possible that…?".

Text B

Assignment 1. Before reading the following text, study your active vocabulary.

To pioneer, electric vehicle, self-driving car, manufacturing standard, default standard, high market/down market, to pay premium, to enter the market, to beat, brand, supercharger, to fill the demand, open source, proprietary, to profit, to be a long-term winner, to meet the goal.

Assignment 2. Read the text and be ready to discuss it.

Tesla will rule the car world

Some people still doubt Tesla. Elon Musk is laughing all the way to the future.

Tesla is the future of the car. It has pioneered the 21st-century electric vehicle (EV), and it's leading the way to the self-driving car. Still, a lot of people simply don't understand visionary founder Elon Musk's dream. They keep trying to judge it by old manufacturing standards. They're missing the point. Musk doesn't want Tesla to be the next GM. He wants to transform the car industry.

Musk did a fine job of explaining it in 2006, and The Secret Tesla Motors Master Plan is still on track. "The strategy of Tesla is to enter at the high end of the market, where customers are prepared to pay a premium, and then drive down market as fast as possible to higher unit volume and lower prices with each successive model."

Where is Tesla now in relation to that plan? It's on course for the first $35,000 Tesla Model 3s to arrive on buyers' driveways by late 2017.

At the same time, Musk is transforming the car industry. Chevrolet, a GM brand, delivered its first three Bolt models in December. These $37,000 cars don't have Tesla's pizazz, but they do have a Tesla-like battery range of 238 miles per charge.

Is Musk worried? Nope. He thinks Chevy isn't making enough Bolts. GM will only be manufacturing 20,000 to 30,000 of the EVs. "Really, a car like that should be 300,000 to 500,000 per year for it to really make a difference," said Musk.

Again, it's not about beating GM, Toyota or Volkswagen. It's about changing things once and for all.

Take superchargers. Today, given the scarcity of supercharger stations and the need to know ahead of time where to find them, you need to be a dedicated Tesla fan to make a long-distance trip, but those are exactly the people who buy them. Tomorrow, as Teslas become more affordable, there will be more supercharger stations. Tesla won't be building all of them, though. Other EV companies will build them using Tesla's open patents.

As more people buy EVs, the demand for a charging infrastructure increases. Companies that see an opportunity to fill that demand will use Tesla charging designs because they're free. See where this is going?

We've seen this before. Remember the old parallel-printer interface, IEEE-488? HP invented it, and then it opened it for a nominal fee to everyone. Decades later, HP still makes most of its money from printers.

This is also yet another example of how open source can change the world. By opening up patents, the old proprietary world is left behind. Tesla is betting that by giving the world default standards, it will end up profiting. That's a wise bet.

But the charging stations are just the beginning of what will be a virtuous cycle. The more charging stations, the easier it will be for potential buyers to rationalize buying EVs. That will help all EVs, but Tesla, the only major carmaker planning on delivering hundreds of thousands of EVs, will be the long-term winner.

Tesla has also set itself up to take advantage of a world where we charge up our cars instead of filling them up. In early January, Tesla started shipping the first batteries out of its Gigafactory. Tesla plans to sell 500,000 Model 3s by 2018. The Gigafactory is a major step forward in meeting that goal.

True, Tesla didn't quite make its goal of 80,000 cars in 2016. But if you focus on that, you miss that the company's total production of Teslas rose 64 % year over year in 2016.

Tesla is, as it ever was, defying traditional business truisms. By dreaming big, using open-source principles and getting customer buy-in for Musk's vision, Tesla will become the 21st-century car company. All the others will just be following Tesla's tire tracks.

http://www.computerworld.com/article/3155911/emerging-technology/tesla-will-rule-the-car-world.html#tk.drr_mlt

Assignment 3. Discuss with your partner advantages and disadvantages of using EV in the city. Share your ideas with other members of your group. Do your groupmates agree with you?

Assignment 4. Speculate on the futurity of the EV. Give your reasoning.

Assignment 5. You are going to open an EV showroom in your town. Think of an advertising campaign highlighting the advantages of using the EV.

Text C

Assignment 1. Before reading the following text, study your active vocabulary.

Augmented reality, computer-generated environment, to interact with, to immerse, heads-up display, to roll out, to launch, compatible, venue, ultimate goal.

Assignment 2. Read the text. Make notes of the key ideas.

What is augmented reality?

Augmented reality is the result of using technology to superimpose information – sounds, images and text – on the world we see. Picture the "Minority Report" or "Iron Man" style of interactivity.

Augmented reality vs. virtual reality

This is rather different from virtual reality. Virtual reality means computer-generated environments for you to interact with, and be immersed in. Augmented reality (also known as AR), adds to the reality you would ordinarily see rather than replacing it.

Augmented reality in today's world

Augmented reality is often presented as a kind of futuristic technology, but a form of it has been around for years. For example, the heads-up displays in many fighter aircraft as far back as the 1990s would show information about the attitude, direction and speed of the plane, and only a few years later they could show which objects in the field of view were targets.

In the past decade, various labs and companies have built devices that give us augmented reality. In 2009, the MIT Media Lab's Fluid Interfaces Group presented SixthSense, a device that combined the use of a camera, small projector, smartphone and mirror. The device hangs from the user's chest in a lanyard fashion from the neck. Four sensor devices on the user's fingers can be used to manipulate the images projected by SixthSense.

Google rolled out Google Glass in 2013, moving augmented reality to a more wearable interface, in this case, glasses. It displays on the user's lens screen via a small projector and responds to voice commands, overlaying images, videos and sounds onto the screen. Google pulled Google Glass at the end of December 2015.

As it happens, phones and tablets are the way augmented reality gets into most people's lives. Vito Technology's Star Walk app, for instance, allows a user to point the camera in their tablet or phone at the sky and see the names of stars and planets superimposed on the image. Another app called Layar uses the smartphone's GPS and its camera to collect information about the user's surroundings. It then displays information about nearby restaurants, stores and points of interest.

Some apps for tablets and phones work with other objects as well. Disney Research developed an AR coloring book, in which you color in a character in a conventional (though app-compatible) book and launch the app on the device. The app accesses the camera and uses it to detect which character you are coloring and uses software to re-create the character in 3D character on the screen.

One of the most popular ways AR has infiltrated everyday life is through mobile games. In 2016, the AR game "Pokémon Go" became a sensation worldwide, with over 100 million estimated users at its peak, according to CNET. It ended up making more than $2 billion and counting, according to Forbes. The game allowed users to see Pokémon characters bouncing around in their own town. The goal was to capture these pocket monsters, then use them to battle others, locally, in AR gyms.

In 2018, "Harry Potter: Hogwarts Mystery" became the mobile AR gaming sensation. The game lets users see the Hogwarts world around them while having the ability to cast spells, use potions and to learn from Hogwarts teachers. As of this writing, the game had around 10 million downloads in the Google Play store.

Researchers are also developing holograms, which can take VR a step further, since holograms can be seen and heard by a crowd of people all at once.

"While research in holography plays an important role in the development of futuristic displays and augmented reality devices, today we are working on many other applications, such as ultrathin and lightweight optical devices for cameras and satellites," researcher Lei Wang, a doctoral student at the ANU Research School of Physics and Engineering, said in a statement.

The future of augmented reality

This doesn't mean that phones and tablets will be the only venue for AR. Research continues apace on including AR functionality in contact lenses, and other wearable devices. The ultimate goal of augmented reality is to create a convenient and natural immersion, so there's a sense that phones and tablets will get replaced, though it isn't clear what those replacements will be. Even glasses might take on a new form, as "smart glasses" are developed for blind people.

Like any new technology, AR has a lot of political and ethical issues. Google Glass, for example, raised privacy concerns. Some worried that conversations might be surreptitiously recorded, or pictures snapped, or thought that they might be identified by face recognition software. AR glasses, contacts and more, like the Glass - X and Google Lens, though, are moving ahead in production and sales.

https://www.livescience.com/34843-augmented-reality.html

Assignment 3. Define the term "augmented reality".

Assignment 4. Spot in the text missed words to make word combinations.

1. Smart …
2. … goal
3. … display
4. Voice …
5. Wearable …
6. … reality
7. Face …

Assignment 5. Team up with students from your group. Highlight the difference between AR and VR.

Text D

Assignment 1. Before reading the text study your active vocabulary.

Smart glasses, top-notch, face recognition, to be knowledge intensive, wearable computing, interface, voice command, touch screen, battery life, tablet, hololens, to mainstream, boost, competitive factor, to update, to upgrade, database.

Assignment 2. Read the text. Give the gist of it.

Surprising things to know about smart glasses

Airlines succeed when they can treat passengers with a personal touch and top-notch customer service. For example, flight attendants can call passengers by name, provide personalized meals (that are, say, vegetarian or kosher), give extra attention to nervous fliers, provide added service for loyalty-card members or keep an eye on passengers with a history of disruptiveness.

This kind of service is hard to provide because of the lack of readily accessible knowledge.

Flight attendants wearing augmented reality smart glasses, however, could use face recognition that identifies a passenger, with a heads-up display (HUD) that shows the airlines' notes about each individual. The end result is that these employees will perform like they have incredibly actionable knowledge – as if they recognize each passenger and "know" exactly what they need for optimal service.

Emirate's initiative strongly hints at the five surprising and important things you need to know about the coming world of smart glasses.

Google Glass was a success

The best-known smart glasses product is Google Glass. The false narrative around Glass is that Google tried to rush it into the market and that it was rejected by the public, and therefore failed.

The truth is that Google's R&D lab launched a splashy and expensive public beta program, expressly to determine what this new technology could best be used for. They learned all they could, then transitioned the project out of the lab and into a division for developing glass as a product.

The first Google Glass product is called Glass at Work. Google runs a Glass at Work developer program for the creation of enterprise applications for Glass.

One of the biggest and earliest users of Google Glass in manufacturing is Boeing, whose workers use Glass for building airplanes.

Specifically, Boeing airplane manufacturing involves a complex process of connecting all the wiring that controls a plane's many electrical systems. The process is massively knowledge intensive. Google Glass enables workers to function as if they've memorized all the complexities of connecting the wires. They behave as if they have perfect knowledge and keep their hands free to do the work itself.

Google Glass is also being used heavily in medicine, both for research and clinically.

One inspiring project at Silicon Valley's Stanford University called the Autism Glass Project is using Google Glass to help children with autism form emotional bonds with people by helping them read facial cues and other forms of emotional communication.

With "pilot" projects like Emirates to real manufacturing applications like Boeing to a world of smart glasses research, the Google Glass program has delivered an important platform and a huge body of knowledge for figuring out how smart glasses would work.

Augmented reality is all about smart glasses

The public can be forgiven for believing that the smart glasses industry is just a moribund category of wearable computing that itself has disappointed expectations. Instead, the industry has moved on to focus on more promising and exciting technologies, like augmented reality.

The more sophisticated understanding, however, is that augmented reality and smart glasses are the same thing. In other words, all the investment and progress in augmented reality is building a foundation for the coming smart glasses revolution.

As Google demonstrated with Google Glass, the hardware part of smart glasses simply involves a camera, a way to control the interface (such as voice commands or touch screen) and some way to bend light into the wearer's eye.

Such hardware is already available, but it's too big and clunky to be socially acceptable. However, it's getting better, smaller, lighter, offers longer battery life and is becoming more "wearable" all the time. The hardware is an industry-wide work in progress.

More important than hardware is the creation of development platforms and the resulting interfaces and content for smart glasses – augmented reality platforms and apps. Earlier this month, Apple unveiled something called ARKit, an augmented reality developers kit for the upcoming iOS 11 mobile operating system.

The ARKit idea is that developers can build apps for iPhones and iPads that use the camera for augmented reality. You look at the screen and see what's on the other side of the device, plus whatever digital objects or information are to be inserted as augmented reality.

Thousands of developers are expected to use ARKit, so we can look forward to thousands of apps. But augmented reality on a phone or tablet is clearly just a stopgap for development while smart glasses evolve sufficiently for widespread use.

Microsoft demonstrates Hololens with interactive games, but the product is pure enterprise for now

Microsoft, of course, is working on its highly anticipated HoloLens, which is available currently only to developers and mostly for enterprise applications.

Former Android founder Andy Rubin is in the news because his unicorn startup, Essential, announced a new phone and virtual assistant appliance. Less well known is that Essential's got a patent for smart glasses. Rubin is a well-known fan of the Google Glass concept.

And, of course, augmented reality smart glasses startups like Google-backed Magic Leap are getting major funding.

So, whether we are talking about the companies like Microsoft and Magic Leap that emphasize hardware, or companies like Apple and Facebook that emphasize augmented reality, they're all working toward the same goal: the mainstreaming of augmented reality smart glasses.

Smart glasses are really about prosthetic knowledge

Why would Emirates Airline go to the trouble of outfitting flight attendants with smart glasses? Why not give them tablets to look up the same information?

The reason is that the effect of smart glasses will be completely different from every other user interface. It won't look or feel like people are "using" a computer.

Let's say Emirates did roll out augmented reality tablets. One flight attendant wants to interact with the passenger in seat 2B. He goes and gets the tablet. He stands next to the passenger and holds up the tablet, which shows the passenger's name and some helpful personal information.

This scenario is ridiculous and would never happen.

Now let's do the smart glasses version. The passenger in seat 2B presses the call button. The flight attendant comes over, and instantly the passenger's name

and other information appears overlaid on his glasses. He's able to respond in a customized fashion, recalling previous engagements on prior flights and reflecting the passenger's personal profile.

The difference is that using augmented reality on a phone or tablet is like "using" a computer. Using augmented reality with smart glasses is like "prosthetic knowledge" – the information appears to the wearer in a way that simulates the occurrence of a thought or memory.

It feels that way, too.

The real impact of smart glasses will be in the enterprise

Whenever people talk about smart glasses, they assume the conversation is all about consumers walking around watching YouTube clips and seeing text messages through their prescription glasses or sunglasses.

Consumer use is coming. But the real impact will be in the enterprise. Entire industries from manufacturing to transportation to healthcare and many others are already leading the way. In fact, it's hard to think of any industry or profession that won't benefit from this kind of prosthetic knowledge.

...Smart glasses will be the second most transformative tech over the next 25 years

While autonomous cars and trucks will be the top most transformative tech, augmented reality smart glasses – and the prosthetic knowledge they provide – will deliver a boost to any industry where knowledge is a competitive factor.

Augmented reality smart glasses will enable companies to bolster training and knowledge programmatically, by which I mean they'll be able to upgrade the "knowledge" of tens of thousands of workers using a five-minute update in a database. The net effect of this knowledge upgrade for the entire enterprise workforce will be comparable to the PC and mobile computing transformation of the past 50 years.

So, as you read about augmented reality over the next few years, understand where it's going: straight into smart glasses to power enterprise applications that will transform the world.

http://www.computerworld.com/article/3200672/mobile-wireless/the-5-surprising-things-you-need-to-know-about-smart-glasses.html#tk.drr_mlt

Assignment 3. Give an English equivalent to the following words and word combinations.

1. Первоклассное обслуживание
2. Дополненная реальность
3. Планшет
4. Голографическая линза
5. Производство
6. Носимые компьютеры
7. Корпоративный сектор
8. Индикатор на лобовом стекле

Assignment 4. Work in pairs. Explain the following notions to your partner.

1. Pilot project
2. Heads-up display
3. Google-backed
4. Prosthetic knowledge

Assignment 5. You are participating in the international conference on New Technologies. You are to present a speech on current developments in the sphere of IT. Do you agree that technologies of tomorrow are rapidly becoming technologies of today?

T e x t E

Assignment 1. Before reading the following text, study your active vocabulary.

To release, joint venture, to embed, iris, to be in beta, to be paired with, to enhance.

Assignment 2. Read the text and say whether you agree with the author's predictions.

2018 promises to be the year for smart glasses!

It's been 5 years since Google Glass was released in the market. Time flies, right? Since then we have stumbled upon some attempts in the smart glasses market – these somehow only had their heyday for a short-period. Anyhow, 2018 promises to be the year for smart glasses! Big names have been investing in this not so new market and their new products will have a great deal of influence on how we perceive these glasses.

Deutsche Telekom and Carl Zeiss have paired up and created Tooz Technologies, a smart glasses joint venture in which each company holds a 50 % stake. This partnership couldn't have been any better since Carl Zeiss will provide their optical AR technology whilst Deutsche Telekom will be responsible for connectivity services. Tooz Technologies will aim at a broad variety of customer with its products and their solutions are expected to be marketed to both consumers as well as enterprise clients. According to Dr. Ulrich Simons, Head of the Corporate Research and Technology at Zeiss, the goal is to develop glasses that can be light and design-acceptable to the industry and consumers. Namely, unobtrusive glasses that bring value and can be carried along on a daily basis.

Vaunt smart glasses, powered by Intel, have been another recent exciting release. They look like normal eyeglasses and don't have a camera embedded, nor a glowing LCD screen or buttons. Intel's Vaunt glasses were designed with a light plastic frame and could possibly be mistaken by a normal pair of Wayfarers. Nonetheless, these smart glasses hide something on the inside: two little modules built into the stems of the eyeglasses. These modules can project pictures directly onto the wearers Iris! The first-gen models will be controlled by simple gestures as nodding your head. Vaunt smart glasses are still in beta and there is no concrete prevision when it will come to the market.

But there is not only news for consumers on the glasses market also professional users can look forward to some new releases!

Vuzix Blade, by Vuzix, is an augmented reality smart glasses that provide the user with a smart display with a see-through viewing experience. Vuzix has other types of smart glasses launched in the market, such as Vuzix M300 and Vuzix M100 which focused more on industrial and enterprise. Vuzix Blade is the company's try to delight the general public with its discrete design and tempting features. The wearer can access information such as mapping directions, weather information, restaurants ratings, alerts and many more without checking your smartphone. Furthermore, the smart glasses are paired with Android, iOS, and Wi-Fi. Vuzix announced earlier this month that their Blade smart glasses now have Alexa Amazon integration and according to Alex Kelly – Vuzix's Director of Innovation & Strategic Partnerships – Alexa-enabled technologies will allow users not only to see the digital world but also to communicate with it hands-free, at any-time.

VPS 16 glasses from Viewpoint are embedded with stereoscopic cameras in the nose bridge that enables the tracking of spatial vision. Namely, the spatial plane can be precisely determined by the user. VPS 16 is equipped with 4 cameras that support different customer in different situations e.g. enhancing the visibility of road signs, supporting surgeons executing operations as well as improving athletes' performance. Moreover, the technology behind VPS 16 allows real-time streaming of video and eye coordinates to any kind of mobiles such as laptop, tablet or smartphone. The smart glasses weigh 41-gramme, which can be the perfect fit for an everyday wear once its weight doesn't leave the user any pressure sores.

https://www.wearable-technologies.com/2018/02/2018-promises-to-be-the-year-for-smart-glasses/

Assignment 3. Work in pairs. Explain the following notions to your partner.

1. Stereoscopic camera
2. Restaurants ratings
3. Joint venture
4. See-through view

Assignment 4. Work in groups of 3. Give a short presentation of every kind of smart glasses mentioned in the text. The purpose is to present the most vivid features of every kind.

Assignment 5. You are working as a journalist. You are to right a piece of news on the upcoming device with the feature of augmented reality. Your task is, firstly, to raise public awareness on the subject-matter, secondly, to compare the new device with already existing ones.

Text F

Assignment 1. Before reading the text study your active vocabulary.

Luddite, to confine, to go viral, to unleash, precarious, offshoring, obscene, adherent, fogey, to exploit, lucrative, surveillance, savvy.

Assignment 2. Read the text and make key notes.

Will 2018 be the year of the neo luddite?

The downsides of technology's inexorable march are now becoming clear – and automation will only increase the anxiety. We should expect the growing interest in off-grid lifestyles to be accompanied by direct action and even anti-tech riots

One of the great paradoxes of digital life – understood and exploited by the tech giants – is that we never do what we say. Poll after poll in the past few years has found that people are worried about online privacy and do not trust big tech firms with their data. But they carry on clicking and sharing and posting, preferring speed and convenience above all else. Last year was Silicon Valley's annus horribilis: a year of bots, Russian meddling, sexism, monopolistic practice and tax-minimizing. But I think 2018 might be worse still: the year of the neo-luddite, when anti-tech words turn into deeds.

The caricature of machine-wrecking mobs doesn't capture our new approach to tech. A better phrase is what the writer Blake Snow has called "reformed luddism": a society that views tech with a skeptical eye, noting the benefits while recognizing that it causes problems, too. And more importantly, thinks that something can be done about it.

One expression of reformed luddism is already causing a headache for the tech titans. Facebook and Google are essentially huge advertising firms. Ad-blocking software is their kryptonite. Yet millions of people downloaded these plug-ins to stop ads chasing them across the web last year, and their use has been growing (on desktops at least) close to 20 % each year, indiscriminately hitting smaller publishers, too.

More significantly, the whole of society seems to have woken up to the fact there is a psychological cost to constant checking, swiping and staring. A growing number of my friends now have “no phone” times, don’t instantly sign into the cafe wi-fi, or have weekends away without their computers. This behavior is no longer confined to intellectuals and academics, part of some clever critique of modernity. Every single parent I know frets about “screen time”, and most are engaged in a struggle with a toddler over how much iPad is allowed. The alternative is “slow living” or “slow tech”. “Want to become a slow-tech family?” writes Janell Burley Hoffmann, one of its proponents. “Wait! Just wait – in line, at the doctor’s, for the bus, at the school pickup – just sit and wait.” Turning what used to be ordinary behavior into a “movement” is a very modern way to go about it. But it’s probably necessary.

I would add to this the ever-growing craze for yoga, meditation and all those other things that promise inner peace and meaning – except for the fact all the techies do it, too. Maybe that’s why they do it. Either way, there is a palpable demand for anything that involves less tech, a fetish for back-to-basics. Innocent Drinks have held two “Unplugged Festivals”, offering the chance of “switching off for the weekend ... No Wi-Fi, no 3G, no traditional electricity”. Others take off-grid living much further. There has been an uptick in “back to the land” movements: communes and self-sustaining communities that prefer the low-tech life. According to the Intentional Community Directory, which measures the spread of alternative lifestyles, 300 eco-villages were founded in the first 10 months of 2016, the most since the 1970s. I spent some time in 2016 living in an off-grid community where no one seemed to suffer mobile phone separation anxiety. No one was frantically checking if their last tweet went viral and we all felt better for it.

Even insiders are starting to wonder what monsters they’ve unleashed. Former Google “design ethicist” Tristan Harris recently founded the nonprofit organization Time Well Spent in order to push back against what he calls a “digital attention crisis” of our hijacked minds. “Most of the tech conferences I’m invited to these days include this sort of introspection: is it all going too far? Are we really the good guys?”

That tech firms are responding is proof they see this is a serious threat: many more are building in extra parental controls, and Facebook admitted last year that too much time on their site was bad for your health and promised to do something. Apple investors recently wrote to the company, suggesting the company do more to “ensure that young consumers are using your products in an optimal manner” – a bleak word combination to describe phone-addled children, but still.

It’s worth reflecting what a radical change all this is. That economic growth isn’t everything, that tech means harm as well as good – this is not the escape velocity, you-can’t-stop-progress thinking that has colonized our minds in the past decade. Serious writers now say things that would have been unthinkable until last year: even the Financial Times calls for more regulation and the Economist asks if social media is bad for democracy.

This reformed luddism does not however mean the end of good, old-fashioned machine-smashing. The original luddites did not dislike machines per se, rather what they were doing to their livelihoods and way of life. It's hard not to see the anti-Uber protests in a similar light. Over the past couple of years, there have been something approaching anti-Uber riots in Paris; in Hyderabad, India, drivers took to the streets to vent their rage against unmet promises of lucrative salaries; angry taxi drivers blocked roads last year across Croatia, Hungary and Poland. In Colombia, there were clashes with police, while two Uber vehicles were torched in Johannesburg and 30 metered taxi drivers arrested.

Imagine what might happen when driverless cars turn up. The chancellor has recently bet on them, promising investment and encouraging real road testing; he wants autonomous vehicles on our streets by 2021. The industry will create lots of new and very well-paid jobs, especially in robotics, machine learning and engineering. For people with the right qualifications, that's great. And for the existing lorry and taxi drivers? There will still be some jobs, since even Google tech won't be able to handle Swindon's magic roundabout for a while. But we will need far fewer of them. A handful might retrain and claw their way up to the winner's table. I am told repeatedly in the tech startup bubble that unemployed truckers in their 50s should retrain as web developers and machine-learning specialists, which is a convenient self-delusion. Far more likely is that, as the tech-savvy do better than ever, many truckers or taxi drivers without the necessary skills will drift off to more precarious, piecemeal, low-paid work.

Does anyone seriously think that drivers will passively let this happen, consoled that their great-grandchildren may be richer and less likely to die in a car crash? And what about when Donald Trump's promised jobs don't rematerialize, because of automation rather than offshoring and immigration? Given the endless articles outlining how "robots are coming for your jobs", it would be extremely odd if people didn't blame the robots, and take it out on them, too.

Once people start believing that machines are a force of oppression rather than liberation, there will be no stopping it. Between 1978 and 1995, the Unabomber, Ted Kaczynski, sent 16 bombs to targets including universities and airlines, killing three people and injuring 23. Kaczynski, a Harvard maths prodigy who began to live off-grid in his 20s, was motivated by a belief that technological change was destroying human civilization, ushering in a period of dehumanized tyranny and control. Once you get past Kaczynski's casual racism and calls for violent revolution, his writings on digital technology now seem uncomfortably prescient. He predicted super-intelligent machines dictating society, the psychological ill-effects of tech-reliance and the prospect of obscene inequality as an elite of techno-savvies run the world.

The American philosopher John Zerzan is considered the intellectual heavyweight for the anarcho-primitivist movement, whose adherents believe that technology enslaves us. They aren't violent, but boy do they do hate tech. During

the Unabomber's trial, Zerzan became a confidant to Kaczynski, offering support for his ideas while condemning his actions. Zerzan is finding himself invited to speak at many more events, and the magazine he edits has seen a boost in sales. "Something's going on," he tells me – by phone, ironically. "The negative of technology is now taken as a given." I ask if he could predict the emergence of another Unabomber. "I think it's inevitable," he says. "As things get worse, you're not going to stop it any other way," although he adds that he hopes it doesn't involve violence against people.

There are signs that full-blown neo-luddism is already here. In November last year, La Casemate, a tech "fab lab" based in Grenoble, France, was vandalized and burned. The attackers called it "a notoriously harmful institution by its diffusion of digital culture". The previous year, a similar place in Nantes was targeted. Aside from an isolated incident in Mexico in 2011, this is, as far as I can tell, the first case since the Unabomber of an act of violence targeting technology explicitly as technology, rather than just a proxy for some other problem. The French attackers' communique was published by the environmentalist/anarchist journal Earth First! and explained how the internet's promise of liberation for anticapitalists has evaporated amid more surveillance, more control, more capitalism. "Tonight, we burned the Casemate," it concludes. "Tomorrow, it will be something else, and our lives will be too short, in prison or in free air, because everything we hate can burn."

If the recent speculation about jobs and AI is even close to being correct, then fairly soon "luddite" will join far-right and Islamist on the list of government-defined extremisms. Perhaps anti-tech movements will even qualify for the anti-radicalization Prevent program.

No one wants machines smashed or letter bombs. The wreckers failed 200 years ago and will fail again now. But a little luddism in our lives won't hurt. The realization that technological change isn't always beneficial nor inevitable is long overdue, and that doesn't mean jettisoning all the joys associated with modern technology. You're not a fogey for thinking there are times where being disconnected is good for you. You're just not a machine.

https://www.theguardian.com/technology/2018/mar/04/will-2018-be-the-year-of-the-neo-luddite

Assignment 3. Discuss the following issues.

1. What is luddism?
2. Define the characteristic features of this movement.
3. What is the potential impact of this movement on the development of IT?

Assignment 4. Work in pairs. Find out as much as you can about your partner's attitude towards new technologies.

Assignment 5. Prepare for a group debate on the problem of technological upsides and downsides.

Unit 2
CLOUD COMPUTING AND ARTIFICIAL INTELLIGENCE

Text A

Assignment 1. Before reading the text study your active vocabulary.

Cloud computing, on-demand, application, storage, processing power, on a pay-as-you-go basis, cloud service provider, to benefit from, customer, upfront cost, to maintain, workload, artificial intelligence, default option, software, hardware, operating system, vendor, standalone product, to run on, public/private cloud service, to deploy, on-going maintenance costs, middleware, end user, in-house, sensitive data, fraudulent use, unauthorized, malware.

Assignment 2. Read the text and be ready to discuss the questions below.

What is cloud computing? Everything you need to know from public and private cloud to software as a service.

What is cloud computing?

Cloud computing is the delivery of on-demand computing services – from applications to storage and processing power – typically over the internet on a pay-as-you-go basis.

Rather than owning their own computing infrastructure, companies can rent access to anything from applications or servers from a cloud service provider. Providers can benefit from significant economies of scale by providing the same services to a wide range of customers.

One benefit of using cloud computing services is that firms can avoid the upfront cost and complexity of owning and maintaining their own IT infrastructure, and instead simply pay for what they use.

Cloud computing underpins a vast number of services, from consumer offerings like Gmail and Netflix to enterprise workloads, providing the arrays of processors needed for artificial intelligence.

Cloud computing is becoming the default option for many services: software vendors are increasingly offering their applications as services over the internet rather than standalone products as they try to switch to a subscription model. However, there is a potential downside to cloud computing, in that it can also introduce new costs and new risks for companies using it.

Why is it called cloud computing?

A fundamental concept behind cloud computing is that the location of the service, and many of the details such as the hardware or operating system it is running on, are often largely irrelevant to the user (although this is not always the case in practice). It's with this in mind that the metaphor of the cloud was borrowed from old network schematics, in which the public telephone network (and later the internet) was often represented as a cloud to denote that the underlying technologies were irrelevant.

What is the history of cloud computing?

Cloud computing as a term has been around since the early 2000s, but the concept of computing-as-a-service has been around for much, much longer – as far back as the 1960s, when computer bureaus would allow companies to rent time on a mainframe, rather than have to buy one themselves.

These "time-sharing" services were largely overtaken by the rise of the PC, and then the rise of corporate data centers where companies would store vast amounts of data.

But the concept of renting access to computing power has resurfaced a number of times since then – in the application service providers, utility computing, and grid computing of the late 1990s and early 2000s. This was followed by cloud computing, which really took hold with the emergence of software as a service and hyperscale cloud computing providers such as Amazon Web Services.

How big a deal is the cloud?

Building the infrastructure to support cloud computing now accounts for more than a third of all IT spending worldwide, according to research from IDC. Meanwhile spending on traditional, in-house IT continues to slide as computing workloads continue to move to the cloud, whether that is public cloud services offered by vendors or private clouds built by enterprises themselves.

451 Research predicts that around one-third of enterprise IT spending will be on hosting and cloud services this year "indicating a growing reliance on external sources of infrastructure, application, management and security services". Analyst Gartner predicts that half of global enterprises using the cloud now will have gone all-in on it by 2021.

What is Infrastructure-as-a-Service?

Cloud computing can be broken down into three cloud computing models. Infrastructure-as-a-Service (IaaS) refers to the fundamental building blocks of computing that can be rented: physical or virtual servers, storage and networking. This is attractive to companies that want to build applications from the very ground up and want to control nearly all the elements themselves, but it does require firms to have the technical skills to be able to orchestrate services at that level. Research

by Oracle found that two thirds of IaaS users said using online infrastructure makes it easier to innovate, had cut their time to deploy new applications and services and had significantly cut on-going maintenance costs. However, half said IaaS isn't secure enough for most critical data.

What is Platform-as-a-Service?

Platform-as-a-Service (PaaS) is the next layer up – as well as the underlying storage, networking, and virtual servers this will also include the tools and software that developers need to build applications on top of: that could include middleware, database management, operating systems, and development tools.

What is Software-as-a-Service?

Software-as-a-Service (SaaS) is the delivery of applications-as-a-service, probably the version of cloud computing that most people are used to. The underlying hardware and operating system are irrelevant to the end user, who will access the service via a web browser or app; it is often bought on a per-seat or per-user basis.

According to researchers IDC SaaS is – and will remain – the dominant cloud computing model in the medium term, accounting for two-thirds of all public cloud spending in 2017, which will only drop slightly to just under 60 percent in 2021. SaaS spending is made up of applications and system infrastructure software, and IDC said that spending will be dominated by applications purchases, which will make up more than half of all public cloud spending through 2019. Customer relationship management (CRM) applications and enterprise resource management (ERM) applications will account for more than 60 percent of all cloud applications spending through to 2021. The variety of applications delivered via SaaS is huge, from CRM such as Salesforce through to Microsoft's Office 365.

Cloud computing advantages and benefits

The exact benefits will vary according to the type of cloud service being used but, fundamentally, using cloud services means companies not having to buy or maintain their own computing infrastructure.

No more buying servers, updating applications or operating systems, or decommissioning and disposing of hardware or software when it is out of date, as it is all taken care of by the supplier. For commodity applications, such as email, it can make sense to switch to a cloud provider, rather than rely on in-house skills. A company that specializes in running and securing these services is likely to have better skills and more experienced staff than a small business could afford to hire, so cloud services may be able to deliver a more secure and efficient service to end users.

Using cloud services means companies can move faster on projects and test out concepts without lengthy procurement and big upfront costs, because firms only pay for the resources they consume.

For a company with an application that has big peaks in usage, for example that is only used at a particular time of the week or year, it may make financial sense to have it hosted in the cloud, rather than have dedicated hardware and software laying idle for much of the time. Moving to a cloud hosted application for services like email or CRM could remove a burden on internal IT staff, and if such applications don't generate much competitive advantage, there will be little other impact. Moving to a services model also moves spending from CapEx to OpEx, which may be useful for some companies.

Cloud computing disadvantages

Cloud computing is not necessarily cheaper than other forms of computing, just as renting is not always cheaper than buying in the long term. If an application has a regular and predictable requirement for computing services, it may be more economical to provide that service in-house.

Some companies may be reluctant to host sensitive data in a service that is also used by rivals. Also, moving to a SaaS application may mean you are using the same applications as a rival, which may make it hard to create any competitive advantage if that application is core to your business. And of course, you can only access your applications if you have an internet connection.

Is cloud computing more secure?

Certainly, many companies remain concerned about the security of cloud services, although breaches of security are rare. How secure you consider cloud computing to be will largely depend on how secure your existing systems are. In-house systems managed by a team with many other things to worry about are likely to be more leaky than systems monitored by a cloud provider's engineers dedicated to protecting that infrastructure.

However, concerns do remain about security, especially for companies moving their data between many cloud services, which has leading to growth in cloud security tools, which monitor data moving to and from the cloud and between cloud platforms. These tools can identify fraudulent use of data in the cloud, unauthorized downloads, and malware. There is a financial and performance impact however: these tools can reduce the return on investment of the cloud by five to 10 percent, and impact performance by five to 15 percent.

What is public cloud?

Public cloud is the classic cloud computing model, where users can access a large pool of computing power over the internet (whether that is IaaS, PaaS, or SaaS). One of the significant benefits here is the ability to rapidly scale a service. The cloud computing suppliers have vast amounts of computing power, which they share out between a large number of customers – the "multi-tenant" architecture. Their huge scale means they have enough spare capacity that they can easily cope if any particular customer needs more resources, which is why it is often used for less-sensitive applications that demand a varying amount of resources.

What is private cloud?

Private cloud allows organizations to benefit from the some of the advantages of public cloud – but without the concerns about relinquishing control over data and services, because it is tucked away behind the corporate firewall. Companies can control exactly where their data is being held and can build the infrastructure in a way they want – largely for IaaS or PaaS projects – to give developers access to a pool of computing power that scales on-demand without putting security at risk. However, that additional security comes at a cost, as few companies will have the scale of AWS, Microsoft or Google, which means they will not be able to create the same economies of scale. Still, for companies that require additional security, private cloud may be a useful stepping stone, helping them to understand cloud services or rebuild internal applications for the cloud, before shifting them into the public cloud

What is hybrid cloud?

Hybrid cloud is perhaps where everyone is in reality: a bit of this, a bit of that. Some data in the public cloud, some projects in private cloud, multiple vendors and different levels of cloud usage. According to research by TechRepublic, the main reasons for choosing hybrid cloud include disaster recovery planning and the desire to avoid hardware costs when expanding their existing data center.

Is geography irrelevant when it comes to cloud computing?

Actually, it turns out that is where the cloud really does matter. Firstly, there is the issue of latency: if the application is coming from a data center on the other side of the planet, or on the other side of a congested network, then you may find it sluggish compared to a local connection.

Secondly, there is the issue of data sovereignty. Many companies – particularly in Europe – have to worry about where their data is being processed and stored. European companies are worried that, for example, if their customer data is being stored in data centers in the US or (owned by US companies) it could be accessed by US law enforcement. As a result, the big cloud vendors have been building out a regional data center network so that organizations can keep their data in their own region.

In Germany, Microsoft has gone one step further, offering its Azure cloud services from two data centers, which have been set up to make it much harder for US authorities – and others – to demand access to the customer data stored there. The customer data in the data centers is under the control of an independent German company which acts as a “data trustee”, and Microsoft cannot access data at the sites without the permission of customers or the data trustee.

Who are the big cloud vendors?

When it comes to IaaS and PaaS there are really only a few giant cloud providers. Leading the way is Amazon Web Services, and then the following pack of Microsoft’s Azure, Google, IBM, and Alibaba. While the following pack might be growing fast, their combined revenues are still less than those of AWS, according to data from the Synergy Research Group.

Synergy Research Group

Analysts 451 Research said that for many companies the strategy will be to use AWS and one other cloud provider, a policy they describe as AWS + 1.

Cloud computing price wars

The cost of some cloud computing services – particularly virtual machines – has been falling steadily thanks to continued competition between these big players. There is some evidence that the price cuts may spread to other services like storage and databases, as cloud vendors want to win the big workloads that are moving out of enterprise datacenters and into the cloud. That's likely to be good news for customers and prices could still fall further, as there remains a hefty margin in even the most commodity areas of cloud infrastructure services, like provision of virtual machines.

http://www.zdnet.com/article/what-is-cloud-computing-everything-you-need-to-know-from-public-and-private-cloud-to-software-as-a/

Assignment 3. Appoint a chair person who will lead the discussion. His or her task is to present problem questions to communicators, pass the word to speakers and draw conclusion. Communicators are to consider the questions presented to them. The following set of questions will help you.

1. What is cloud computing?
2. Why is it called cloud computing?
3. What is the history of cloud computing?
4. What is Infrastructure-as-a-Service?
5. What is Platform-as-a-Service?
6. What is Software-as-a-Service?
7. What are the advantages of using cloud computing?
8. What are the disadvantages of using cloud computing?
9. Is cloud computing more secure?
10. What is the difference between public cloud and private cloud?
11. What is hybrid cloud?
12. Is geography irrelevant when it comes to cloud computing?

Assignment 4. Work in pairs. Give English equivalents to the following notions.

1. Перегруженная сеть
2. Конфиденциальная информация
3. Доходы
4. Конечный пользователь
5. Опция по умолчанию

Assignment 5. You are participating in a high-tech seminar. You are to report about cloud computing. Present the history of cloud computing and different models of cloud computing.

Text B

Assignment 1. Before reading the text, study your active vocabulary.

Desktop, to download, shared folder, to migrate to the service, on-premises.

Assignment 2. Scan the text on the features Google Drive provide to its users.

Google Drive will let users stream files from the cloud

Google Drive users will be able to see all the files they have stored in the company's cloud service on their desktop without downloading them, thanks to a new feature the company announced Thursday.

The Drive File Stream offering will – as the name implies – show placeholder files on a user's desktop, then download them only when a user needs to look at them. It's similar to Dropbox's Smart Sync feature, which recently entered beta.

Google also made a pair of its key enterprise-focused Drive features generally available on Thursday. Team Drives is a feature that lets administrators create shared folders for groups inside their organizations. Vault for Drive lets companies manage data retention and legal hold policies for content stored in the service.

To help enterprises move to Drive, Google acquired AppBridge, a partner that has helped enterprises migrate to the service. The company offers migration services from sources like SharePoint, Exchange and on-premises file storage.

These moves are aimed at making Google Drive more appealing to customers who might consider another competing enterprise file sync and share service like Dropbox or Microsoft's OneDrive for Business.

Team Drives are important for enterprises, since they give administrators the ability to create shared storage spaces for groups without having one particular user own that space or the files shared within it. That way, if someone on the team leaves, all of their contributions stay with the other people who need them.

The news is part of the company's suite of project announcements at its Google Cloud Next conference in San Francisco. Google also announced major changes to its Hangouts services and cloud price cuts.

http://www.computerworld.com/article/3178702/cloud-storage/google-drive-will-let-users-stream-files-from-the-cloud.html

Assignment 3. Work in pairs. Define the following notions to your partner:

1. Shared folder
2. On-premises
3. To migrate

Assignment 4. Surf the Internet for the information on different cloud storage providers. Make a brief report on your findings. Highlight the features of the following cloud storage services:

1. Google Drive
2. Dropbox
3. Microsoft's OneDrive
4. YandexDisk

Assignment 5. You are in a meeting with your boss who is indecisive whether your company should migrate to the cloud service or not. Present advantages and disadvantages of cloud computing.

Text C

Assignment 1. Before reading the text study your active vocabulary.

Erasure coding, redundancy, authentication, to encrypt, to decrypt, to grant access, with a right-click, privacy-friendly, digitally signed message, high-end, to plug, log-on, privacy-conscious.

Assignment 2. Scan the text and give the Russian equivalent to the words in italics.

Bdrive secures files in the cloud with fingerprints, fragmentation

Bundesdruckerei's Bdrive cloud file storage service uses erasure coding to increase redundancy and security.

Maximum privacy seems to be the goal for the new enterprise authentication and cloud storage services Bundesdruckerei is showing at Cebit this week.

The 250-year-old state printer has moved far beyond its origins as a printer of banknotes and, later, passports, offering all sorts of secure digital authentication services.

At the exhibition in Hanover, Germany, this week it's showing Bdrive, a way for businesses to securely and reliably store important files in the cloud.

Unlike services such as Dropbox, Bdrive doesn't store the files themselves, just metadata about them. The task of storing the files is left to other *public cloud storage services*.

Those services don't have access to the files either, though: Bdrive's Windows client software encrypts the files and fragments them across several storage services, in such a way that no one store holds all the data; It uses erasure coding to reconstruct a file even when some of its fragments are missing, said Bundesdruckerei's Maxim Schnjakin.

Bdrive records which public cloud services are holding which fragments of the file, which user it belongs to, *who has been granted access to it* and on what terms. Customers can choose what level of redundancy they would like in the system, said Schnjakin: They pay a subscription fee to Bundesdruckerei, which then takes care of the storage fees for the various cloud services used.

The company isn't ready to name its storage partners, but Amazon Web Services' Simple Storage Service (S3) is an example of the kind of service it might use.

Access to the files is controlled by client software embedded in Windows 10. Bdrive appears as another location alongside Desktop, Downloads and Documents in the Windows File Explorer, and tasks such as sending download links or sharing access rights are accessed *from a contextual menu with a right-click.*

People invited to download a file receive an email containing a link to it. If a password is required, this must be sent via another secure channel. Clicking on the download link launches some JavaScript from Bdrive, which downloads the necessary file fragments from the various stores, reassembles them and decrypts the file.

For maximum security, control of the Bdrive files is closely tied to an authorized device and to the identity of the file's owner.

To provide stronger security than basic passwords allow, Bundesdruckerei is also showing a privacy-friendly smartcard-based *fingerprint authentication system* called GoID.

One problem with many biometric authentication systems is that they involve central storage and comparison of users' biometric details, *putting them at risk of theft or disclosure*.

Not so with GoID, in which the fingerprints are read, stored and compared entirely on the smartcard. The only information that leaves the card is *a digitally signed message* saying whether the authentication succeeded.

GoID cards are somewhat thicker than a credit card but would still fit in most wallets. They have *a built-in fingerprint reader* like that found in *high-end smartphones* – not the swipe type found on some PCs – and are powered and communicate via an RFID interface. In most cases that will mean *plugging an external reader into a PC's USB port*.

To authenticate, users drop their card on the reader when requested, then place their fingertip on the card. The card also has a built-in numerical keypad for authentication in cases where a fingerprint has not been registered.

Enrollment is performed using the same card and reader: Software on the PC directs the process, but the fingerprint data never leaves the card, said Bundesdruckerei's Eric Stange.

Bundesdruckerei is already using the cards internally and offers them to customers as part of broader identity management and authentication, said Stange. He wouldn't put a price on the cards, saying it depended on the services sold with them.

In addition to Windows log-on and authentication for Bdrive users, the cards can also be used for building access control. Because users' biometric information never leaves the cards, it's much easier to gain the support of trade unions for their use, especially *in privacy-conscious countries* such as Germany, Stange said.

http://www.computerworld.com/article/3182362/cloud-computing/bdrive-secures-files-in-the-cloud-with-fingerprints-fragmentation.html

Assignment 3. Discuss the following questions with your groupmates.

1. What is the main goal of the cloud storage services Bundesdruckerei?
2. What is the main difference of Bdrive from other storage services?
3. How can files be restored when some of its fragments are missing?
4. What information does Bdrive record?
5. How is access to the files controlled?
6. What makes GoID more secure in comparison with other biometric authentication systems?
7. Who might be interested in acquiring smartcards?

Text D

Assignment 1. Before reading the text study your active vocabulary.

Target, to breach, verified, to log in, IP address, end user, security gap, to exploit, to gain access, privileged user.

Assignment 2. Scan the text and specify security problems the cloud environment faces.

Cloud is the ignored dimension of security: Cisco

When it comes to enterprise security, the cloud is the ignored dimension, a report from networking vendor Cisco has found.

According to the Cisco 2017 Midyear Cybersecurity Report, the cloud is a whole new frontier for hackers, and they are increasingly exploring its potential as an attack vector as often cloud systems are "mission-critical" for organizations.

Hackers, the report explains, also recognize that they can infiltrate connected systems faster by breaching cloud systems.

Since the end of 2016, Cisco said it observed an increase in activity targeting cloud systems, with attacks ranging in sophistication.

In January 2017, the company's researchers caught attackers hunting for valid breached corporate identities using brute-force attacks. The hackers were creating a library of verified corporate user credentials, which saw them attempt to log into multiple corporate cloud deployments using servers on 20 suspicious IP addresses, Cisco said.

The report says that open authorization (OAuth) – which allows an end user's account information to be used by third-party services, such as Facebook, without exposing the user's password – is in fact creating risk, in addition to its intended purpose of powering the cloud.

"OAuth risk and poor management of single privileged user accounts create security gaps that adversaries can easily exploit," the report states. "Malicious hackers have already moved to the cloud and are working relentlessly to breach corporate cloud environments."

According to Cisco, some of the largest breaches to date began with the compromise and misuse of a single privileged user account.

"Gaining access to a privileged account can provide hackers with the virtual "keys to the kingdom" and the ability to carry out widespread theft and inflict significant damage," the report explains. "However, most organizations aren't paying enough attention to this risk."

The average enterprise today has more than 1,000 unique apps in its environment and more than 20,000 different installations of those apps.

Cisco said its threat researchers examined 4,410 privileged user accounts at 495 organizations and found that six in every 100 end users per cloud platform have privileged user accounts, with many organizations having an average of two privileged users that carry out most of the administrative tasks.

As part of good practice, Cisco recommends administrators pay close attention to the IP addresses used to log in, with the average two users generally accessing the platform via the same handful of IP addresses.

"Activity outside those normal patterns should be investigated," Cisco said.

Another action Cisco recommends is to have administrators log out once they have completed their required tasks, as open sessions make it easier for unauthorized users to gain access and to do so undetected.

The recent phishing campaign that targeted Gmail users and attempted to abuse the OAuth infrastructure underscored the OAuth security risk, Cisco said.

The bogus Docs app used Google's OAuth implementation to request access to the Gmail accounts of targets. If users granted the app access, it sent the same phishing email to the user's contacts.

Google reported that about 0.1 percent of its 1 billion users were affected by the campaign, with Cisco "conservatively" estimating that more than 300,000 corporations were infected by the worm.

As companies look to expand their use of the cloud, Cisco urges them to understand their role in ensuring cloud security, noting that cloud service providers are responsible for the physical, legal, operational, and infrastructure security of the technology they sell, but businesses are responsible for securing the use of underlying cloud services.

"Applying the same best practices that they use to ensure security in on-premises environments can go a long way toward preventing unauthorized access of cloud systems," Cisco explained.

The company's midyear report covers multiple threat types across many vectors, with Cisco noting its security experts are becoming increasingly concerned about the accelerating pace of change and sophistication in the overall global cyber threat landscape.

Revenue generation is still the top objective of most threat actors, Cisco said, noting however that increasing is the malicious inclination to lock systems and destroy data as part of their attack process – simply because they can.

http://www.zdnet.com/article/cloud-is-the-ignored-dimension-of-security-cisco/

Assignment 3. You are a representative of a cloud storage provider. Your goal is to convince your potential clients to use your services. Concentrate on the security measures that your company would take to secure your client's data.

Text E

Assignment 1. Before reading the text study your active vocabulary.

To hit the market, subtlety, to upload, to navigate.

Assignment 2. Read the text about companion robots. Do you agree with the author?

Companion robots are here. Just don't fall in love with them.

"Hey, Kuri," I say. "I love you."

Pause. I brace for rejection, but then the robot lets out a balooop and shimmies back and forth. This, I am to presume, means Kuri loves me too.

Interacting with Kuri, a robot set to hit the market in December, is at once fascinating, delightful, and puzzling. Kuri's creators call it a "companion robot," but this is no Furby. Kuri belongs to a new class of machines that actually are intelligent, and actually make useful assistants at home. You can see them out in the wild, helping disabled people with routine daily tasks. Soon they'll remind the elderly to take their medication. Kuri's more of an all-purpose companion, a member of your family that also happens to play music and take video.

But the vanguard of increasingly intelligent machines invites questions about how people should interact with them. How do we build relationships with what is essentially a new kind of being? How do roboticists make it clear to people that the bond they form with a machine will never be as robust as a bond with a human? And how does the system keep bad actors from exploiting these bonds to, say, use these robot companions to squeeze money out of the elderly?

All big questions that society must start talking about, and now. Sure, no robot is in danger of forming a complex bond with its owner – not even Kuri. The technology just isn't there yet. But the arrival of Kuri and other companion robots means that in the near future, you'll need to pay very close attention to how robots make you feel. I mean, I just declared my love for one, for Pete's sake.

Welcome to the Machines

For a robot without arms, Kuri's got a lot going for it. You can teach it the layout of your house, then send it to the kitchen or living room to check on the kids. It can navigate bumps with surprising ease. It can play music on command. Using machine vision, it can recognize different members of the family, including pets, and automatically shoot video (a feature known as Kuri Vision). And if you suspect the dog is up on the couch again while you're at work, you can remote-control Kuri to yell at it.

The really interesting bits about Kuri, though, are its subtleties, particularly when it comes to its interactions with humans. "It's the little things," says Mike Beebe, CEO of Mayfield Robotics, Kuri's maker. "Sometimes like she blinks, and she'll look around, or when she's about to turn she'll look first and then she'll turn. Doing that lets you understand what's kind of going on inside of Kuri."

Since Kuri can't speak – at least, not in what we'd identify as a human language – it communicates with clever cues. A beep means yes and a bloop means no, like a simplified version of whatever the hell R2-D2 speaks. This was an important consideration for Kuri's designers, because if you want people to get along with companion robots, you have to set expectations for how much they can understand or do. "When something speaks back to you in fluent natural language, you expect at least a child's level of intelligence," Beebe says. "That's a really wonderful thing, if it were possible. But right now, robotics just isn't there yet. So, setting that expectation right keeps it more understandable."

“She helps you have meaningful relationships between your loved ones through her, but not with her.” – Dor Skuler, CEO of Intuition Robotics

Another companion bot in development, ElliQ, approaches the challenges of human-robot interaction a bit differently. This desktop robot looks vaguely humanoid, with a big noggin that tilts and swivels as it speaks English. It’s meant for the elderly, periodically calling out to remind them to get some exercise or take their meds.

ElliQ works in concert with a tablet to both relay information and express it. If one of your relatives uploads a photo to Facebook, ElliQ will bring it up on the tablet, then turn toward the screen while speaking, in a way gesturing without hands. “We found that the separation between the content on the screen and the entity allows us to do a lot of interactions,” says Dor Skuler, CEO of Intuition Robotics, which developed ElliQ. “We also looked for an aesthetic which (a) we think is beautiful and (b) we think is not intimidating and allows us to earn a right at the home.”

Like Kuri, ElliQ must implicitly set expectations about what it can – and can’t – do. These things don’t have agency and they certainly don’t have consciousness, but the human brain tends to project such things onto robots, especially adorable humanoid ones.

So, makers of companion robots want users to have pleasant interactions and make it abundantly clear that robots are tools, not replacements for friends or family. “We’re trying to create an experience that’s more engaging,” Skuler says, “but I think setting the right expectations, that essentially she’s a connector between people. She helps you have meaningful relationships between your loved ones through her, but not with her.”

Our Robots, Ourselves

One day, though, super-sophisticated robots will form complex bonds with humans. Take it from me: I told a robot I loved it. And that’s where the ethics of companion robots get sticky.

Our relationship to robots is wholly different than the relationship we have with, say, our pets. Pets can at least demonstrate nonverbally that they appreciate you by licking your face or bringing you dead animals. (Or, in the case of cats, how eternally indifferent they usually are to you.) But robots? Kuri can’t tell me it loves me back, because Kuri cannot love. It cannot even feel.

These limitations are easy enough for most people to understand now. But as AI gets smarter and smarter, it will be easier to trick people – especially children and the elderly – into thinking the relationship is reciprocal. And such a bond is a powerful thing. Imagine an unscrupulous toy maker inventing a doll so sophisticated that it appears animate to a kid. Now imagine the toy maker exploiting that bond by having the doll tell the kid to buy a personality upgrade for $50.

For the elderly, the target market for some of these new robots, matters will grow all the more complicated. Pretty soon, robots may help them dress or lift them out of bed. “When you’re limited in what you can do yourself and you start relying on the robot, it will lead to a sort of gratitude that then transfers into some sort of attachment relationship,” says Matthias Scheutz, director of the Human-Robot Interaction Laboratory at Tufts. “We see that actually even with simple robots like the Roombas, already, that people become somehow attached to these robots.” DJ Roomba, for instance.

Physically assisting the elderly also introduces an extremely powerful phenomenon: touch. Robots touching humans sounds weird and, well, metallic. Not for much longer, as robots get gentler and literally softer. “They could amplify and further the development of these bonds simply because touch is something very intimate to people, and you might not want that,” Scheutz says. “You might not want the person to build this funny unidirectional relationship with the robot, because the robot cannot reciprocate it.”

Are robots there yet? Absolutely not. But Kuri and ElliQ are your first glimpse at a future where you inevitably form bonds with adorable machines. There’s nothing wrong with that – at least, not yet. But if we don’t manage our expectations, we’re in for heartbreak.

https://www.wired.com/story/companion-robots-are-here/

Assignment 3. You are to persuade your grandparents to acquire a smart assistant at home. Describe possible advantages and disadvantages of smart assistants.

Assignment 4. Prepare for a group debate on the problem of necessity of robot companions for the society. When discussing contemplate on the following issues: “Do we need robot companions in our life? What prevails: harm or benefit?”.

Text F

Assignment 1. Before reading the text study your active vocabulary.

Machine learning, chatbot, feedback, distortion, reinforcement learning.

Assignment 2. Read the text about Facebook AI researchers and find out the reason of their anxiety.

No, Facebook’s chatbots will not take over the world

The notion of machines rising up against their creators is a common theme in culture and in breathless news coverage. That helps explain the lurid headlines in recent days describing how Facebook AI researchers in a “panic“ were “forced“ to “kill“ their “creepy“ bots that had started speaking in their own language.

That’s not quite what happened. A Facebook experiment did produce simple bots that chattered in garbled sentences, but they weren’t alarming, surprising, or very intelligent. Nobody at the social network’s AI lab panicked, and you shouldn’t either. But the errant media coverage may not bode well for our future. As machine learning and artificial intelligence become more pervasive and influential, it’s crucial to understand the potential and the reality of these technologies. That’s particularly true as algorithms come to play a central role in war, criminal justice, and labor markets.

Here’s what really happened in Facebook’s AI research lab. Researchers set out to make chatbots that could negotiate with people. Their thinking: Negotiation and cooperation will be necessary for bots to work more closely with humans. They started small, with a simple game in which two players were told to divide a collection of objects, such as hats, balls, and books, between themselves.

The team taught their bots to play this game using a two-step program. First, they fed the computers dialog from thousands of games between humans to give the system a sense of the language of negotiation. Then they allowed bots to use trial and error – in the form of a technique called reinforcement learning, which helped Google’s Go bot AlphaGo defeat champion players – to hone their tactics.

When two bots using reinforcement learning played each other, they stopped using recognizable sentences. Or, as Facebook’s researchers drily describe it in their technical paper, “We found that updating the parameters of both agents led to divergence from human language.” One memorable exchange went like this:

Bob: i can i i everything else . . . . . .

Alice: balls have zero to me to me to me to me to me to me to me to

Such weird banter sometimes produced successful negotiations, apparently because the bots learned to use tricks such as repetition to communicate their wants. Kinda interesting – but also a failure. Facebook’s researchers hoped to make bots that could play with humans, so they redesigned their training scheme to ensure they kept using recognizable language. That change spawned the fear-mongering headlines about researchers having to shut down the experiment.

But wait, you ask, channeling Tuesday’s front-page splash from British tabloid The Sun. Doesn’t this Facebook incident have echoes of The Terminator, in which an AI system with self-awareness wages a devastating war against humans?

No. Facebook’s simple bots were designed to do only one thing: score as many points as possible in the simple game. And that’s exactly what they did. Because they weren’t programmed to stick with recognizable English, it’s not surprising that they didn’t.

This is far from the first time AI researchers have created bots that improvise their own ways to communicate. In March, WIRED reported on experiments at Elon Musk-backed nonprofit OpenAI with bots that develop their own simple

"language" in a virtual world. Facebook researcher Dhruv Batra said on Monday, in a post lamenting the media distortion of his work, that examples in computer science literature go back decades.

Instead of a scary story, Facebook's experiment actually demonstrates the limitations of today's AI. The blind literalness of current machine learning systems constrains their usefulness and power. Unless you can find a way to program in exactly what you want, you may not get it. It's why some researchers are working toward using human feedback, instead of just code, to define AI systems' goals.

What were the most interesting parts of Facebook's experiment? Once the bots started speaking English, they did prove capable of negotiating with humans. That's not bad, since – as you may know from talking with Siri or Alexa – computers aren't very good at back-and-forth conversation.

Machine learning research is fascinating, full of potential, and changing our world. The Terminator remains fiction.

https://www.wired.com/story/facebooks-chatbots-will-not-take-over-the-world/

Assignment 3. Work in pairs. Paraphrase using words and expressions from the text.

1. Discussion
2. Improve
3. Empirically
4. Decisive
5. Response

Assignment 4. Contemplate on the power of AI and its role in the society. Do you believe that the Terminator will remain fiction?

Text G

Assignment 1. Before reading the text study your active vocabulary.

Mobile app, to take the limelight, to block offensive content, to tap on the screen, to move to the background, to handle a task.

Assignment 2. Read the text on the implementation of AI in mobile apps. Be ready to discuss it.

AI and mobile apps: What really matters

More apps use AI to do things for us, such block and remove offensive posts on Instagram. Soon AI will take the limelight, and the apps will move the background.

The best AI stays out of the way.

You don't notice it is even working. The car swerves slightly to avoid moving out of a lane, and you keep listening to Nirvana classics. Your email app blocks annoying messages that are not technically spam but sent by people who have no right invading your inbox. At home, your garage doors close silently at 10pm on the dime. You keep watching a baseball game and eating a burger.

Now, you can add this to the list: a mobile app is blocking offensive content.

Instagram announced today they are using AI to stop, block and remove offensive posts before you ever see them. You keep scanning through wedding photos from last weekend. It's a technology Facebook (which owns Instagram) has started using, as well.

For any mobile app, we're now living in the age of AI, and we'll slowly start to see more and more uses of technology that can help us – and stay out of the way.

Instagram isn't looking for just keywords, similar to Twitter. There's an algorithm that knows the context and which phrases and words are meant to cause harm.

In 2017 and beyond, that will be the true differentiator with AI. It means nothing to the average user if a bot can talk like a human or order pretzels for you. It will mean everything if they barely know the app is using AI – that they see improvements in their everyday lives. It means everything if the pretzels *just arrive*.

How AI in apps makes our lives easier

Here's an example. I once tested the Vivint app and kept using it to control the lights in my house and adjust the thermostat. This year, I've started relying on the AI in the app (and not even using the app at all) that knows when I'm not home. I don't think that much about Vivint; I don't bother adjusting the dial. The app has suddenly become something I use when I want finer control or to adjust the settings.

Thinking about how this works in Instagram, I don't need to delete comments or block people. I'm not typing as much. I focus more on crafting a new post and flicking through the feeds of my friends. AI will mean we use our phones less, not more.

In an enterprise setting, it means apps will be useful for customization and communication, but we'll let the machine learning handle mundane tasks such as replying to an email from the boss or dealing with a routine server pin.

The great nirvana state for apps is that we use them less – or not at all. The constant hunting around for multiple apps, tapping on the screen constantly – that's going to go away soon. In many ways, in my daily routine, I'm already tapping a lot less. Some of the apps I use, such as Vivint, are doing some of the heavy lifting in the background. I'm expecting more of my favorite apps, such as Sprout Social, to follow suit. (They've already added Twitter bots for pro users.)

http://www.computerworld.com/article/3204906/mobile-wireless/here-s-what-really-matters-when-it-comes-to-ai-and-mobile-apps.html

Assignment 3. Work in pairs. Find a synonym to the following words from the text.

1. Scrutinize
2. Pitter-patter
3. Glance
4. Regulate

Assignment 4. Split into groups of 4. Discuss the role of AI in mobile apps. Do you agree with the author that someday apps will move to the background and AI will take the limelight? Share your ideas with other groupmates.

Text H

Assignment 1. Before reading the text study your active vocabulary.

Image search service, speech-recognition service, short-term memory, in one go, to digitize.

Assignment 2. Read the text on the implementation of AI in mobile apps. Be ready to discuss it.

What Ray Kurzweil up to at Google? Writing your emails

Ray Kurzweil has invented a few things in his time. In his teens, he built a computer that composed classical music, which won him an audience with President Lyndon B. Johnson. In his 20s, he pioneered software that could digitize printed text, and in his 30s he cofounded a synthesizer company with Stevie Wonder. More recently, he's known for popularizing the idea of the singularity – a moment sometime in the future when super intelligent machines transform humanity – and making optimistic predictions about immortality. For now, though, Kurzweil, 69, leads a team of about 35 people at Google whose code helps you write emails.

His group powers Smart Reply, the feature on the Gmail mobile app that offers three suggested email replies for you to select with a tap. In May it rolled out to all of the service's English-speaking users, and last week was presented to Spanish speakers too. The responses may be short – "Let's do Monday" "Yay! Awesome!" "La semana que viene" – but they sure can be useful. (A tip: You can edit them before sending.) "It's a good example of artificial intelligence working hand in glove with human intelligence," Kurzweil says.

And Kurzweil claims he's just getting started. His team is experimenting with empowering Smart Reply to elaborate on its initial terse suggestions. Tapping a Continue button might cause "Sure I'd love to come to your party!" to expand to include, for example, "Can I bring something?" He likes the idea of having AI pitch in anytime you're typing, a bit like an omnipresent, smarter version of Google's search autocomplete. "You could have similar technology to help you compose documents or emails by giving you suggestions of how to complete your sentence," Kurzweil says.

Looking further ahead – as Kurzweil likes to do – all those ideas are eventually supposed to seem rather small. Smart Reply, he says, is just the first visible part of the group's main project: a system for understanding the meaning of language. Codenamed Kona, the effort is aiming for nothing less than creating software as linguistically fluent as you or me. "I would not say it's at human levels, but I think we'll get there," he says. Should you believe him? It depends on whether you believe Kurzweil has cracked the mystery of how human intelligence works.

Like Minds?

Google cofounder Larry Page oversaw some surprising initiatives during his second stint as the company's CEO, from 2011 to 2013, including a robot acquisition spree, a new division to cure aging, and the ill-fated Google Barge. Hiring Ray Kurzweil in 2012 arguably ranks among those head-scratchers.

The company already employed some of the most influential thinkers in machine learning and AI, and was rapidly expanding its roster of engineers building machine learning systems to power new products. Kurzweil was known for selling books predicting a weird future in which you'll upload your consciousness into cyberspace, not for building AI systems for research or useful work today.

The way Kurzweil tells it, it was one of those books that got him in the door of the Googleplex. Page called him in to talk about ideas in the soon-to-be-published "How to Create a Mind". The 2012 book lays out Kurzweil's theory of the workings of the neocortex, the outer part of our brain and the seat of human intelligence. "He basically recruited me to bring this thesis to Google," Kurzweil says. "I made the case that applying this model to machine learning would make it very good at understanding language."

Kurzweil's thesis is that the neocortex is built from many repeating units, each capable of recognizing patterns in information and stacked into a hierarchical structure. This, he says, allows many not-so-smart modules to collectively display the powers of abstraction and reasoning that distinguish human intelligence.

The model has yet to win universal acceptance among people who study the human brain. When cognitive science professor Gary Marcus reviewed How

to Create a Mind, he found the theory simultaneously unoriginal and light on empirical backing. Kurzweil, who says his book distills ideas about the brain that he has been developing since the age of 14, has a different view. “There’s really been an explosion of neuroscience evidence to support my thesis,” he says. He describes his hierarchical theory of intelligence as the guiding principle behind his group’s Kona system, and says it’s at work in Smart Reply.

Starting Over

Although their code powers it today, Kurzweil’s group didn’t invent Smart Reply. It was first built by engineers and researchers from the Gmail product team and the Google Brain AI research lab.

They showed that artificial neural networks, which had revamped Google’s image search and speech-recognition services, could also respond to emails if given enough examples to learn from. In late 2015 the system was added to Inbox, Google’s alternative mobile Gmail client. About six months later, Smart Reply was being used for 10 percent of all emails sent with the Inbox app.

Kurzweil’s group got involved to help roll Smart Reply out to everybody using the regular, and much more popular, Gmail app. Google has a lot of computers but still has to pay electricity bills, and the original Smart Reply needed a lot of computing power. It used a type of neural network with a kind of short-term memory, giving it an awareness of the order in which words occur. The technology is good at understanding the meaning of sentences – it’s at work in Google Translate – but it takes a lot of computational effort.

The Kurzweil-ized Smart Reply uses neural networks too, but they are unconcerned with the order of words, and thus are much cheaper to run. It crunches the words in an email’s body or subject line into numbers, all in one go. And it has multiple neural networks stacked into a two-layer hierarchy. The bottom level digests text from emails and the top layer synthesizes the results to select the most appropriate replies from a list of 29,000 prewritten options, generated by analyzing the most common phrases written by Gmail users. In a paper released in May, Kurzweil and his colleagues reported that their system offers replies just as popular with users for a fraction of the computational work.

Much to Prove

Smart Reply may be impressive, but Kurzweil’s team still has miles to go before it can prove their ideas really make software much better at understanding language.

Yoav Goldberg, who researches natural language processing at Bar Ilan University in Tel Aviv, says Google’s paper on the new Smart Reply system describes a solid piece of engineering rather than a scientific breakthrough. It’s the kind of thing a company like Google needs to do day in, day out, if it’s to make good on its ambition to deploy machine learning everywhere. “For most problems, what we need is a well-engineered solution using established techniques and not a novel breakthrough approach,” Goldberg says.

Meanwhile, Kurzweil is calmly, monotonously confident of being proven right. “It’s not using the same mathematics, but it’s the same concept I believe makes the neocortex work,” he says. “And it does capture the meaning of language based on our tests.” More applications of Kona are in the works and will surface in future Google products, he promises. And when asked to look further ahead, he casually tosses out a provocative prognostication. “My consistent prediction, going back a couple of decades, has been that in 2029 computers will understand language at human levels,” he says. If it comes to that, Kurzweil’s code will be doing a lot more than just writing emails.

https://www.wired.com/story/what-is-ray-kurzweil-up-to-at-google-writing-your-emails/

Assignment 3. Three of you act as augers working for Google. You have been invited to a press conference where journalists will ask you questions on the working principles of Smart Reply.

Assignment 4. Search in the Internet for interesting facts of AI implementation for speech recognition. Make a presentation on the problem: “Is it possible for computers to understand language at human levels?”.

Text I

Assignment 1. Before reading the text study your active vocabulary.

Lie detection, to gauge, to detect, fraud, accurate, to go mainstream, target.

Assignment 2. Read the text on the implementation of AI in lie detection. Give the Russian equivalent to the words in italics.

Will augmented reality make lying obsolete?
Honestly, the biggest culture-changing application for augmented reality will be always-on lie detection

I’m putting the liars on notice.

The most underappreciated application for the combination of augmented reality (A.R.) and artificial intelligence (A.I.) is persistent lie detection.

Smartphones and smart glasses will soon support apps that show you in real time whether the person you’re talking to is telling the truth or lying. Imagine how that will affect business meetings, sales presentations, job interviews and department status updates. Not to mention political speech.

Old-fashioned lie detectors, called polygraphs, track blood pressure, breathing and other physiological metrics to gauge stress levels during questioning. The administrator of a polygraph asks questions to determine a baseline response, then watches for signs of stress with additional questioning.

Polygraphs are unreliable and controversial. They have to be administered by an expert using expensive equipment in a controlled environment. Even then, *the results are not admissible as evidence in court in the U.S. and the U.K.*

But the future of lie detection is A.I.

A.I. can take various "signals," such as eye movements, facial gestures, body movements, voice intonations and others, to estimate the truthfulness of a person's statements.

In fact, lie detection is just one of the many uses for emotion or mood detection generally. When A.I. can tell when a person is happy or sad or mad or stressed, it can generally detect changes during conversation and figure out that some of those changes are caused by lie-induced mental activity or stress.

Because lie-detection A.I. is currently being developed by numerous companies, universities and governments, *it's inevitable that the capability will become available broadly and inexpensively to businesses and consumers over the next two years*.

In fact, lie-detection A.I. is already on the market

A U.K. company called Human created technology that detects the emotional state of people in smartphone and security videos. *The company claims that its technology can benefit business in a variety of ways, from hiring to fraud detection to customer satisfaction analysis*. It also says Human technology can profile potential customers based on their personality, as analyzed by A.I.

A Utah-based company called Converus makes a product called EyeDetect, which *monitors pupil dilation in the human eye to detect truths and lies*. (Pupils often dilate when a person is lying because lying uses more mental energy than telling the truth.) EyeDetect is already in use for hiring and bank fraud, as well as by police departments as an alternative to the polygraph.

Governments are working on lie-detection A.I. as well

Remember when the airlines used to ask if you had packed your own bags and if anyone had asked you to pack anything for them? Even now, customs agents worldwide ask you about the purpose of your travel and what you're carrying with you. These questions are useless security theater because people can lie. But what if people couldn't lie? What if everyone who worked at the airport could ask you any question and know instantly if your answer was true or not?

Researchers at the National Center for Border Security and Immigration at the University of Arizona and the U.S. Department of Homeland Security are testing something called the Automated Virtual Agent for Truth Assessments in Real Time (AVATAR). It's like an ATM where a virtual agent asks security questions, then alerts human agents when the kiosk detects lying. The system detects lying by looking for changes in the traveler's posture, eyes, voice or other behavior that could indicate dishonesty.

These nascent efforts are different from what's coming soon.

First, *today's lie-detection A.I. is less accurate than what will be possible down the road*. EyeDetect, for example, is accurate 86 % of the time. That's far better than a human – even better than a human expert, such as a police detective. Still, within a couple of years, lie-detection accuracy will rise above 90 %, and then keep creeping toward the high 90s.

Second, these products aren't yet well-known and widely available. Most business buyers haven't purchased or even read about them. Soon, however, *mainstream, cloud-based lie-detection A.I. applications will come out on the market*, many targeted at business for use in hiring, fraud protection and other uses. A.I. lie detection will increasingly become a feature, rather than a product – something that's built into business software or video products.

Third, today's lie detection comes mainly in the form of expensive products and requires training. The future of lie-detection products will be in apps for smartphones, desktops and – the Holy Grail of lie-detection ubiquity – smart glasses.

Today, lie detection happens in specific, limited scenarios, including job interviews, crime investigations and airport security. In each of these situations, subjects know they're being tested, and the detection lasts only for a brief, specific conversation.

In the future, smart glasses will go mainstream, and lie-detection apps will be widely available and usable without training or expertise. *Your glasses will simply alert you when others are lying or telling the truth*, perhaps with something as simple as colors – a red light means a lie.

A.I. will excel in so-called passive lie detection, where the subject isn't hooked up to any equipment. And because it's passive, it can be undetected. For example, lie detection connected to smart glasses – or to a videoconferencing system, for that matter – can take place without anyone but the user knowing about it.

Over time, it will become reasonable to assume that lie-detection A.I. is being applied during common business scenarios such as job interviews, conference calls and sales presentations.

https://www.computerworld.com/article/3243049/artificial-intelligence/will-augmented-reality-make-lying-obsolete.html

Assignment 3. You work as a journalist who is currently working on the article and investigating the examples of AI implementation in our life. Will your article be focused on the harm or benefit of AI implementation?

Assignment 4. Find web information on various spheres of AI implementation that may interest your groupmates (e.g. finance and banking/retail and etail/higher education/energy and utilities/medicine/others). Make a vivid presentation of it.

Unit 3
THE INTERNET

Text A

Assignment 1. Before reading the text study your active vocabulary.

Social media driven society, internet meme, to explode in popularity, to take the world by storm, to share on social media, impact, longevity.

Assignment 2. Scan the text on social media. Note the reasons why people share on social media.

The maths behind the memes: Why we share on social media

In today's social media driven society, an internet meme or online trend can explode in popularity overnight. (Remember the Ice Bucket challenge?) But why do some online trends take the world by storm before disappearing just as quickly as they arrive, and why do we share them?

Americans love social media, and they post constantly. But *what* actually motivates them to post, and can we predict what will make them post?

Visual content solutions provider Olapic has published a survey that evaluates the motivational and emotional responses that drive Americans to share on social media. It looked at more than 1,000 respondents – aged 16 to over 60.

The results show that emotions drive social posting more than bragging rights do. Half of us post to communicate our emotions, sharing how we feel, what we think, or what we have been doing.

Forty percent of Americans (aged from 16 to 44) post so their friends will interact with them on their social media profiles.

Women are much more likely (41 percent) than men (28 percent) to post to be supportive of friends or connections. Women are also more likely to post to feel connected with people (38 percent) than men (30 percent).

Men are more likely to post to make others feel jealous (8 percent) than women (5 percent).

About 20 percent of young Americans (ages 16 to 29) share visual content from brands multiple times a day, compared to about 10 percent of older generations.

This behavior shows that most Americans post for emotional validation. They post because they think people will find it interesting (with 16 to 29-year olds leading the charge on posting for that reason).

Most people do not post with the intention of showing off a lifestyle (only 13 percent do), influencing other's opinion of them (9 percent), or to show off or make friends jealous (only 7 percent)

The 16 to 29-year-old age group is still more likely than any other age group to post to show off or make others jealous (16 percent do this). Males in general are slightly more likely to do this (8 percent) than females (5 percent).

We share memes and fun stuff. But what meme will take off and go viral, and which will stay popular for a long time?

From "planking" and "cat beards" to and "the lying down game", researchers at The University of Manchester's School of Mathematics in the UK looked at 26 different internet memes and trends.

With data analysis company Spectra Analytics, they measured impact and longevity and then collated the data for analysis.

The team identified and tested a mathematical model that accurately demonstrates why some fads will take off, and it predicts how long the fad will last.

To test the model's predictive capabilities, Dr. Thomas House and Dr. Dan Sprague, the study's authors, applied it to one of 2014's biggest global social media trends: the Ice Bucket Challenge. The model predicted the impact and duration of the challenge with 95-percent accuracy.

"Complex contagion" is the model that best describes the spread of behaviors driven by online sharing, according to Dr. House, the study's senior author.

Complex contagion is not a new concept. Dr. House and Dr. Sprague used mathematics and data analysis to describe the complex contagion theory, and to provide empirical evidence for its action across society.

Dr. House explained: "Social influence can lead to behavioral 'fads' that are briefly popular but then quickly die out. Various theories and models have been proposed to explain such behaviors, but empirical evidence of their accuracy as real-world predictive tools has been absent so far."

This theory provides evidence to explain why trends take off, but it could also be used predict the next online fad.

That makes it extremely useful for people working in professions such as advertising and marketing, and it could also change the way public health and safety campaigns are disseminated to the general public.

Dr. House said: "Complex contagion has predictive power. The fast spread and longer duration of fads driven by complex contagion has important implications for activities such as publicity campaigns and charity drives."

"If we can predict and control what messages go viral, that is a very powerful tool."

Predicting and controlling viral messages is the nirvana of sharing – especially for the marketing team.

http://www.zdnet.com/article/the-maths-behind-the-memes-why-we-share-on-social-media/

Assignment 3. Work in pairs. Define the following notions to your partner.

1. Meme
2. Complex contagion
3. Fad

Assignment 4. Work in pairs. Give the English equivalent to the following words.

1. Воздействие
2. Подтверждение
3. Завоевать мир в одночасье
4. Молниеносно разноситься
5. Широкая публика

Assignment 5. Conduct a survey among your friends to find out why they share on social media.

Assignment 6. Split into groups of 3. Provide your favorite examples of Internet memes and posts.

Text B

Assignment 1. Before reading the text study your active vocabulary.

Metadata, to build public awareness, to generate insight, tag, targeted and customized offers.

Assignment 2. Scan the text on metadata. Give the gist of it.

The value of metadata – the most Instagrammed tourist attractions globally

Once upon a time, the concept of metadata was a foreign one. Today it enables and empowers almost everything.

Edward Snowden's revelations about federal interception of private electronic transmissions started to build public awareness about the concept of "metadata." The simple concept suddenly has people thinking about the data relating to the data they are generating and sharing – and the insights that could be gleaned from that.

A few weeks ago, I received an email from online travel company TravelBird asking me whether I was interested in a report detailing some metadata analysis they had done on Instagram posts. The pitch intrigued me for a few reasons: first,

I'm interested in the insights that data can generate. Second, I'm a huge proponent of travel and traveling experiences as life-changing events. Third, I'm a big fan of using Instagram to document my travels, running and nature experiences.

TravelBird released a study which ranks 470 popular global attractions and measures their relative Instagram coverage. An analysis of Instagram tags helped TravelBird generate this report. It is, of course, valuable to the travel industry which can use it for developing offerings and the like. TravelBird analyzed popular attractions in 10 different counties and created a master ranking comparing 400 of the world's most popular tourist destinations based on their Instagram presence.

"This study offers a compelling overview of hundreds of destinations that are beloved by Instagram users for their cultural heritage, their stunning natural beauty and their local charm," states Symen Jansma, Founder of TravelBird. "Alongside this, the data also tells a fascinating story about the ways people are traveling in 2017, offering valuable insights for the travel and tourism industry."

And the results? The list of 15 is below, but, spoiler alert, perhaps unsurprisingly man-made locations take out the top three slots, with Disneyland, the Eiffel Tower and Walt Disney World sharing the podium. Happily, at least for this nature lover, some natural attractions make the top 15 including Florida's South Beach, Niagara Falls and the Grand Canyon.

While interesting for its own sake, this report is yet another example of just how much can be gleaned from metadata. Now all TravelBird needs to do is cross-reference those results to the different itineraries that people use on their travels, the sort of accommodation they stay at and the meals they eat. From all of that, they can create some targeted and customized offers. And we thought that all we were doing was sharing photos…

http://www.computerworld.com/article/3195069/social-media/the-value-of-metadata-the-most-instagrammed-tourist-attractions-globally.html

Assignment 3. Dwell on the idea of metadata. Clarify the notion of metadata. Identify the reasons why people need it.

Assignment 4. Working in pairs, carry out an investigation on features typical for different social media. What metadata did you use? Present your results to your groupmates.

Text C

Assignment 1. Before reading the text study your active vocabulary.

To censor content, to livestream, moderator, internal guidelines, credible threat, graphic violence, child abuse, to create awareness, hidden from minors, self-harm affliction, newsworthy.

Assignment 2. Read the text on Facebook documents regulating its content. Give the Russian equivalent to the fragments in italics.

Leak: Secret Facebook rules on what violence, self-harm and child abuse can be posted

Internal Facebook documents advising moderators on what content is to be censored or allowed has leaked.

Facebook allows users to livestream self-harm, post videos of violent deaths and photos of non-sexual child abuse, but comments which threaten to harm President Donald Trump are to be deleted, according to Facebook's secret rule books for monitoring what its 2 billion users can post.

The Guardian got hold of leaked copies of over 100 internal Facebook manuals and documents that tell moderators how to handle content which includes violence, sex, hate speech, terrorism, nudity, self-harm, revenge porn and more controversial content – even cannibalism.

The giant social network has increasingly come under fire for how it handles disturbing content and for depending too heavily on users to report such content. At the beginning of May, Facebook CEO Mark Zuckerberg announced the company would hire 3,000 more people – on top of the 4,500 moderators it had – "to review the millions of reports we get every week."

The leaked internal guidelines were given to Facebook moderators "within the last year," the Guardian said. The documents show the fine line Facebook teeters on when deciding what content to censor without being accused of squashing free speech.

10 seconds – that's about how long Facebook moderators have to decide if content should be removed, according to the Guardian. The internal manuals for moderators give examples of what to censor *when it comes to graphic violence, animal abuse, credible threats of violence, non-sexual child abuse and more.*

Credible threats of violence

Leaked documents show that *the following call for violent action is allow*ed: "To snap a b*tch's neck, make sure to apply all your pressure to the middle of her throat." But commenting "Someone shoot Trump" is not and should be deleted since he is a head of state.

Self-harm

Facebook, which purportedly has received over 5,000 reports of potential self-harm in a two-week period, says *it is OK for users to livestream attempts to self-harm.* According to an internal policy update, moderators were told: "We're now seeing more video content – including suicides – shared on Facebook. We don't want to censor or punish people in distress who are attempting suicide."

However, Facebook will try to get other agencies to do a "welfare check" when a person is attempting suicide. Once there is no chance of helping that person anymore, the video is removed.

Graphic violence

Videos of violent deaths *help create awareness*, Facebook believes. *The footage should be marked as disturbing and "hidden from minors,"* but not automatically deleted since the videos can "be valuable in creating awareness for self-harm afflictions and mental illness or war crimes and other important issues."

Images of animal abuse are allowed for awareness purposes, but "extremely disturbing" photos of animal mutilations and videos of torturing animals are to be marked as disturbing. If the violence against animals is sadistic or celebratory, then it is not allowed and is deleted.

Child abuse

Facebook allows videos of child abuse to be posted, as long as it is non-sexual and marked as "disturbing." Videos or photos of child abuse which are shared with sadism and celebration are removed. Imagery of child abuse is allowed unless the child is naked.

Nudity

Nudity is allowed *if it is a "newsworthy exceptions"* or if it is "handmade art." Digitally created art showing sexual activity as well as revenge porn are not allowed. Facebook also allows videos of abortions as long as there is no nudity in the footage.

Facebook won't confirm if the documents obtained by the Guardian are authentic, but Facebook released the following statement:

Keeping people on Facebook safe is the most important thing we do. In addition to investing in more people, we're also building better tools to keep our community safe. We're going to make it simpler to report problems to us, faster for our reviewers to determine which posts violate our standards and easier for them to contact law enforcement if someone needs help.

http://www.computerworld.com/article/3197551/internet/leak-secret-facebook-rules-on-what-violence-self-harm-and-child-abuse-can-be-posted.html

Assignment 3. Break into 2 groups. One person in each group will chair the session. The chairperson is to introduce the speakers, encourage questions and discussion, and sum up the results. Speakers take turns to present their speeches. While listening to them, participants should think over their questions and comments. Contemplate on the problem of social networks: is it a curse or a blessing?

Text D

Assignment 1. Before reading the text study your active vocabulary.

No-filter attitude, to post, implication, to ask questions in an open format, to edit, to set privacy settings, tweet.

Assignment 2. Scan the text on Twitter. Be ready to discuss it.

Does Twitter encourage a "no filter" attitude?

How can Twitter get smarter?

I'm starting to hate Twitter these days.

Since 2008, it's been an ever-flowing channel of communication – direct and unfiltered. Celebrities, basketball stars, and even Presidents can post with reckless abandon.

We've been living in the age of unfiltered status updates for almost ten years now, but it makes me wonder if there is a better way to share thoughts spontaneously... but with a little more civility.

As a recent example, President Trump posted an off-hand remark about possibly ending press briefings and would, instead, hand out prepared statements only. The implication here is that reporters would not be able to ask questions in an open format or engage in dialog with White House reps. It would be more structured and controlled... and less democratic. Regardless of your political view, this is a strange tweet.

But did he really mean that? Was it an off-the-cuff statement?

Part of the issue these past ten years is that, once you hit send on a tweet, you can't really take it back or edit what you say. Twitter online abuse is still an ongoing problem, but even things like an employee revealing too many details about company plans can enter the flow and then never come back again.

Once a tweet is live, anyone can save it forever.

To me, President Trump's tweet is an indication of everything that's wrong with Twitter. We're not talking about freedom of expression. We're talking about a tool that encourages an unfiltered attitude – no thought about consequences or harm.

What would work better? One example is on Facebook, where it's easy to go back and edit a post or delete it. It's a closed system – if I tell a friend he's an idiot or share a marketing plan that's confidential, it remains someone contained. Only the friends of both parties see the post (if the privacy settings are set correctly). It's one reason I know a handful of people who have deleted their Twitter accounts but stay loyal to Facebook.

Another answer to the problem is to use AI routines that are much smarter and faster at spotting online abuse or warning users about confidential information. Some (but not all) of the most harassing tweets are said in anger. With better contextualization and smarter filters, Twitter could spot a tweet before it ever goes live and warn the user about online harassment or other issues. That does not happen today. Again, this is not a free speech issue. Warning a user is a helpful way to curb online abuse and block harassment.

I depend on Twitter – it's my primary tool for communicating about my job. Still, I maintain a safe distance – I only post about my work and occasionally share a few personal details. It's not a safe environment, and it's never really been that safe. It's a place where unfiltered commentaries run rampant. There are ways to reel that in and make Twitter smarter and safer. Now the question is – will Twitter do anything about it?

http://www.computerworld.com/article/3196239/social-media/
does-twitter-encourage-a-no-filter-attitude.html

Assignment 3. Work in pairs. Find an English equivalent to the following words ad word combinations from the text.

1. Неподготовленное высказывание
2. Нажать кнопку «отправить»
3. Текущая проблема
4. В прямом эфире
5. Онлайн-преследование
6. Сохранять безопасное расстояние
7. Выходить из-под контроля

Assignment 4. Search in the Internet for the most striking news you've come across on social media. Share it with your groupmates.

Assignment 5. Split into two groups. Carry out a debate on the problem: "Social media censorship vs no-filter attitude.

Text E

Assignment 1. Before reading the text study your active vocabulary.

To hit a new high, to forge relationships, netiquette, to maintain certain image, to codify policy, subject-matter expert, to promote and enforce etiquette, to prompt an emotion, tailored online experience, to stand out from the crowd.

Assignment 2. Read the text on netiquette and clarify this notion. Be ready to discuss it.

Why online etiquette matters – and why IT leaders should care

High-tech analyst and author Scott Steinberg offers ideas for navigating social media networks with grace and discusses the crucial role CIOs play in promoting – and enforcing – good behavior online.

It seems that not a week goes by without social media hitting a new high – or, as United Airlines might attest, a new low. Whatever your perspective, there's no denying that social networks and online connections can shape how we work, think and interact to a dramatic degree.

High-tech analyst and consultant **Scott Steinberg** *offers guidance on how to get along in this digital world with his new book,* Netiquette Essentials: New Rules for Minding Your Manners in a Digital World, *which was released in February. This is Steinberg's seventh book about business or technology. Here he discusses why manners matter on social media, and why CIOs should care.*

What observations prompted this book? I have a passion for helping people succeed, and I love watching them network and forge meaningful relationships. And the ability to communicate and establish relationships is key to business success. But the more managers you talk to, you find that over the years that people – while they have better access to education and technology – are less equipped for face-to-face interactions because they're getting less and less of them. They're less equipped to present in public or give a speech or a presentation. And you see it day to day.

You're talking to younger people and they're checking their phones and texting and tapping while you're talking. It creates the impression that they're snubbing you, even if that isn't their intent. A lot of this isn't just high-tech etiquette. Some of it is classic etiquette, and we seem to be losing it as we move further online.

What's the top faux pas people make in or regarding the digital world? They forget that social networks are some of the most public spaces available and are shared the entire world over. And while these settings seem very relaxed and informal, and people enjoy them in a casual manner, we tend to post things that we wouldn't say out loud in a real-world or office setting.

Posting something you thought was funny or liking a politically charged comment, it can be seen as an endorsement. You have to think twice about posting or liking something controversial. It could be a lightning rod. That like or share could be seen as an endorsement. And the other piece that's interesting, too, is you can often get private and personal information that people have shared online. And

people forget when they post something online that tone of voice and human elements are lost in the translation to the electronic realm. So something you think is said in jest can be taken out of context.

Smiley faces don't do the trick? A smiley face never hurts. Thank God for emojis. Some people talk in very logical manner, and it comes off very harshly if you don't add a smiley face.

We've seen headlines about people getting in trouble for their social posts. Why haven't we all learned this lesson yet? Maybe because social networks have a more informal feel to them. You can forget that people might not have context around it. Social networks and online tools encourage us to be more social-facing than ever; there's less privacy than ever before. They're meant for short bites – most people don't put a lot of thought into what they post. You have to be more purposeful and intentional about what you're putting out there.

Do different tiers of workers follow different rules regarding online behavior? Yes, and part of it might be just in terms of maintaining a certain image or projecting a different persona. Senior leaders, because they're seen as the voice of the organization, tend to be more reserved and a little more thoughtful. If you have folks not in senior leadership roles, they tend to be more active online and more casual about the thoughts they're projecting into the world. In contrast, a senior executive under massive scrutiny will be more reticent to share something they perceive as having some controversy around it.

Scott Steinberg says companies should adopt social media policies, and IT leaders should work with employees to help them understand "how they should communicate online and add value for end users and customers."

How can we counteract the negative? Some of the things that can help here are codifying a social media policy at work and assigning social media managers to serve as a consistent voice; to talk with employees about what to share, the tone of voice that's appropriate, the content they should be putting out there in the world; and to really work with them to understand how they should communicate online and add value for end users and customers.

Why should businesses care, especially if their employees' online activity is separate from work? If they work for you or with you, they will be seen as a representative voice of the brand. It's hard to separate that online. So it's tremendously important because the people you send to conferences and events, you expect them to be a positive face of the brand. You would expect them to be the same in person and on social media, when they're comporting themselves to an ever-wider audience and more and more customers.

What role should CIOs play in this discussion within their companies? They'll play a crucial role, because they'll be working closely with marketing and communication teams about the image they want to portray and what message they want to send out into the world and what kind of information they can convey. You also have to keep in mind the touchpoints are high-tech touchpoints.

The people who are providing this technology are the most informed subject-matter experts in the organization. They're in a unique position to help marketing and communications understand it, and they'll often have access to analytic data that others want. And IT is often the first to get the blame when something goes haywire online.

Are there technologies that CIOs can use to promote and enforce etiquette? If you're using corporate devices, it would be anticipated that the company would keep an eye on those activities. It helps to have devices that only allow certain types of actions, that only allow access to appropriate websites and forums. And there are social media monitoring tools that can keep an eye on what's being said. But it comes down to training instead of installing an app.

Why training over monitoring? The technology is reactive. You want to teach workers to make good decisions and have better high-tech habits.

What is the top social trend that companies need to watch, and how do CIOs prepare for it? We're obviously seeing a switch to shorter forms of media conveyance. You also have a fact that people are tuning in on different devices. It's what Google calls micro-moments, and CIOs have to think about how they can personalize those micro-moments.

People are looking for a more tailored online experience. They're looking for stories that resonate and prompt an emotion. They're looking for that personal connection. You once had a static marketing message, but now people are looking for you to humanize it, but in a way that doesn't take away from the brand's authority.

How do CIOs support that? They're going to be the backbone of this. The CIO is going to be a key driver of innovation, and they'll help marketing and PR realize all the mediums available to them and supply them with the technology to succeed. CIOs will also be the ones to help them filter and decide on the best tools. You're going to see marketing and advertising building more things on the fly, so they will want IT to create the tools to let them create things faster.

Should CIOs be building their own social media brands? Absolutely. Your personal brand is important in this day and age when everything is commoditized. Finding ways to stand out as a thought leader can help separate you from the crowd and connect with others online. What makes you unique is part of the expertise and authority you bring to the role, and there's no reason you shouldn't share that authority with others online.

Should anyone live offline? Finding balance and finding time for offline interactions is key, as is cultivating healthy online habits.

http://www.computerworld.com/article/3192157/internet/why-online-etiquette-matters-and-why-it-leaders-should-care.html

Assignment 3. Work in pairs. Match the words to make a word expression.

1. To forge	a) the negative
2. To counteract	b) value
3. To prompt	c) a positive face of the brand
4. To maintain	d) policy
5. To add	e) relationships
6. To be	f) in public
7. To present	g) a crucial role
8. To adopt	h) an emotion
9. To play	i) an eye
10.To keep	j) an image

Assignment 4. Conduct a survey among your groupmates whether they follow netiquette rules or not.

Assignment 5. Role-play a business seminar in an IT company on the topic "Online etiquette matters".

Text F

Assignment 1. Before reading the text study your active vocabulary.

Emoji faces, to raise awareness, slang, to use in jest.

Assignment 2. Read the text about the way children communicate online. Do you agree with the author?

Parents have no idea when kidz txt m8s "KMS" or "99"

But unlike David Cameron, they know what LOL means.

Most adults have no idea what their kids mean when they use text terms such as "KMS", "99" or emoji faces with cross eyes, according to an unsurprising piece of research by BT.

The survey of 4,500 adults was conducted by BT to raise awareness of Safer Internet Day. "Popular online slang and emojis used by children to communicate with friends may as well be a foreign language to most parents," said the report.

More than 50 per cent of adults who took part in the quiz were aware of the secret meanings behind 182 (I Hate You), WTTP? (Want To Trade Pictures?) and (L)MIRL (Let's Meet In Real Life).

But other terms remained esoteric for parents.

When used by kids the cheeky monkey with paws over its mouth translates to "I won't tell anyone" but more than half of parents did not know the meaning.

Some terms such as KMS (Kill Myself) although used in jest by some teens were thought to mean "Keep My Secret" by 65 percent of parents.

Apparently, the number "99" is used by children to indicate to their friends that their "Parents Have Stopped Watching" – a code which parents could find useful to know.

Unlike David Cameron, who infamously signed off his texts to Rebekah Brooks with LOL, thinking it meant "lots of love" most people know it now as laugh out loud, said the research.

Carolyn Bunting, general manager at not-for-profit online safety organization Internet Matters, said: "Children's use of the internet is developing at a rapid pace. While it is unrealistic to expect parents to understand every piece of internet slang their children will ever see, online safety starts with a conversation."

"It's vital for parents to talk to their kids about their digital worlds, including the sorts of things they might experience online, and the types of issues to be aware of, from cyberbullying to privacy."

https://www.theregister.co.uk/2017/02/06/parents_have_no_idea_when_kidz_txt_m8s_kms_or_99/

Assignment 3. Working in small groups decipher the following abbreviations. How many did you guess? Compare your results with your groupmates'.

AEAP, AFAIK, ASAP, BRB, BTW, CU, DFTT, DND, EOM, FAQ, FTR, HAND, IMHO, IRL, JAS, JK, LOL, MFW, MOTD, NP, OMG, OT, PAW, THX, TTYL, WB.

Assignment 4. Split into two groups. Carry out a debate on the topic: "Children's safety is undermined by parents' unawareness."

Text G

Assignment 1. Before reading the text study your active vocabulary.

To incorporate the language, approved lexicon, to be a major influence on, tech- and web-related words.

Assignment 2. Read the text about the neologisms added to Oxford dictionaries.

"NSFW", "Twittersphere", other internet slang added to Oxford dictionaries

The Oxford Dictionaries Online has officially declared "NSFW," "newb" and "Twittersphere," among other Internet slang terms, real words. The dictionary, which is considered one of the preeminent authorities on the English language, is actively taking steps used online into the approved lexicon.

The words were added because "the world of computers and social networking continues the English language," says the Oxford website in an announcement of the May updates. Earlier this year, Oxford admitted "bloggable," "cyberbullying," and "LOL" into its list of acceptable terms.

Below, a complete list of the new tech- and web-related words that anyone can now use without (much) shame:

- breadcrumb trail – (on a website) a series of hyperlinks displayed at the top of a web page, indicating the page's position in the overall structure of the site
- Cyber Monday – (in the US) the Monday following Thanksgiving, promoted by online retailers as a day for exceptional bargains
- infographic – a visual image such as a chart or diagram used to represent information or data: a good infographic is worth a thousand words
- insidery – proceeding from or reflecting an insider's knowledge or perspective: an insidery website that is widely read in the capital's political precincts insidery jargon
- lappy – a laptop: I'm going to transfer my CD collection to the lappy
- lifehack – a strategy or technique adopted in order to manage one's time and daily activities in a more efficient way
- meep – a short, high-pitched sound, especially as emitted by an animal or a vehicle's horn: the kitten released a terrified meep
- nekkid – (of a person) naked: some of the oldest photos in existence are of nekkid women
- network neutrality – the principle that Internet service providers should enable access to all content and applications regardless of the source, and without favoring or blocking particular products or websites
- newb – short for newbie: it's easy enough for total newbs to pick up and play
- NSFW – not safe (or suitable) for work (used in electronic communication to indicate that a particular web page or website contains explicit sexual material or other adult content): if your friend just sent you something with NSFW in the subject line, don't go there

- paperless – relating to or involving the storage or communication of information in electronic form, rather than on paper: several of the utilities companies have switched to paperless billing
- permalink – a permanent static hyperlink to a particular web page or entry in a blog
- Twittersphere – postings made on the social networking site Twitter, considered collectively: the Twittersphere was abuzz when the story first broke
- unfollow – stop tracking (a person, group, or organization) on a social networking site: never unfollow someone just because they unfollowed you!
- ZOMG – (used especially on electronic message boards as a sarcastic comment on an inexperienced or overenthusiastic poster) oh my God!: ZOMG! ! I finally managed to reformat the file; the airport was hot and big, but there was really nothing that made me stop and think ZOMG FOREIGN COUNTRY!

https://www.digitaltrends.com/computing/nsfw-twittersphere-other-internet-slang-added-to-oxford-dictionaries/

Assignment 3. Work in groups of 3. Render the following sentences into Russian. Compare your results with your groupmates'.

1. The film gave me a whole range of bloggable ideas.
2. The article contained some useful infographics.
3. A breadcrumb trail shows the path from the home page to the current page.
4. On my homepage you can click on the permalink to any of my blog posts.
5. Remember when everyone talked about how we would be a paperless society?
6. This useful website offers good lifehacks for better use of your time and your technology.
7. When you complain about having to listen to a child cry, ZOMG, does it not occur to you that you might be talking about a sad, scared or suffering person?
8. I love how you said "coffee is not my cup of tea". LOL!
9. The school provides guidance for parents on how to deal with issues such as cyberbullying.
10. Online sales surged on Cyber Monday.

Assignment 4. Oxford English Dictionary asks young people to explain modern slang. Working in small groups, search in the Internet for examples of interesting modern slang and explain it to your groupmates.

Text H

Assignment 1. Before reading the text study your active vocabulary.

Digital glossary, to emerge from the Web, newly coined words, urban dictionary.

Assignment 2. Read the text about the neologisms added to Oxford dictionaries.

Facebook's digital glossary patent revels web-slang version of the urban dictionary

Facebook has been granted a patent for "social glossary" software that scans its platform for emerging terms and slang.

It is unclear at this stage whether the glossary will be made available to the public or its users. Nonetheless, Facebook account holders are critical to the software, which will search through posts and messages on the site to seek newly coined words and expressions, or neologisms if you prefer.

In the patent, Facebook states that the software will be on the lookout for "slang, terms of art, portmanteaus, syllabic abbreviations, abbreviations, acronyms, names, nicknames, re-purposed words or phrases, or any other type of coined word or phrase."

There are plenty of digital definitions that have emerged from the Web, before being widely used in reference to it – "troll," "noob," or "digital detox" being a few examples. As for popular portmanteaus (word combinations), those include "staycation," "hacktivism," and "listicle."

The glossary will basically attempt to collect emerging Web slang that is not yet widely in use but may be on the cusp of becoming popularized. It will also seek to update itself by removing terms that fall out of fashion.

Although it sounds like Facebook's attempt at creating its own Urban Dictionary, the social network itself isn't giving much away in regard to its plans for the software. One idea mentioned in the patent filing is that it could be used for an improved predictive text program, reports Business Insider.

Facebook describes a scenario where the term "rickrolled" (when somebody bombards you with clips of the Rick Astley song "Never Gonna Give You Up") is recognized by its glossary. Its software will spot the term as it spreads and collect different examples of its use.

https://www.digitaltrends.com/social-media/facebook-social-glossary-web-slang/

Assignment 3. Work in pairs. Match the words with their definitions.

1. Portmanteau	a) a type of technical terminology that has a particular meaning within a specific industry.
2. Neologism	b) a word blending the sounds and combining the meanings of two others
3. Slang	c) a word formed from the first letters of the words that make up the name of something
4. Term of art	d) an informal, often humorous, name for a person that is connected with their real name, their personality or appearance, or with something they have done
5. Acronym	e) a very old word or phrase that is no longer used
6. Nickname	f) a new word or expression or a new meaning of a word
7. Archaism	g) very informal words and expressions that are more common in spoken language, especially used by a particular group of people

Assignment 4. You are participating in a linguistic conference at our university. Carry out an investigation about the peculiarities of the Internet discourse and present your results to the audience.

Text I

Assignment 1. Before reading the text study your active vocabulary.

Acronym, emoji, Internet slang, hashtag, emoticon.

Assignment 2. Scan the text about emojis and clarify this notion.

OMG – Emojis are killing off traditional "net slang"

Kids these days prefer pics to acronyms says Instagram analysis. Emojis are killing off traditional internet slang, according to a probe by Instagram's engineering team.

Instagram's just made it possible to use Emoji in hashtags, a feature we're sure you were all positively clamoring for, and did so in response to its users' increasing interest in the cute little characters that add color and variety to ye olde emoticons.

How much interest? The analysis Instagram has conducted of its users' emoji use shows that "traditional" internet slang – acronyms like LOL for "laugh out loud" – were as common as Emoji in July 2012, but that usage has now fallen

by about 25 per cent among that cohort of users. Recent Instagram accounts, the data shows, now use slang in under five per cent of posts but are using Emoji in nearly half of their posts.

The analysis suggests that Emoji are replacing older slang, but that some meanings are being retained. An emoji depicting crying with laughter, for example, is analogous to the old-school lolol, lmao, lololol or lolz. A heart ♥ Emoji is used interchangeably with slang like "xoxo", the kissing sound "mwahh" or the simple "loveyou".

Instagram's analysis also suggests that Emoji are growing fast, and that before long they'll be present in over half of posts to the service.

All of which surely means we're probably not far off a panic about whether kids these days can actually string a sentence together.

https://www.theregister.co.uk/2015/05/04/omfg_emoji_are_killing_off_traditional_net_slang/

Assignment 3. You are giving a consultation to a group of worried parents on the influence of the Internet-speak on the way their children talk in real life. Parents are eager to know whether emojis represent a threat to thier children's literacy?

Text J

Assignment 1. Before reading the text study your active vocabulary.

To diminish the spoken word, to unfriend, back-and-forth, to highlight, hashtag, to pervade, to give a boost, to have a lasting impact on, to supplement, to supplant, parlance, on the fringe of society, vernacular.

Assignment 2. Read the text about the influence of Internet-speak on the way we talk in real life. Do you agree with the author?

How internet-speak is changing the way we talk IRL (in real life)

The Internet has a huge influence on our vocabularies and favorite sayings. But don't worry about the downfall of English just yet. While some people worry that hashtags and emoticons will fundamentally diminish the spoken word as we know it, these fears are overblown.

When it comes to the way we communicate with each other, it's obvious the Internet influenced some major changes: Email superseded snail mail, Facebook pretty much swallowed the idea of calling someone and wishing them a happy birthday, our job hunts are conducted through LinkedIn or Craigslist.

It’s slightly less in-your-face, but the Internet is also shifting the words we use to speak to one another, not just the way we choose to communicate. Our obsession with the Internet even influences the simple act of talking – out loud, in real life (IRL, if you prefer). Certain acronyms, neologisms, and abbreviations have infiltrated everyday speech – if I say something like “OMG, why did my ex like my status, obvi I’m unfriending him,” most people would know what I’m talking about (even if they’ll roll their eyes at how annoying I am). Since people often communicate online and through text messages, truncated turns of phrase and space-saving emoticons are now mainstream.

LOLing at the language changes

Internet-speak is firmly implanted in language now, and as we continue to live our lives online, new expressions and words will continue to develop. Just as languages evolved before – by interacting with other languages – we will adjust the way we use words based on what we do and see. And since what we see is so often the white glow of a computer screen, our language is impacted by the Internet. Linguist Ann Curzan has a term for this kind of back-and-forth: “electronically mediated conversation,” or EMC.

“Did you re-tweet Tom’s GIF link? Shaking my head.” My brother said this to a friend yesterday, verbalizing the popular “SMH” acronym aloud. And the sentence showcases a few different ways the Internet shapes language. Obviously, since we talk about the Internet, the content of the sentence is contingent on the Web. But the use of “re-tweet” shows how we adapt our language around new technological concepts.

Twitter introduced the idea of a “re-tweet” as an action, but people informally incorporated it into their vocabularies as a verb. This happens regularly when new features appear online – things like “rickrolling,” “icing,” “lurking,” “trolling” arose from forums and spread mimetically, while Facebook gave us things like “liking” and “friending.” Oxford Dictionaries wrote a blog post highlighting how Facebook introduced a variety of new words and phrases into the lexicon, noting “Facebook has given a slightly different nuance to these familiar words.” So when it comes to vocabularies, the words we choose to use in our conversations now often give the impression of a logged-in life.

And we’ve already moved to a stage in Internet-speak where the original meaning of “LOL” has transformed. The Atlantic Wire talked to linguist Ben Zimmerman about it, who said LOL has definitely been undergoing a semantic shift, with its original humorous connotations becoming toned down or even disappearing entirely. Professor Curzan agrees, as she wrote in a blog post, “LOL is now a way to flag that a message is meant to be funny (similar to JK – ’just kidding’) or to signal irony. LOL can also be a way to acknowledge that a writer has received a text – a written version of a nod of the head and a smile.”

In other words, now LOL is more of a placeholder or a way to show that you're listening than a way to say you're laughing, or you think something is funny. This is the most obvious sign of Internet-speak becoming divorced from its original meaning and taking on a new definition. And if you look at the evolution of the hashtag, you'll see that the symbol can be used to signify a variety of moods and purposes.

Don't worry about a world of emoticons and misspellings just yet

Even though Internet and text speak pervade daily conversations, the influence of technology like SMS and Facebook on the English language is often overstated, according to renowned linguist Professor David Crystal, who wrote a number of books on text and Internet language. So has Internet-speak has given English an interesting boost? "No. It is too soon to say," Crystal bluntly tells me. "The Internet has only been around for some 20 years, which is no time at all. It takes a lot longer for permanent or significant language change to operate."

Crystal also downplayed the role of the Internet further down the road and emphasized that it's futile to try to predict the future. When asked if he thought the Internet would eventually have a lasting impact on language, he sounds dubious. "No one should ever try to predict the long-term linguistic future of a language. But in the short-term, no. Think of other technological events. When broadcasting arrived in the 1920s, we saw the arrival of all kinds of new styles, such as sports commentary and news-reading. Such things don't seriously rearrange a language, whatever that might mean. They simply add new styles and extend the language's expressive richness."

So even down the road, Crystal sees the Internet as a thing that will offer ways to supplement English rather than seriously disrupt or supplant it. He made that clear with his response when we asked him if he could name some of the biggest changes to language due to the Internet. "None. As the Internet is predominantly a graphic medium, the most noticeable changes have been there, not in speech at all. So there have been some interesting novel informalities in orthography, such as punctuation minimalism, and the arrival of emoticons. But in speech, nothing. Most people speak today just as they did before the Internet arrived. The occasional additional spoken abbreviation (such as LOL) is hardly a significant effect."

In other words, Crystal notes that rampant use of smiley faces is a real thing, but he does not believe the Internet is really substantially changing the way we talk – that should be good news for frustrated English teachers who die a little inside each time one of their students yells "YOLO," though I think his focus on the big picture overlooks just how common it is to hear acronyms and text speak in daily conversation.

But young people are spearheading the change

Even though Crystal downplayed the impact of the Internet on how we talk, it's hard to deny how younger people are bringing Internet-speak into the mainstream. A 14-year-old girl from England recently wrote a blog post detailing some pertinent slang for older people, and it seems like they may need it – as reported by the New York Times, courts around the U.S. are using sites like Urban Dictionary to understand the parlance of their younger defendants.

Right now, middle-aged people did not grow up with the Internet; they started using it as teens or adults, so they don't have the same relationship to how people talk online and through mobile devices – they're not native speakers. But as the first generation of native speakers grows up and has children of their own – children who will no doubt be even more acclimatized to living online, if the babies I see playing with iPads are any inclination – the amount that Internet speak weaves into normal dialogue will become even more pronounced.

Of course, it's not just Bieber-loving tweens who pepper Internet-speak into their conversations – it's anyone who regularly uses the Internet or participates in Internet culture. And while sites like Reddit and Tumblr, with vocabularies specific to their online communities, used to be more on the fringe of society, now the president of the United States is doing Reddit interviews and making a Tumblr page.

So it seems likely that the Internet will continue influencing the way we talk as long as it's an important part of society. But that doesn't mean more changes aren't up ahead. Will words like "unfriend" persist even after everyone gets sick of Facebook and moves on to the next big thing? Or will these types of words go the way of another antiquated vernacular like "groovy" or "daddy-o?" It's possible that many of the recent changes to the mainstream vocabulary are as impermanent and trivial as Crystal suggested – but it's also likely that they will be replaced by other words that stem from our lives online.

https://www.digitaltrends.com/social-media/how-the-internet-is-changing-the-way-we-talk/

Assignment 3. Work in pairs. Provide a synonym to the following words from the text.

1. To influence
2. To decrease
3. To encourage
4. To displace
5. To belittle
6. To augment

Assignment 4. Say whether the following statements are true or false.

1. Worries about hashtags and emoticons fundamentally diminishing the spoken word are excessively inflated.
2. Since people often communicate online and through text messages, truncated turns of phrase and space-saving emoticons are vanishing into thin air.
3. Internet-speak is firmly implanted in language now, and it will continue to supplant it.
4. Internet-speak has transformed the language by giving a slightly different nuance to the familiar words.
5. As the Internet is predominantly a graphic medium, the most noticeable changes have been in speech.
6. The parlance of the younger people must be clarified to the older ones.
7. There is no doubt middle-aged people will be even more acclimatized to living online.
8. Many of the recent changes to the mainstream vocabulary are impermanent and will go the way of another antiquated vernacular.

Text K

Assignment 1. Before reading the text study your active vocabulary.

In retail, to cement/to establish a footprint, to target, to pay off, to expand its network, e-commerce, brick-and-mortar, consumer insights, to adopt shared-economy model, household name, to scan a barcode, available, item, to track the purchase, to make personalized recommendations, customized for each user.

Assignment 2. Read the text about the peculiarities of online retail. Provide a Russian equivalent to the words in italics.

Alibaba powers ahead in retail as Amazon plays catch up

While Amazon remains mum over its on-off-on-again Singapore launch, Alibaba's *online-offline strategy has cemented its footprint in the Chinese retail space*, with further growth targeted for Southeast Asia.

Alibaba's strategy of marrying the online and offline realms *appears to be paying off*, pushing it streaks ahead of Amazon as both e-commerce giants now look to extend their gameplay into Southeast Asia.

Alibaba last week added three Hema stores in Beijing and Shanghai, which expanded its network of the physical sites to 13 across China and, in doing so, demonstrated how it had seamlessly coupled its online and offline infrastructures to power its "new retail" vision.

Having already established a strong footprint in China's online retail space, the company in 2015 formulated a strategy to "reinvent" traditional supermarkets by *introducing capabilities it had built up from its e-commerce heritage*.

To drive this, since 2015, it had invested more than US$9.3 billion in offline stores including department store Intime Retail Group, which it acquired early this year, and supermarket operator Sanjiang.

Alibaba Group CEO Daniel Zhang said of the Intime buyout: "*We don't divide the world into real or virtual economies*, only the old and the new. *Brick-and-mortar businesses* will be able to create value for consumers if they are integrated with the power of mobile reach, real-time consumer insights, and technology capability to improve operating efficiency."

"Our combination with Intime will enable us to tap into the long-term growth potential of a new form of retail in China powered by internet technology and data," Zhang added.

In fact, Alibaba has adopted the same ideas from the shared-economy model that had helped the likes of AirBNB and Uber become household names, by tapping its Hema network to double up as fulfilment facilities for online orders.

On-site employees scan and pick up items listed in each order, prepping them for delivery, and each store serves a radius of 3 kilometers so deliveries can be completed within 30 minutes of the order.

The physical stores also are stocked with items that *can be identified with barcodes*, providing customers with information about the products as well as recommendations of similar products. Customers can scan the barcodes via the vendor's mobile app, which is linked to its AliPay platform that can be used to pay for purchases at the counter.

Hema shoppers can join a membership program through their Taobao or Alipay accounts, enabling them to view and purchase available items from the nearest store. *The app also tracks their purchase patterns*, makes personalized recommendations as well as pushes product page customized for each user.

Basically, it's Amazon in the offline world–except Amazon isn't quite there yet, and Alibaba is.

So where is Amazon exactly? Well, it only made its first significant step into the brick-and-mortar realm with the Whole Foods acquisition last month, and it will take a while before it figures out how the integration should be done.

It also is still working through kinks in its Amazon Go concept store, which public launch had been delayed, and its network of physical bookstores is limited.

http://www.zdnet.com/article/alibaba-powers-ahead-in-retail-as-amazon-plays-catch-up/

Assignment 3. Dwell on the idea of online retail. Specify the peculiarities of Alibaba and Amazon business.

Text L

Assignment 1. Before reading the text, study your active vocabulary.

Powerhouse, to have financial challenges, stock, to drop dramatically, to ship the merchandise, to capture market share, viable, consumer market, to be first on the list, to have dominant presence, to grow stale, e-tailer, competitive price, to supersede, to have a backup.

Assignment 2. Read the text about the history of online retail on the example of Sears. After reading, compare Sears' business strategies with Amazon's.

What Sears' recent troubles could tell us about Amazon's future

Sears was once THE powerhouse in retailing. Can its recent fall from grace provide any insights for current e-retailers?

Sears has been having severe financial challenges as of late. Its stock has dropped dramatically, and it's closing many of its Kmart and Sears stores. In fact, there is speculation it may not survive. While many of the problems may have been self-inflicted by not changing with the times, the situation does give us a potential window into where Amazon (and other online e-retailers) may be headed longer-term.

Sears was the original Amazon.

Although from a different era, it had many of the same characteristics. As its slogan, the Sears catalog claimed it "tamed the west." But what it really did was place a storefront in front of anyone with access to a catalog. And the catalog was extensive, with virtually everything anyone needed (even major purchases like houses, cars and livestock).

It allowed any person with access to the postal service to send in an order and payment and buy from Sears – either from the individual catalog they received in the mail, or more often through the many places they could access one (in essence, the equivalent of today's affiliates stated in web terms). Sears would then ship the merchandise via the railroads and/or post office directly to the end purchaser. It even toyed with its own delivery force (sound familiar?).

Replace the above scenario with the web (catalog), credit cards/eBay (sending payment) and UPS/FedEx for the USPS (shipments), and you have a modern-day operation that is a direct imitation of what Sears did in the days before brick-and-

mortar stores were ubiquitous. Indeed, the Sears model was so successful it spurred many competitors (e.g., Montgomery Ward, J.C. Penney, Spiegel) to try to imitate and capture market share.

From catalogs to real estate

As Sears became more successful, it started to open its own stores in key areas of the country (in online e-commerce terms, think remote distribution centers). This allowed purchasers to get the goods much more rapidly, and for Sears to get paid more quickly. These relatively modest stores in the early days blossomed into the full-service stores we have come to know, and which were established in the many growing-population areas that created viable retail centers.

This strategy served Sears well for many years. Indeed, during the 1950s-1980s era of massive consumer market growth, Sears was often first on the list of virtually every homeowner, with its convenient suburban (and even rural) locations, selling much-needed tools, clothing and appliances.

The times, they are a-changin'

Consumers are now demanding new experiences driven by new technology – and Sears remains stuck in its old sales models.

Sears had so many stores and such a dominant presence that it felt it no longer needed a catalog. But its stores grew stale, and Sears was slow to try to recreate its catalog on the web. Its tardiness allowed many competitors to eclipse it.

So what does this portend for e-tailers like Amazon (and Alibaba, etc.)? Much like Sears in its heyday, you can buy virtually anything from Amazon by simply viewing its vast online catalog. And unlike the early days of Sears when it could take months to get your goods due to shipping constraints, most consumers now get their goods in a few days at worst. Amazon's model is similar to that of Sears, in that you may not always get the absolute lowest prices, but they are competitive and within reach of most consumers.

Amazon is now starting down the same path as Sears. It is opening local distribution centers that allow consumers to buy goods (called "stores" in old-school language). It's moving in some markets to open even more direct-to-customer models and playing around with its own delivery force (e.g., autonomous vehicles and drones).

But every sales distribution model has its day (perhaps lasting many years or decades). And each eventually gets superseded by a new one, most often driven by new technology (think web and/or mobile commerce).

The question is, can current leaders make a transition to what comes next?

Sears couldn't (nor could the railroads shipping goods when long-haul trucks and then airplanes came along). Amazon does have a backup in the web-based

cloud services it sells (AWS) and technology it creates (e.g., streaming), but is this enough? Isn't this simply the equivalent of just renting out warehousing space (although in this case the warehouse is electronic)?

The next major transition could easily be on-demand goods for businesses and homes. Indeed, the expansion of 3D printing and the improving technology could ultimately turn in to our own "Star Trek" replicators – although it will most certainly take years to fully achieve this.

Will this be the next phase of obsolescence in the commerce game? Will new companies emerge that are better at this than current e-sellers? Can the incumbents thrive in a new world that has completely decimated their existing infrastructure (you don't need warehouses full of goods or fast shipping methods if buyers can print their purchase in real time at a nearby location)?

Clearly, this is future stuff. But it is not as far off as some believe. We are already seeing very early signs of this. Who will be the companies that establish themselves in this new model and profit from the next phase coming within the next few years, and perhaps lasting the next several decades?

Only time will tell, but current e-commerce leaders: Remember Sears when you think you are invincible.

http://www.computerworld.com/article/3189604/e-commerce/what-sears-recent-troubles-could-tell-us-about-amazons-future.html

Assignment 3. Explain in your own words the meaning of the following notions.

1. E-tailer
2. Viable
3. Brick-and-mortar
4. Drone
5. Warehouse

Assignment 4. Role-play a dialogue between a sales adviser and a newbie in e-commerce. Help your colleague comprehend the differences between sales models.

Text M

Assignment 1. Before reading the text study your active vocabulary.

Fulfillment center, to boost efficiency, to stand to win, warehouse, workflow.

Assignment 2. Read the text about the implementation of robots in Amazon's warehouses. Give the gist of it.

Grasping robots compete to rule Amazon's warehouses

Amazon employs 45,000 robots, but they all have something missing: hands.

Squat wheeled machines carry boxes around in more than 20 of the company's cavernous fulfillment centers across the globe. But it falls exclusively to humans to do things like pulling items from shelves or placing them into those brown boxes that bring garbage bags and pens and books to our homes. Robots able to help with so-called picking tasks would boost Amazon's efficiency – and make it much less reliant on human workers. It's why the company has invited a motley crew of mechanical arms, grippers, suction cups – and their human handlers – to Nagoya, Japan, this week to show off their manipulation skills.

The Amazon Robotics Challenge starts Thursday and tasks teams with picking up objects ranging from towels to toilet brushes and moving them between storage bins and boxes. The handiest contestants stand to win prizes from a pool totaling $250,000. The showdown is taking place in Nagoya because it's part of this year's RoboCup, a festival of robotic competition which includes events for rescue, domestic, and soccer robots.

Amazon has run versions of its challenge in two previous years. This time around, though, the retail giant has revised the rules in ways that make the competition more difficult. "I think it's getting closer to the real conditions you would find in a warehouse," says Juxi Leitner, who leads a team from the Australian Centre of Excellence for Robotic Vision. "They're getting people to work on a problem they think they will need to solve to stay competitive without needing to hire anyone."

One change Amazon has made to this year's contest is to give the robots less space to work with than previous years. They now have to deal with objects right next to or on top of each other, as a human worker packing a bin of varied products into a box might. A bigger change is that half the objects a robot has to handle in a given round of the contest will only be revealed 30 minutes before it starts.

That's a headache for the teams but is a better match for conditions inside Amazon's warehouses, where grasping robots will need to be quick studies. A fulfillment center might receive tens of thousands of new objects every day, says Alberto Rodriguez, a roboticist at MIT, who is part of an advisory committee that helped Amazon design this year's contest. Teams have had to develop workflows in which photos of new objects snapped from different angles are fed into machine learning software so a robot can figure out how to grab something it had never seen half an hour previously.

With so much still to be figured out, Amazon's automated rodeo will be as much a showcase of research ideas and robotic clumsiness as machines that could replace human workers. Contestants will display all kinds of shapes and strategies, and there will inevitably be last-minute fixes and tune-ups.

When asked to estimate how long before a commercial-grade robot could do tasks similar to those presented in Amazon's contest, Rodriguez of MIT guesses five years. Robotic fingers are getting nimbler but still have much to learn. Amazon's mechanized picking contest could be an annual event for a while yet.

https://www.wired.com/story/grasping-robots-compete-to-rule-amazons-warehouses/

Assignment 3. You are talking to your friend who would like to open his own business online but is indecisive about the potential problems. Being a person well-versed in this sphere, give your piece of advice on how to be a success in e-commerce.

Text N

Assignment 1. Before reading the text study your active vocabulary.

To verify, to pay in cash, to pay electronically, brick-and-mortar store, shoplifting, to interact, beta testing, QR code, app, to authenticate, to browse the Internet, error-free technology, to be a heavy user, advanced technology.

Assignment 2. Read the text about Amazon Go. Be ready to discuss it.

Why smart stores don't check out

Amazon, Starbucks and Apple want you to walk into their stores, pick up your items, then walk right out. There's just one problem. Cash registers are dumb. Why do we still have them?

Invented in 1879 to keep saloon employees from stealing, the cash register combines the functions of a calculator to add up the purchases and a lockbox to keep cash safe.

It assumes that retail employees have no verifiable way to add up numbers. And it assumes customers are paying in cash. Nowadays, most people have a smartphone and pay electronically. So the assumptions are gone. Yet cash registers remain.

The success of online retail demonstrates that you don't need a Victorian-era contraption to sell things. You can do it all electronically.

But brick-and-mortar retail stores have a problem that online stores don't: shoplifting. Without a cashier verifying the purchase and providing a paper receipt, it's hard to stop some people from just taking stuff and walking out without paying.

The whole cash register model now represents a ritual that exists mainly as an anti-theft system.

That sounds like an easy problem to solve. Turns out it's not.

Why Amazon Go isn't ready to go

Amazon Go is that company's latest concept for disrupting brick-and-mortar retail. The company's vision is that you shop normally, then just walk out of the store without waiting in a line or interacting with a cashier or point-of-sale system.

The Amazon Go concept store watches you shop and lets you skip the cash register.

Amazon Go is a single 1,800-square-foot store in downtown Seattle that sells groceries as well as prepared food that's ready to eat. Amazon Go also features "Amazon Meal Kits," which are pre-portioned ingredients with recipes, a concept similar to Blue Apron.

The Amazon Go store is not open to the public. Amazon has been developing the store's technology for years and "beta testing" the store with employees for months. A report in *The Wall Street Journal* claimed that Amazon intended to open last month but delayed the launch because of technical issues.

That's not surprising. Amazon is attempting something very bold and new.

Amazon is using a combination of computer vision, sensors and deep-learning algorithms to know who's buying what. Amazon says that its patented "Just Walk-Out Technology" uses artificial intelligence (A.I.) comparable to the A.I. used in self-driving cars.

Here's how the store works. When you enter, you scan a QR code on the Amazon Go app at the front door. That scan announces to the store's system that you're there and preemptively authenticates the purchases you're about to make.

Then you shop.

Amazon's "Just Walk-Out Technology" has one job: to figure out what you're taking out of the store.

As you remove items from the shelf, A.I. uses multiple inputs to figure out what you grabbed. Cameras watch you take it. Scales built into the shelves provide data to calculate the weight of what you took. Amazon's patent filing suggests that the system may also refer to past purchases to help identify current ones.

In other words, intelligent software analyzes a video feed to determine that you removed something from the shelf that looked like a cupcake. It considers data from the shelf, which is also a scale, and calculates that you took something that weighs about as much as a cupcake. And it checks your purchase history – it knows you're a cupcake-eating maniac. After all that input, the software decides that you took a cupcake off the shelf and adds it to your list, which is kept up to date in real time as you shop.

If you place an item back on the shelf, the item is removed from the list.

It's possible, based on patent applications, that Amazon intends to use both face and body recognition (metrics like height and weight) to continuously identify you when you wander around the store picking up items.

Here's the best part: When you're done shopping, you just walk out of the store. As you leave, sensors at the door detect that you're exiting, and your Amazon account is charged for the items you got.

It's like shoplifting, except you have to pay for everything you took.

The technology is advanced. It may be too advanced.

A Bloomberg report said the Amazon Go system becomes overwhelmed when the store gets crowded, and that it's relying on humans to supervise the A.I. to make sure it correctly identifies the foods it's charging for.

It appears that Amazon's "Just Walk-Out Technology" makes a lot of mistakes, which is probably OK within reason. But it also may crash, bringing the whole system to a halt, which is not OK.

Amazon dominates retail already. Walmart is a global retail giant worth $215 billion (the company's value based on stock price). By comparison, Amazon is worth $430 billion – twice the value of Walmart.

It seems like Amazon has a sweet deal going with online retail. Why would they want to enter into the brick-and-mortar space?

The truth is that there are many items that consumers won't buy without seeing or trying them in person. Think of couches, for example. You probably don't want to buy a couch unless you can feel how comfortable it is.

There are other items, such as your lunch, that are too perishable for shipping.

Amazon has been trying a range of ideas for breaking into the $800 billion U.S. grocery industry. The Amazon Fresh delivery service is now available in 20 U.S. cities. Prime Now delivers groceries from local grocery stores in a few locations. Subscribe & Save lets people subscribe to buy paper towels and a range of other non-perishable but frequently consumed items for delivery like other Amazon items.

A system like Amazon's "Just Walk-Out Technology" adds convenience to shopping. But the real revolution is a quantum leap in behavioral data. In the same way that companies like Amazon, Google and Facebook track every mouse movement, every click, every scroll and every hesitation while you're browsing the Internet, Amazon Go's system potentially brings that level of customer awareness to the brick-and-mortar space. They'll know if you hesitated to buy that cupcake. They'll know you spent three minutes browsing the burrito options without finding something you wanted. They'll know exactly how long you were in the store, which sections you checked out and of course what items you bought, exactly.

It's likely that Amazon will open the Amazon Go store to the public sometime in the next few months. They will probably have to limit the number

of customers allowed in the store at the same time. And the "Just Walk-Out Technology" will make a lot of errors for the next few years, requiring human supervisors to monitor and correct those errors. For the foreseeable future, Amazon Go will be a half-baked mirage.

Amazon will accept losses resulting from errors as the price of learning how to do no-cashier retail. Eventually, the payoff could be huge. Once Amazon makes "Just Walk-Out Technology" reliable and relatively error-free, the company can roll out stores nationwide, then worldwide.

Like self-driving cars, however, automated stores that really work are years away, and for the same reason: A.I. just isn't good enough yet.

Starbuck's Mobile Order & Pay is hot, but still has grand problems

Starbucks is also working on the elimination of cash registers and cashiers. The company's app enables a service called Mobile Order & Pay, where you can order anything on the Starbucks menu via the app and pick it up without interacting with a cashier.

The company last week opened a mobile-only store at its Seattle headquarters.

Here's the company's dirty little secret: Mobile Order & Pay doesn't really work that well.

Sometimes customers place their order at the wrong store. I've done this myself a few times. That means the product is wasted at the wrong store, and the customer has to wait in line like everybody else at the right store.

Other times customers pick up somebody else's mobile order by accident. (I'm a heavy user of Mobile Order & Pay, and I live in constant fear that somebody else will get my tall drip – clearly my coffee order reflects who I am as a person – and I'll get their pumpkin spice latte with 12 shots of coconut syrup.)

Mobile Order & Pay can be great for coffee thieves bold enough to just grab somebody else's order. In stores where this happens frequently, the drinks are placed out of reach, forcing Mobile Order & Pay users to wait for a barista to give them their order.

Starbucks executives have hinted that they're working on perfecting Mobile Order & Pay. But making it function as it should take years – and the development of more advanced technology.

While Mobile Order & Pay is worthwhile for Starbucks (because their long-line problem is bad, coffee is so cheap and errors are fast and cheap to make right), it actually doesn't work well and isn't exportable to other retail situations that aren't selling what is essentially flavored water.

Apple's 'automation' depends on an army of employees

Apple was the first major retailer to enable a smartphone-based system where you can pick your product and waltz out of the store without interacting with a cashier, launching their EasyPay self-checkout system years ago.

The Apple Store app enables you to process your purchase as if you were buying online, then walk out of the store with the item.

This system isn't especially replicable. Apple doesn't use advanced technology for this feature. And one benefit of self-checkout should include cost savings because fewer employees are required. But with Apple, the opposite is true. The system works to deter theft only because Apple Stores employ dozens of employees, often for stores that are really a small single room.

Apple's system works for Apple because that company sells very expensive items at mass market scale, enabling them to afford an army of watchful employees.

Automated retail is years away

Amazon, Starbucks and Apple create the illusion that the era of automated, smartphone-based brick-and-mortar retail is here.

The truth is that the technology behind these stores doesn't work nearly as well as it appears to. And the systems developed thus far can't be extended to the wider world of retail stores.

Someday, stores will enable you to skip the cash register altogether. But for now, I just don't buy it.

http://www.computerworld.com/article/3188402/mobile-wireless/why-smart-stores-dont-check-out.html

Assignment 3. Discuss the following questions.

1. In what way smart store differ from a brick-and-mortar store?
2. How is Amazon Go technically realized?
3. Is Amazon Go open to the public?
4. What are the advantages of doing shopping at Amazon Go?
5. In what cases does the Amazon Go system become overwhelmed? Dominating in online retail why does Amazon want to enter into the brick-and-mortar space?
6. What problems do Starbucks and Apple face with the automation of trade?

Assignment 4. Make a list of pros and cons of shopping in a brick-and-mortar and smart store. What type of store would you prefer?

Text O

Assignment 1. Before reading the text study your active vocabulary.

To surpass, to come out on top, skyrocketing, be at the top of the leaderboard, to set the tone for, to run a company, rival, to reap benefits.

Assignment 2. Read the text about the founder of Amazon on his way to success. Be ready to discuss it.

How Amazon's Jeff Bezos, briefly the world's richest person, spends his cash

Amazon founder and CEO Jeff Bezos surpassed Microsoft founder Bill Gates to become the world's richest person today for a brief period, with a net worth of $90.9 billion, thanks in large part to Amazon's recent acquisition of Whole Foods. The honor lasted only a few hours, as Amazon's stock price fluctuated Thursday ahead of the company dropping its earnings report, which revealed the company is doing well, but maybe not quite as well as analysts had predicted. Ultimately, Bezos ended the day with a net worth of $89.8 billion to Gates' $90.8 billion, according to Bloomberg's Billionaires Index. But with Bezos' empire growing and Gates increasingly focused on giving his wealth away, it's all but inevitable that Bezos will come out on top. Indeed, though Bezos' wealth may be skyrocketing, he lags far behind his tech billionaire brethren in terms of philanthropy.

As Gates showed, the person at the top of capitalism's leaderboard can set the tone for how wealth should be used responsibly. Gates worked hard to send the message that it's the responsibility of the world's richest to give back. Now, as Bezos is poised to assume the mantle of the world's wealthiest, pressure is mounting on Bezos to spend that money on something other than his business empire.

Techies, including Gates and Facebook founder Mark Zuckerberg, have topped the Chronicle of Philanthropy's list of the top 50 philanthropists in the country, but Bezos has never even appeared on the list. Nor has he signed the so-called "giving pledge," in which billionaires including Warren Buffett, Michael Bloomberg, Gates, Zuckerberg, and dozens more commit to give away half of their wealth to philanthropic or charitable causes. His parents, Jackie and Mike Bezos, run the Bezos Family Foundation, and while their children, including Jeff, sit on the board, the foundation is funded primarily by Jackie and Mike's own Amazon stock.

And while billionaires like Peter Thiel and Elon Musk have poured their fortunes into politics, Bezos has donated sparingly. He's funded Amazon's own bipartisan corporate PAC and repeatedly backed Washington Democratic Senator Patty Murray's campaigns, and in 2015 he backed Republican House Representative Jason Chaffetz's re-election effort, during which he defeated Stephen Tryon, a former executive of – wait for it – Amazon's long-time rival Overstock.com.

This absence of activism has earned Bezos a reputation for being either directionless or disinterested in philanthropy. Earlier this month, he attempted to answer those accusations with a tweet asking his followers how he should spend his money. “I’m thinking I want much of my philanthropic activity to be helping people in the here and now – short term – at the intersection of urgent need and lasting impact,” Bezos tweeted.

Back in May, Bezos donated $1 million to the Reporters Committee for Freedom of the Press – a philanthropic interest in keeping with his business interests; Bezos owns The Washington Post. In March, his family foundation gave $35 million to the Fred Hutchinson Cancer Research Institute. He donated $10 million for an innovation center at Seattle’s Museum of History & Industry. Amazon recently committed to house a homeless shelter, called Mary’s Place, inside one of its new Seattle office buildings, complete with a $1 million grant from Bezos. All that helps. And compared to the $45 billion investment Zuckerberg and his wife Priscilla Chan made in their Chan Zuckerberg Initiative, or the $30 billion or so Gates reportedly donated to The Gates Foundation, it starts to look quite small.

Bezos has, instead, reserved his big money for for-profit endeavors, spending $250 million to acquire the Post and, arguably, bring it back to life. He’s also launched an aerospace company called Blue Origin that he frames as a humanitarian endeavor to save humanity from an endangered planet.

This isn’t altogether unusual for tech philanthropists, Palmer says. “A lot of the new tech money says philanthropy isn’t the only way to solve societal problems.”

It’s also possible that Bezos has chosen to give anonymously, and that his true philanthropy may merely be hidden. Even so, members of the philanthropic community say that it’s critical for Bezos to take a more public-facing approach to giving. Fame, after all, can be almost as powerful as fortune.

Still, we’ve seen this “growth before profits” strategy play out from Amazon before. It’s all but likely that before long, Amazon will be reaping the benefits of its latest investments. And Bezos will be right there, poised to officially take the crown of world’s richest person from Gates.

https://www.wired.com/story/how-amazon-jeff-bezos-spends-his-money/

Assignment 3. Get ready for a group debate on the problem of philanthropy and contradictions whether the rich should share.

Unit 4
MOBILE COMPUTING

Text A

Assignment 1. Before reading the text study your active vocabulary.

Myriad, messaging app, person-to-person communication, to top, to dominate, to lead, to rule, to lag for sth, to suit one's needs, best-in-class, caller ID, to roll out, mobile carrier, billing plan, instant message, lock screen, end-to-end encryption, one-to-one video calls, from with a single tap, pop-up menu, to use an incognito mode, to edit, to consolidate.

Assignment 2. Scan the text on Google' myriad messaging apps. Make notes of key points.

Google's myriad messaging apps: Which are best for you?

Is Google a good choice for communication? With the exception of email, Google is not considered a leader in person-to-person communication apps and services. Skype, owned by Microsoft, tops the video calling space. Facebook dominates social media. Slack leads business chat-room messaging. WhatsApp rules mobile messaging. And besides the big platforms from the big companies, hundreds of startups have created appealing and innovative communications apps and services.

Google lags for a variety of reasons. Among these are confusion and uncertainty – confusion about which app to use, uncertainty about whether Google will terminate any given product.

Google offers 11 communications apps and services. Alphabetically, these are: Allo, Chat, Gmail, Google+, Groups, Hangouts, Inbox, Messenger, Duo, Proje ct Fi and Voice. If you look at the various communication actions you might want to take – voice calls, video calls, email, text messaging and social posting – Google has at least two offerings for each.

The company is unrepentant about its bewildering lineup. A Google spokesperson told me: "We've designed specific products for distinct use cases, so we don't intend to have one app that does everything for everyone. We think we can better serve our users by creating products that function really well, and users can choose the product that best suits their needs." In other words, choice serves users better than clarity does.

At the same time, the company has a longstanding habit of ditching old products and services that have seen limited success, including Google Wave, Google Reader, Picasa and many more. According to my informal survey of nearly 3,000 Google+ users, a majority (55 % as of this writing) said they hesitate to use some Google products because they're afraid Google might kill them off.

In fact, this article originally covered 12 Google messaging apps and services, one of which was a unique social posting service called Spaces. But after offering the service for less than a year, Google announced that it was pulling the plug. Starting March 3, Spaces will be read only, and it will be removed entirely on April 17.

Still, the tech giant appears unconcerned about its reputation for killing off products and the uncertainty that reputation engenders. The Google representative told me that delivering the "best experience" involves occasionally dropping products for the sake of focus.

All that said, Google's communication products do have three Googly strengths:

1. Best-in-class artificial intelligence
2. Best-in-class search
3. Integration with other Google services

If you're one of the many users who want to take advantage of these powerful attributes, how do you approach the problem of choosing? If you want to embrace a text messaging app, should it be Allo, Hangouts, Messenger, Voice or Chat? If you're looking for an email service, do you choose Inbox or Gmail? And if you want to interact in a social networking context, should you use Google+ or Groups?

Voice calls

Google offers three ways to make phone calls via the internet (otherwise known as Voice-over-IP, or VoIP): Voice, Hangouts and Project Fi. All three enable calls to any phone number, and Google offers competitive international rates.

Google Voice, which at eight years old is Google's oldest VoIP product, is available on the web and via iOS and Android apps.

Voice includes a free phone number for U.S. users. In settings, you can instruct Voice to ring your home, work or cell phone – or all three – whenever someone calls your Voice number.

Voice takes voicemails, which are not only available as audio files, but also transcribed and emailed to you. You can also block phone numbers, and when you block them, those callers hear a fake message saying the number is no longer in service.

After five years with no major updates to its Voice apps, Google appeared to be slowly pushing Google Voice users toward Hangouts or encouraging them

to sign up for the Fi service. For example, Voice users can choose in settings to receive SMS texts and voicemails in Hangouts instead of Voice. When a Voice user calls via Hangouts, the person called sees the Google Voice phone number in caller ID. And only people who use both Voice and Hangouts can receive calls on Hangouts from a landline or mobile phone originating outside the Hangouts system. Using both Voice and Hangouts improves the functionality of Hangouts.

However, in January Google began rolling out an updated version of Voice with a more modern interface and new features, including group and multimedia texting. Seems there's life in the old app yet.

Project Fi is best known as Google's mobile virtual network operator (MVNO), which means that Google acts as a mobile carrier but in fact resells the mobile services of actual carriers. Fi is currently available only to U.S. users who own one of four smartphone models (because special antennas are required): Nexus 6, Nexus 5X, Nexus 6P and Pixel.

Fi's best technical trick is to automatically switch between Wi-Fi calls or any of three U.S. carriers to provide the best connection. Fi also offers low data rates at home and abroad, plus a very straightforward billing plan that can be "paused" for up to three months at a time when you're not using it.

Less well-known is the fact that when Voice users sign up to use Fi, their Voice phone number becomes the number for the phone, and their Voice account is essentially terminated and replaced by the Fi account.

Google's third voice-calling product is **Google Hangouts**, the closest thing Google has to an all-in-one communications platform. VoIP calling is merely one of its features; it also supports video calls, instant messages and SMS texts.

With Google's launch of Allo for instant messaging and Duo for video calling last summer, however, the company announced that it would refocus Hangouts as an enterprise tool. The company recently closed its Hangouts API for the refocus. Some business apps for Hangouts will remain, but the consumer apps are being terminated. Google is working to integrate Hangouts into the suite of business products formerly known as Google Apps, which the company recently rebranded "G Suite."

Consumers will be nudged away from Hangouts toward Allo and Duo. The trouble is, these apps don't support phone calls. So, which Google app for internet phone calls?

My advice: I recommend that every U.S. user take advantage of Google Voice. It's free and powerful. Whether you ultimately end up using another Google offering as your VoIP service, get Voice now and get the free phone number.

I also recommend Project Fi for anyone who owns one of the four supporting Android phones – or for anyone who travels abroad frequently.

If you now use or plan to use G Suite in the future, Hangouts is a great choice.

If you're not going to use Google's business suite but currently use Hangouts, keep using Hangouts for voice calls.

Video calls

Google gives you two ways to make video calls: Duo and Hangouts.

The Hangouts name originated with the group video chat feature of Google+. Some three years ago, Google removed the Hangouts video chat feature, the Google Chat voice calling feature and the Google Messenger messaging feature from Google+, and rolled them all into an app called **Hangouts**.

In August 2016, Google launched a new video calling product called **Duo**, which is available on iOS and Android.

For one-to-one video calls, Duo is the best app out there if you want to video chat with, say, your technophobic parents. Just open the mobile app, tap the one button (labeled "Video call") and pick the person you're calling. If they have the app too, you'll be connected on a free, high-quality video call that fills the whole phone screen.

For one-to-one video calls, Duo is the simplest app on the market.

When you receive a call on Duo, you see the preview of the caller's video on the screen before you even answer the call, a feature called Knock Knock. On Android phones, you even see the Knock Knock preview on the lock screen. (Knock Knock can be disabled in settings.)

Because one-to-one video calls on mobile devices is the only thing Duo does, Hangouts is currently better for other kinds of video calls, such as those made via a desktop web browser.

Two more differences: Hangouts uses your Google account for identity, whereas Duo uses your phone number. And Duo calls use end-to-end encryption, so it's actually more secure than Hangouts.

Duo's biggest downside is that it has fewer users than Skype, FaceTime or even Hangouts. So if you try to connect with a person in your Contacts list, chances are they'll have to install the app before you can connect. However, most consumers who use video chat tend to connect with the same small number of people, so once your family and friends have the app, it works great.

Unlike Apple's FaceTime, which works only with Apple devices, Duo works across iOS and Android. If you or a family member or friend has Android, Duo is a nice option.

Given Google's refocusing of Hangouts for the enterprise, it's possible that at some point in the future, consumers will no longer be able to use it. Right now, Google isn't saying – nor is it revealing what additional features Duo will get down the line.

My advice: For now, use Duo for one-to-one video calls and keep using Hangouts for all other video calls.

Email

Launched as a beta product in 2004, Gmail is (in technology terms) ancient, but has been recently upgraded with a modern interface.

The two-year-old **Inbox** is the newer of Google's two email offerings, and has the advantage of artificial intelligence, making it easy to use.

The Smart Reply feature of Inbox gives three reply options you can choose from with a single tap.

For example, the Smart Reply feature of Inbox, which is powered by advanced deep neural network machine learning, often gives you three reply options to a specific email message, which you can pick from by clicking on the best option. Google says about 10 % of users' replies in Inbox are now made using Smart Reply.

Inbox also intelligently bundles similar messages together, so you can dismiss them all with a single click or process them together. It highlights events, such as trips, clustering together flight and hotel information.

And you can even use Inbox to communicate with yourself, using reminders, assists and snooze messages or reminders based on date, time or even location.

Generally, Inbox is far more intelligent, automated and easier to use than Gmail. And it's better integrated, too, with hooks into Google Keep and Google Calendar. Users report that the coveted status of "zero inbox" (when you empty your inbox every day) is easier to achieve with Inbox than with Gmail.

Gmail, however, still gives users more direct access and control. Unlike Inbox, Gmail has an All Mail folder (where every single message appears), extensive options in Settings, including Filters and Blocked Addresses and experimental "Labs" add-ons. Power users love this stuff.

Gmail's busy Settings tabs are complex, but power users love the direct access and control.

I asked Google if it plans to combine the ease-of-use features of Inbox with the power user options in Gmail – or if it plans to phase out the older Gmail. A representative told me that Inbox was created not as a replacement for Gmail, but as an option and that the company plans to continue offering both.

My advice: If you want easy, use Inbox. If you want control, use Gmail. Or do what many power users do and use both simultaneously or interchangeably based on daily needs for optimum control of email.

Text messaging

Google offers five ways to chat by text: Allo, Hangouts, Messenger, Voice and Chat.

Let's start with the most elusive and mysterious of Google's messaging products: **Google Chat**. Before the standalone Hangouts app existed, you could do instant messaging and VoIP calls from Gmail and Google+ using Chat, but Google subsequently pushed users to the Hangouts app for those functions.

You can still use Chat in a web browser by going into Gmail, clicking your name in the left column, and then in the bottom frame of the pop-up menu clicking on “Revert to old Chat.” But I don’t recommend it. Hangouts offers more flexibility and a better user interface.

I added **Google Voice** to this category because Voice offers straightforward SMS and MMS text messaging, including group messaging, which you can use in the mobile app or on the website.

Messenger is Google’s best way to do text messaging. Sadly, it’s for Android users only.

Google’s best app for SMS and MMS is **Google Messenger**. Messenger has a great interface, and supports pictures, GIFs, emoji and group texts.

You can make it your default texting app, which means that when people text to your phone number, Messenger alerts you. And you can reply to incoming messages from the notifications themselves. However, Messenger is available only on Android.

Hangouts supports messaging as well, including texting (but it doesn’t support group SMS messaging).

Some power users use Messenger for texting with their Android phone’s number, and Hangouts for their Google Voice number.

And, finally, there’s **Allo**, Google’s newest way to chat, which was launched in May 2016. The app is available for Android and iOS.

The most unusual feature of Allo is artificial intelligence, which appears in two functions: You can chat with Google’s virtual assistant (called, well, Google Assistant) and use the same Smart Reply technology found in Inbox. Allo also has all the messaging bells and whistles, including stickers, emoji, visual effects, GIFs and conversation-specific themes. It’s likely that there will eventually be lots of third-party add-ons as well.

Allo has Google’s Smart Reply function, but the app doesn’t integrate gracefully with SMS.

Controversially, Allo’s end-to-end encryption is turned off by default, but you can turn it on by using an incognito mode, which also lets you make messages self-destructing and notifications private.

Allo has two significant restrictions. First, it must be associated with a single phone. You can’t use Allo on a tablet or laptop, and you can’t use the same account on two phones.

Second, Allo is awkward with SMS. You cannot set Allo as your phone’s default SMS app. And when you try to send a message to a non-Allo user (which on other platforms simply fails over to straightforward SMS), the recipient gets a text message not from you, but from a weird proxy number and a message asking if they want to opt out. If they don’t, you can exchange text messages. But they will always get the message from the proxy number, not yours.

Allo is great for talking to the Google Assistant, and the best messaging app for talking to someone else who also uses Allo. But it's weak for the vast majority of people who don't use Allo strictly.

My advice: If you're on Android, use Messenger.

If you use G Suite, go ahead and use Hangouts for messaging.

If you use Google Voice, then of course use Voice or Hangouts for text messages sent to the Voice number.

And if you're on iOS and looking for an all-purpose messaging product, I would not recommend Google. Instead, choose Apple's Messages app or Facebook's WhatsApp or Messenger. All these alternatives give you all the bells and whistles, plus the ability to include SMS contacts gracefully.

Social posting

Google offers two different ways to post in social contexts: Google+ and Groups. The most unusual aspect of Google's social services is that they're free and don't have advertising.

Google Groups is 16 years old! It's an all-purpose message board service for joining and engaging in threaded conversations on the web or via email. It also plugs into Usenet, which even predates the web.

Google Groups is what social networks were like before they were called social networks. The only reason to use Groups is if you have a holdout community that still uses the service.

Some people still use Groups because at some point they joined a Group (because of some event or organization), and that's where the conversation remains.

Google+ started in 2011 as the Mother of All Communications Networks. In Google+'s first couple of years, you could use the service to send email, text, make video calls, lifelog, edit and share photos and more. A few years ago, Google reversed its all-in-one approach and decided to pull out different communication features into separate apps.

Today, Google+ is like a cross between Facebook and Reddit, which is to say, a social network like Facebook but centered around moderated interests and topics like Reddit.

Google+ content is organized by "Collections", which enable people to follow your content à la carte – to get the posts they're interested in without getting the stuff they don't care about.

Google+ content is organized by "Collections" (user-created categories of content that only the creator can post to, but which followers can follow individually – so you can follow my "tech" posts without being subjected to my "food" posts) and "Communities", which are moderated user-created categories that others can join and all members can post to. Google's spokesperson told me that people are joining Communities at the rate of 1.6 million joins per day, and that Collections are growing even faster.

My advice: Avoid the antiquated Google Groups if you can.

Use Google+ if you like to talk about your interests, passions, hobbies or business.

The bottom line

I can't convince Google to consolidate and simplify its communication options. But I can offer my best advice for which products to choose and why.

If you want easy and simple, use Messenger, Duo, Fi (if you have the right phone) and Inbox. And use your phone for voice calls.

If you want power and control, use Gmail, Google+, Hangouts and Voice.

I don't recommend Allo, Chat or Groups.

Yes, Google's lineup of 11 communications apps and services is confusing. And, yes, Google has a reputation for terminating products. But for many, Google's amazing AI, search and integration are just too good to pass up.

http://www.computerworld.com/article/3164407/mobile-apps/googles-myriad-messaging-apps-which-are-best-for-you.html#tk.drr_mlt

Assignment 3. Work in pairs. Define the following notions.

1. Power user
2. Incognito mode
3. Snooze message
4. Straightforward billing plan
5. One-to-one video calls

Assignment 4. You act as a Google representative. Roleplay a presentation of Google apps to your potential users.

Text B

Assignment 1. Before reading the text study your active vocabulary.

Smartphone, home-screen, to set up the phone, malware, gadget, battery life.

Assignment 2. Scan the text about two main smartphones. Be ready to discuss it.

iPhone vs. Android: 12 points of difference

Choosing between the two main players in mobile depends on what's most important to you. Here's what you need to know to make the right decision.

Want to start an argument? Just say, "There's no question Android phones are the best," "iPhones are worth every penny," "Only a dolt would use an iPhone," or, "Android sucks," and then stand back.

Got that out of your system? Good. The truth is both iPhones running iOS and smartphones running Android have their good and bad points.

And make no mistake: The fight is between these two mobile operating systems. All the alternatives are pretty much dead and buried. Microsoft, for example, recently admitted, "We had no material Phone revenue this quarter." Canonical, Ubuntu Linux's parent company, has given up on smartphones. BlackBerry exists only as a brand name, and the manufacturer making "BlackBerry" phones is now using Android.

So today, and for as far as I can see into the future, your only real choices are Android smartphones and iPhones.

Here's how they match up on 12 key aspects of the smartphone experience.

1. Ease of use

People love to say Apple products just work. It's certainly true that the iOS interface is easy to use. But so is the Android interface. Frankly, if you can use one, you won't have much trouble using the other.

Sure, a decade ago, when the iPhone first appeared and Windows Mobile and Nokia Symbian phones were the competition, the iPhone blew them away. It was just so much easier to use.

But that was 10 years ago. Today, there's really not a lot that differentiates the two leading phone OSes when it comes to ease of use.

If we put appearance and home-screen setup into this category, though, things tip toward Android. Android smartphones give you more control over your system and its applications. I like control. If you're happy with what Apple gives you – this is your home screen; add a photo if you want to be an individual – good for you, but I like being able to set up my phone just the way I want it, and Android phones let me do that.

2. Fit, finish and price

iPhones are beautiful. Thank you, Jony Ive.

Android phones – well, they vary. Wildly.

Some, such as the Samsung S7 and the Google Pixel, are every bit as attractive as the iPhone 7 Plus. True, by controlling every step of the manufacturing process, Apple makes sure iPhones have great fit and finish, but so do the big Android phone manufacturers. That said, some Android phones are just plain ugly.

Part of the reason for this is that Apple makes nothing but luxury phones. There will never be a "cheap" iPhone. If you don't want to pay top dollar for an iPhone, your only choice is to get a used one.

Decent Android phones can go for as little as $100. Are they good looking? Not really, but they do the job at a fraction of the price of an iPhone.

3. Closed vs. open systems

The iPhone remains as proprietary as ever. If you don't want anything that you can't get through Apple, fine. On the other hand, if you're an iPhone user who wants to buy an Amazon e-book from the Kindle app or watch a Google Play movie using Play Movies, you're out of luck.

Android is both open source and far more open to alternative applications. Keep in mind, Apple hasn't ported any of its applications to Android and never will. So, if your music library is based on iTunes, then you're locked into iPhones.

For most users, this is a difference that makes no difference. But if you prefer open systems to closed ones, it's an important differentiator.

4. A.I. and voice assistants

When it comes to Google Assistant vs. Siri, there's no question of the winner: Google Assistant by a country mile.

Google Assistant is more than an excellent voice interface to Google search. If you use Google applications, such as Google Calendar and Google Maps, Google Assistant can make life simpler. Say you're meeting someone for lunch downtown and traffic is awful. Google Assistant will work out that you need to leave early to make your appointment, and it will notify you beforehand. Now, that is cool.

Siri may have been first to market, but it's still pretty basic. It's fine for answering questions, but it's not really that much of an assistant.

If you're looking for a clear reason to choose one OS over another, though, Google Assistant isn't it. It's also available for iPhones.

5. Timely updates

Here, on the other hand, is an area where Apple beats Android hollow. When Apple releases a new update or patch, all phones – those that are still supported, anyway – get it. With Android phones… it is pray and hope for the best.

Unlike the iPhone, where every detail is under Apple's control, with Android, Google supplies the base operating system and some programs, and it's up to the phone manufacturer to deliver upgrades and patches. With high-end phones, chances are you'll get the patches; with all the other Android smartphones, odds are you'll never even see a security patch.

According to Skycure, a mobile threat defense vendor, nearly three-quarters of Android devices are running with out-of-date security. For me, the surprise is that the figure is so low. I would have guessed 90 % of Android devices had out-of-date software.

This gets really old, so to speak.

On the other hand, iOS updates can be flaky. Apple needs to do a better job with quality assurance. I can't remember a single time that a major iOS update didn't result in a Wi-Fi problem, starting with iOS 6 and going up to the newest, iOS 11.

My Android updates, however, just work. When I can get them.

Advantage: Apple.

6. Security

It's not so much that Android has security problems; it's that Google is more lax than Apple about what applications it will let into its app store. True, the best way to keep malware off your Android gadget is to only get apps from the Google Play store; even so, Google reports that 0.16 % of all apps contain malware.

If you're an iPhone user, don't get too cocky. There is iPhone malware out there just waiting for an overconfident user to download a dodgy program.

Still, iPhones are inherently more secure.

7. Peripherals

I don't know about you, but I tend to connect my phones to other gear. Here, Android has the advantage. All Android devices use standard USB ports, so there are many gadgets you can connect to your phone. With iPhones, you need something that will connect with its proprietary Lightning port.

Another Android advantage is that USB cables and devices are cheaper than their Lightning port cousins.

8. Battery life and charging

This one's hard to judge, because every Android phone is different. In my experience, largely with Samsung and Motorola phones, Android phones don't need to be as recharged as often as iPhones. Your charging may vary, so let's call this something of a draw, depending on the phone in hand and how you use it.

9. Cloud integration

iCloud continues to be an enormous pain for me, no matter what platform I run it on. And I'm not the only one who has trouble with iCloud.

Android, however, is tightly integrated with Google's applications and services. I use Google apps all the time for work and fun. With an Android phone and Google Now home screen, I also get access to all the news I need, from the personal (local traffic) to the global.

Google Photos has unlimited storage and includes a decent basic photo editor. True, the iCloud Photo Library is good too, but accessing iCloud across devices continues to be problematic.

All in all, for cloud integration, Android is the one to beat.

10. Videoconferencing

Google can't seem to make up its mind about its voice, video and IM applications. I think Google Hangouts is now Google's master communications application, but I could be wrong.

With iPhones, it's Facetime, period. Facetime is a great videoconferencing program. I wish it ran on more than just Apple platforms, but if your whole family or workgroup is using Apple, you're good to go.

11. Cameras

I'm no camera expert, but I do know that cameras vary wildly on Android phones. That said, the Galaxy S8, which uses essentially the same hardware as the S7, does seem to be a bit behind the top-of-the-line iPhone 7 Plus.

Mind you, both cameras are very, very good. In my amateurish opinion, the iPhone is a bit better at most things. But the Galaxy models, with their wider-angle lens, are a tad better at selfies.

Advantage: The iPhone, in a photo finish.

12. Software choice

Once upon a time, you could argue that there were better apps on one app store than the other. These days, it's pretty much a dead tie. Besides, with 2.8 million apps on the Google Play store and 2.2 million on the Apple App Store, it's not like you're ever going to run out of apps to play with.

Pick one that fits your budget and needs

Put it all together, and there isn't a simple, one-size-fits-all answer for you. As I said at the outset, both phone ecosystems have their advantages and disadvantages.

It really comes down to your budget and what matters most to you. For me, the answer is Android, but I'm not going to fight with you if you prefer an iPhone – unlike some people I could name.

http://www.computerworld.com/article/2468474/mobile-apps/mobile-appsiphone-vs-android-five-points-of-difference.html

Assignment 3. Work in pairs. Decipher the following notions.

1. one-size-fits-all answer
2. top-of-the-line iPhone
3. high-end phone
4. have great fit-and-finish
5. out-of-date software

Assignment 4. Decide whether the following word expressions indicate positive or negative evaluation.

to be the one to beat, to beat hollow, to be a winner by a country mile, to be worth every penny, to blow away, to be lax about smth, to be a bit behind.

Assignment 5. Find as many words indicating ups and downs in business as you can.

Assignment 6. Get ready for a group debate on the problem: "iPhone vs Android: what to choose.

Text C

Assignment 1. Before reading the text study your active vocabulary.

Flagship phone, line item, bezel-less panel, display, wireless charging, low-end/high-end product, to inflate the price, touch bar.

Assignment 2. Scan the text about the coming of a new iPhone. What emotions does it evoke in the society?

A super-expensive iPhone is good news, even if you can't afford it

Write this down, look at it often, memorize it: You don't have to buy the new iPhone that Apple will announce this fall. You'll almost certainly want to, because it sounds amazing. Almost no bezel. Crazy new cameras. Facial recognition. Wireless charging. And the ability to turn anything it touches into gold bricks. But that doesn't mean you have to buy one. Apple almost certainly will offer other very good phones, including important but unexciting updates to the iPhone 7. So you can buy one of those. Or keep the phone you already have.

One thing you definitely shouldn't do is freak out over the price. Apple's next flagship phone will likely run you something like $1,200, which seems absurd given that Apple's best smartphones traditionally start at around $650. Part of the appeal of owning an iPhone, in fact, comes from knowing you, Kim Kardashian, and Tim Cook all carry the same device. But at 12 Benjamins, the iPhone becomes a dream for most people.

You probably don't care that a wildly expensive phone pads Apple's bottom line and reasserts the iPhone's luxury status. But even if you can't or won't spend that much on a smartphone, be happy knowing that some people can and will. That bonkers price tag gives Apple access to technology too rare and too expensive to put into 100 million $650 handsets. And that means Cupertino can innovate again – and once Apple does something, others follow. Before long, all the stuff coming to a phone you can't afford will come to a phone you can.

Anatomy of an iPhone

So why the eye-popping price? Simple: The next iPhone will be more expensive to produce. Start with the screen. It's the most expensive line item on nearly every phone. Apple spends $220 on parts for the iPhone 7, and an estimated $43 of that goes toward the screen. That big, bezel-less panel on the next phone is probably a pricey OLED from Samsung. It's at least 60 percent more expensive than the iPhone 7 screen, says Syl Chao, the CEO of Turing Robotics, a company building a phone with a similar display. Add in facial recognition sensors, wireless charging, and those cameras, and Apple's bill of materials climbs higher than ever.

We've seen smartphone prices change dramatically in recent years. Five years ago, more than half of smartphone buyers spent between $200 and $600 on a handset, according to analysis firm IDC. Today, nearly everyone buys either dirt-cheap or frightfully expensive devices. There's virtually no money to be made on the low end, so the high end becomes ever more competitive. Given the enormous role phones play in our lives, people want more and better features across the board, and happily pay for them. Phones last longer too – if you aren't replacing your handset every year or two, you can spend more when you finally upgrade. "For every iteration, it feels like consumers have higher and higher demands on us," says Carl Pei, cofounder of OnePlus. "If you look at our sales numbers, people seem to understand that good things cost money." Every OnePlus phone has been more expensive – and more popular – than the last.

Of course, there's a good chance Apple will artificially inflate the price to keep demand down. Nobody likes waiting months for their new phone, and some reports suggest Apple won't be able to make the device fast enough for everyone to get one quickly. New technology always comes with supply problems; it takes time to gin up the tools and processes to churn out tens of millions of anything. "Either the company that builds the tools ... can't build the tools fast enough for that company to supply Apple, or they don't want to get swallowed by the Apple machine," says Jason Keats, Apple's former lead iPad architect and now Essential's head of product architecture. If you get an order for 100 million iPhones, well, that's your year. A more exclusive phone lets Apple work with technology that's just not available in planet-blanketing quantities yet.

If Apple sells a phone at so elevated a price, the folks in Cupertino will create a new category of super-premium smartphones. I call them fancy phones. It's weird that an ultra-luxe phone market doesn't already exist; it's as if the Toyota Camry were the nicest car on the market. Most people don't buy super high-end stuff, but that's where most of the innovation happens. Even Apple operates this way: The bigger, more expensive iPhones got a second camera before the smaller, cheaper one, and the MacBook Pro got a wacky Touch Bar before the MacBook.

Apple won't be the only company to sell a phone at that price, either. Cupertino traditionally sets the bar for smartphone prices, and more than one competitor tells me that the only way to make buyers consider their device as an iPhone rival is to charge the same price. "If [Apple] says, 'Mobile phones are going to cost $1,200,' then $1,200 it is," Chao says. "For us, it's good news, because we can ride on the same wave." And with that, Apple's competitors can offer new technologies, techniques, and features without giving their handsets a price that seems outlandish.

All the iPhone stuff, I should remind you, remains mostly rumor and speculation. But trust me when I say this new class of fancy phones is coming. Does this smartphone stratification mean the end of a beautiful era of universal

technology, where everyone had access to the same stuff no matter their budget? Definitely. But fancy phones are good news. They'll bring excitement and innovation back to the smartphone game. Your smartphone won't have to be exactly like my smartphone anymore.

https://www.wired.com/story/a-super-expensive-iphone-is-good-news/

Assignment 3. Find corresponding synonyms to the following words and word combinations from the text.

1. Cheap product
2. Soon
3. Trendy
4. Crazy
5. To cost sb sth

Assignment 4. Discuss the following questions.

1. What are the characteristics of the new iPhone that make it a high-end product?
2. Is the price of the upcoming handset justified?
3. What problems may Apple face with the new iPhone?
4. Why does the author consider fancy phones to be good news?

Assignment 5. Split into groups of 3. Announce the news about the upcoming iPhone highlighting its expensiveness (use as many synonyms as possible).

Assignment 6. Split into groups of 3. Announce the news about an IT company highlighting it doing well on the business arena.

Assignment 7. Search in the Internet for interesting facts on fancy items in IT market. Make a vivid presentation on the problem: "High-end market is the place for innovations".

Text D

Assignment 1. Before reading the text study your active vocabulary.

GPS record, to stand toe-to-toe with the rival, to plug into, ad-free service, to respond to touch, to move one's finger clockwise or counterclockwise, to long-press.

Assignment 2. Read the text about a virtual assistant produced by Google. Make notes of key points.

Google Home might be a virtual assistant for you

Amazon's Echo is the undisputed ruler of the nascent smart home market – a tabletop speaker with a voice-controlled online "smart assistant" named Alexa at your beck and call to answer your questions, tell you a joke or control dozens of compatible networked products in your house.

But with the release of the Google Home, Google's own voice-controlled smart speaker, the Echo is finally getting some serious competition. Google, of course, already knows as much as or more about you than Facebook, thanks to your web history, your Gmail metadata and the GPS records on your phone. And now the tech giant is aiming to use that data to out-Alexa Amazon, making its little countertop speaker a friendly face for its search-engine-powered online brain.

The Google Home pulls info from your Google account to keep you informed about your calendar appointments and the traffic on your commute. The Home even remembers your previous questions to better answer you in the future. It can also control some of your smart-home gadgets along with your TV and speakers if you have Chromecast video or audio streamers.

Thanks to all of those features, I liked the Home when it first came out, but it wasn't ready to dethrone the Echo. Now, after a number of updates over the last six months, the Home stands toe-to-toe with its rival. The Home is better as a home entertainment device and as a personal assistant. It can even tell voices apart and give personalized responses to each of your family members.

The $130/£130 Home costs significantly less than the $180 Echo, but the petite $50 Echo Dot is the best deal of the bunch and plugs into your own speakers. Since Alexa still has more capabilities in the smart home, I'd recommend an Amazon Echo device if you're primarily interested in home automation.

If you're more interested in an entertainment accessory or you're invested in Google already, I'm now happy to recommend the Google Home. Plus, the balance of power isn't set in stone. Google's Android went from a one-time iOS wannabe to the world's dominant mobile operating system in just a few short years, and the Echo is pretty much the iPhone of the smart-home world right now.

Getting to know your new assistant

Now on sale in the US and the **UK**, purchase the Google Home for $130/£130 and you'll get six free months of YouTube Red, the site's premium ad-free service, which normally costs $10 per month. Again, the Home's US price converts to around AU$175; the Home will be available in Australia soon. It's also expanding to Canada, Germany, France and Japan. It's gaining support for multiple languages as well: French, German, Brazilian Portuguese and Japanese soon with Italian, Spanish and Korean coming later.

Without a doubt, the Home's design is excellent. Yes, it bears some resemblance to a canister of Glade air freshener, but I like the slick, clean look. The customizable bases snap on and off easily, letting you add a splash of color. The top responds well to touch. You can move your finger clockwise or counterclockwise to change the volume, tap to start or stop the music you're playing, or long-press to give the Home a command without saying the wake words, "OK, Google," or "Hey Google."

Here's a sampling of things you can ask the Home to do:

- Add items to a shopping list
- Check your calendar
- Set an alarm
- Snooze that alarm
- Set a timer
- Tell you about the weather
- Check traffic for your commute to work
- Play the news
- Answer a question involving a quick Google search
- Perform a calculation
- Call an Uber
- Play a customized daily briefing including traffic, weather and a news briefing you curate with the app

That list doesn't touch on what the Home can do as an entertainment device or a smart home controller – more on both in just a bit.

The Home app is easy to use on both iOS and Android and integrates the Home with Google Assistant, Google's answer to Siri and Alexa. First showcased in the company's Pixel phones, Google Assistant makes use of Google's services to provide personalized results in response to voice commands. However, Google Assistant on the Home can't do everything it can do on your phone. Some of the things the Home *can't* do yet include:

- Remove items or change your shopping list
- Send directions to your phone
- Create lists other than a shopping list
- Set reminders
- Interact with email

The Home also endeavors to have a personality. Alexa can be positively charming, and Google follows suit by offering Easter egg responses to statements like "I am your father." Google's responses, though, tend to either be bland or way over the top. Much like an assistant who's new on the job, the Home is friendly, but it's definitely trying too hard.

Learning on the job

Already a competent aide when it launched in November 2016, the Google Home has only improved since then. Most importantly, it will now customize answers for all of your family members based on who's talking. Each of your family members needs to download the Home app to a phone, then they will be able to train the Home to recognize their voices by repeating the wake words a couple of times.

The Home supports up to six different accounts and offers individualized responses to questions about calendars and traffic. The Home will also play personal playlists on request. The feature works well for the most part, as long as your family members don't sound similar. You can fool the Home's voice recognition fairly easily, which is why Google hasn't used it for anything security-related – such as unlocking doors or making purchases. For the sake of integrating multiple calendars, it works well enough.

You can now also use your Home as a recipe source. Search for a recipe on your phone, and you can send any of 5 million different options to the Home. It'll walk you through the ingredients and step-by-step directions. As opposed to just rattling through the instructions like it did at launch – and like Alexa does now – the Home can wait until you tell it that you're ready for the next ingredient or step and skip forward and back in the directions.

Thankfully, you can also add events to your calendar with your voice now, and soon, the Home will offer proactive notifications. If traffic's getting ugly en route to your next appointment, the Home will let you know. Better yet, you'll soon be able to make phone calls with the Home. Alexa and the Echo now offer something similar, but you can only call other Alexa-enabled devices. The Home will let you dial anyone in your address book.

Let's talk about privacy

As the Google Home deepens its integrations into more aspects of your life in the service of convenience, the inevitable questions torn from the pages of dystopian science fiction novels become more and more pressing. Is Google listening to me? How safe is my information? How do I weigh privacy against convenience?

With the smart home at the center of recent attacks on the internet, these are worthwhile questions to ask, and the Home probably won't have the answers to assuage all of your worries. That said, Google's saying the right things on this front. The Home only records what you say after you activate it with a tap, or with the wake words. You'll see it light up in response, so you'll know that it's listening. In the Home app, you can look over your search history and delete a specific query or clear the history entirely if you'd like. There's also a mute button that stops it from listening for its wake word at all. The Amazon Echo does all of those things as well, so the two are neck-and-neck here.

The art of conversation: Google Home vs. Amazon Echo

The Home's far-field microphone is about as effective as the Echo's – just be sure to speak clearly to either device if you have a complex command. Most of the time, I talked to the Home without hassle from across the large main room in the CNET Smart Home, a distance of roughly 40 feet. The Home heard me from adjacent rooms as well, given clear line of sight, and it even heard me through one wall – although I do have a booming voice.

For those with more of an indoor voice, or a place larger than a one-bedroom apartment, you might want multiple Homes so you always have one within shouting distance. If you give a command with multiple Homes in hearing range, every device that catches the wake words will light up, but only the one that hears you best will respond. There's a similar Alexa feature on Echo devices that also works well.

On occasion, the Home wouldn't respond to commands I know it understands. I'd have to repeat myself and punch up my pronunciation of the consonants. For the most part, the Home performs admirably, even when listening for you over music or background noise, again keeping up with – but not surpassing – the Echo.

https://www.cnet.com/products/google-home/review/

Assignment 3. Make up a list of features obtainable while using Google Home. Compare your list with your groupmates'.

Assignment 4. Split into two groups and compare Google Home and Amazon Echo. Find out pros and cons of both.

Assignment 5. Carry out a debate on the problem of privacy and safety in case Google Home is integrated into your house.

Text E

Assignment 1. Before reading the text study your active vocabulary.

Smart city, user terminal, custom interface, hotspot, laptop, fiber.

Assignment 2. Read the text about the concept of a smart city. What are your anticipations?

How smart cities like New York City will drive enterprise change

Laying high-speed fiber across an entire city and connecting sensor-based public Wi-Fi kiosks is good for the public – and very good for business.

Everybody talks about smart cities, but few are doing anything about it.

New York City is an exception. It's in the early stages of an ambitious project *to blanket the city with ultrafast Wi-Fi via smart kiosks*, which will replace obsolete public telephones.

These kiosks are the work of a Google-backed startup called Intersection. The company has already installed around 1,000 kiosks, and aims to install more than 6,000 more, Intersection Chief Innovation Officer Colin O'Donnell said in an interview this week.

Each kiosk is around nine feet high and relatively flat. Each flat side houses a big-screen display *that pays for the whole operation with advertising*. The screens also show emergency and other public information.

A smaller user terminal on the skinny edge facing away from the street *allows one user at a time to access information and make calls*. The screen is a locked-down Android *tablet with a custom interface offering a few apps to access various services*, including one for paying parking tickets and another for voter registration.

Below the screen on the left is a big, red button *for a one-press 911 emergency call.* Under that is an audio jack, *where non-iPhone users can insert their headphones or earbuds for privacy*. (The hardware supports standard audio jacks, but not Apple's newer lightning cable configuration.) Next to those options is a *numeric keypad for dialing calls*. And below all that are *two USB ports for charging devices.*

Each kiosk *provides free, high-speed Wi-Fi for anyone in range*. By selecting the Wi-Fi network at one kiosk, and authenticating with an email address, each user will be automatically connected to every other LinkNYC kiosk they get within range of. Eventually, anyone will be able to walk around most of the city without losing the connection to these hotspots.

Wide-angle cameras on each side of the kiosks point up and down the street and sidewalk, approximating a 360-degree view. The company claims it deletes stored videos after 7 days, unless there's a compelling reason to keep them, according to O'Donnell.

While the built-in kiosk tablet doesn't appear *to offer a high-performance user experience*, the public Wi-Fi is blistering fast – far faster than the average connection speeds offered by mobile carriers over cell networks. Some New York content creators producing massive amounts of content, such as HD videos, are now hauling their laptops down to the street for faster uploading.

Intersection has already installed 1,000 LinkNYC smart kiosks on New York sidewalks. It's planning more than 6,000 more.

This is possible because LinkNYC kiosks are connected by fiber.

It's paid for by the advertising and costs nothing to taxpayers. In fact, the city is expected to earn $500 million over the 10-year Intersection contract.

London is the second Intersection city, where the project is called InLinkUK and the kiosks are called "InLinks." The London project is more modest, with a goal of around 1,000 kiosks. O'Donnell told me Intersection plans to deploy in 20 more cities after that.

Intersection is tightly conjoined with Alphabet's Sidewalk Labs company, which works to accelerate and guide the creation of smart cities. They even share an office in Manhattan. Other partners in the LinkNYC project include Qualcomm and Civiq Smartscapes (BT is a partner for the London project).

Smart cities: the immediate impact

LinkNYC is already changing New York; two million people are now using the system – twice as many as in January.

The existence of smart-city implementations like Intersection's LinkNYC means that *New Yorkers won't actually need mobile contracts anymore*. Most who would otherwise pay for them will no doubt continue to do so for the convenience. But those who could not afford a phone contract in the past will have ubiquitous fast connectivity in the future.

This strongly erodes the digital divide within smart cities. A 2015 study conducted by New York City found that more than a quarter of city households had no internet connectivity at home, and more than half a million people didn't own their own computer.

At the same time, smart city kiosks widen the gap between urban and rural people, where the urban take a big leap forward and the rural stay behind with no solution in sight.

Smart cities are built on citywide fiber networks, which can eventually connect 5G wireless antennas on every street corner and every floor of every office building back to the core network. This densification of the wireless networks is the true hero of the smart cities revolution, enabling not only smart-city kiosks, but capacity for high-speed wireless applications on smartphones and tablets, *widespread IoT deployments, mobile augmented reality applications, self-driving cars and more*.

It's also amazing that New York is leading the smart city charge. Because if the concept can make it there, it can make it anywhere. *Dark-fiber deployments* in New York typically cost far more than in just about any other city because of heavy unionization and the scale of any disruption when streets have to be closed for fiber installation.

New York's example in aggressively enabling thousands of high-speed kiosks also puts pressure on other U.S. cities to follow suit. The first step is not only to wire up entire cities with fast fiber, but to architect it in a way that enables flexible deployment, as ZenFi is doing. And this is the best part of the smart cities revolution.

Smart cities: the long-term impact

O'Donnell claims that *smart city rollouts happen in three phases*, which he says is about "building the city from the internet up".

1. Instrumentation 2. Intelligence 3. Responsiveness.

New York is currently at the beginning of the instrumentation phase, where the immediate benefits are to underserved and under-connected members of the public. Over the next 15 years, the city will go through the other two phases, where

sensor data will be processed by artificial intelligence (A.I.) to gain unprecedented insights about traffic, environment and human behavior and eventually use it to intelligently re-direct traffic and shape other city functions.

The two most transformational technologies will be *augmented reality* (AR) and autonomous cars. AR won't be one specific set of technologies, but many variations that *will range from low-bandwidth and even offline applications to ultra HD streaming AR*.

New York's LinkNYC kiosks mean everyone in the city will have network support for high-end streaming AR as they move around the city. Enterprises operating in the city *can deploy top-of-the-line equipment and applications* and rely on 5G connectivity on every block.

And as autonomous cars gradually roll out, New York will be well positioned to be one of the first cities to legalize them, because they'll be safer thanks to 5G, sensors and data from all those kiosks. This will enable a revolution in delivery systems, among other things.

Risks and rewards

Smart kiosks do carry risks, however. One involves privacy. O'Donnell said privacy policies aren't set by Intersection but are negotiated agreements between the company and the city. So if a city wants *to use those cameras and sensors for surveillance*, it can.

But the biggest risk revolves around hacking and the theft of data, monitoring of cameras and – a worst-case scenario – eventual control of the "Responsiveness" phase technology, where mayhem is deliberately caused.

Futurists and tech pundits often assume that if a beneficial set of technologies exists, it will be implemented and widely distributed. But this is obviously not true. Technology revolutions require drivers to realize them.

In this case, New York City and Intersection are the drivers, showing the enormous benefits of ubiquitous high-speed wireless, as well as connected sensor stations all over a city. This will drive huge demand in other cities to replicate the technology, which will create demand for city-wide flexible dark-fiber installation, which will transform how enterprises operate.

For enterprises, the advances change assumptions about what's possible for how offices, warehouses, field service, delivery and, eventually, next-generation technologies will work.

The most important calculation is the question of where: Where should offices, warehouses, factories and other major locations be built? Answer: They'll gravitate to smart cities. Because the benefits to enterprises of ubiquitous and dense high-speed wireless, sensor-based city services and fiber everywhere will prove incalculable.

http://www.computerworld.com/article/3211402/mobile-wireless/how-smart-cities-like-new-york-city-will-drive-enterprise-change.html

Assignment 3. Render the words and phrases in italics into Russian. Compare your results with your groupmates'.

Assignment 4. Discuss the following questions.

1. What cities are participating in the smart city project?
2. How does a smart kiosk look like?
3. What features does a smart kiosk provide?
4. How is the smart city project paid for?
5. What is the immediate impact of smart city implementations?
6. What stages does the concept of smart city include?
7. What technologies will be transformed in the log-term perspective due to a smart city rollout?
8. What are the possible risks of an overall smart kiosks implementation?
9. What are the benefits to enterprises of using smart technologies?

Assignment 5. Split into small groups. Describe the concept of the smart city. Find out and discuss its pros and cons.

Assignment 6. You are currently working in the company named Intersection who is the clear leader in deploying real-world smart city solutions at scale. Your duty is to find new clients and present them the concept of the smart city trying to convince that the advantages will overweigh the disadvantages.

Text F

Assignment 1. Before reading the text study your active vocabulary.

Decline in sales, to maintain the lead, convertible 2-in-1, detachable.

Assignment 2. Read the text about the predictions of a new computer. Do you agree with the author?

Your next company computer may be a 2-in-1 laptop

While consumers and businesses are walking away from tablets, 2-in-1 laptops are finding their way into corporations in a big way; sales are expected to grow by more than 21 % a year over the next four years.

While consumer adoption of tablets is decreasing, business adoption is going the other way, powered by corporate fondness for Apple's iPad Pro and 2-in-1 devices running Windows.

The number of consumer-owned tablets is expected to decline about 3.3 % annually even as the number of business-owned tablets grows at a combined annual growth rate of 6.9 % by 2022, according to Forrester Research.

Global mobile device usage is expected to reach more than 5.5 billion users by 2022, almost double the total number of users (2.8 billion) in 2008, according a Forrester report released last week.

Large-screen smartphones are contributing to the decline in tablet sales among consumers, while the diverse use cases for a 2-in-1s is driving that segment's growth, Forrester stated.

Of the 5.5 billion mobile device users in 2022, smartphone owners will make up almost 70 % of the market.

Nearly 94 % of smartphones use either Android or iOS. Android is the dominant OS for smartphones, capturing 73 % of the market with more than 1.8 billion users in 2016. Android is expected to maintain that lead, according to Forrester.

The Forrester growth forecast includes detachable tablets such as the Microsoft Surface and iPad Pro but excludes convertibles like the Lenovo Yoga.

In another report, convertible 2-in-1s are taking off with business users, growing at 46 % worldwide year-over-year. That's according to IDC's Worldwide 2017 Q1 Personal Computing Device Tracker.

Over the next four years, detachables are expected to grow at 21.2 % CAGR, IDC said.

At the same time, basic tablets that aren't used as laptop substitutes are seeing a decline in business adoption. Slate tablets, according to IDC, are expected to see a decrease of 6.5 % in CAGR while notebooks and mobile workstations will only increase by 0.7 % through 2021.

Helping to drive the momentum are new 2-in-1 models with larger screens, such as the new iPad Pro, which has either a 10.5-in. or 12.9-in. screen and is offered with a detachable keyboard, and the Dell Latitude 5000 2-in-1 (with a 12-in. screen) and the Latitude 7000 (with a 13-in. screen).

"Commercial PCs are seeing a real renaissance in design, with form-factors like the 2-in-1 that we could only dream about just a few years ago now becoming reality," said Bob O'Donnell, president and chief analyst at TECHnalysis Research. "Dell's innovations in the 2-in-1 category, ranging from detachables to 360-degree hinge, are rooted in productivity while providing the flexibility and beautiful design that today's mobile workforce desires".

Last year, Dell announced it was killing its Android tablet business in order to focus on Windows-based 2-in-1 laptops.

Earlier this month, Dell announced its 2-in-1 laptop sales surged 48 % in the first quarter of 2017.

The larger 10-in. to 13-in. 2-in-1 screens can offer a "laptop-first experience with the convenience of a tablet when needed," Kirk Schell, Dell's senior vice president of commercial solutions, said.

"Our point of view is that the challenge with mobile devices is that they have to offer maximum productivity for a given use case," Schell continued. "Tablets were attractive because of what they offered in size, weight and flexibility, but ultimately fell short in supporting general office productivity because of limitations with the keyboard. Two-in-ones solve this problem by better integrating commercial class-designed keyboards into the DNA of the platform.

"We expect this segment of the market to continue to grow as creative use cases evolve in the commercial business," he said.

With the release of Windows 10, Dell's 2-in-1s and laptops are positioned to take advantage of the largest growth opportunities in the market, Schell said. Detachable tablets reached 8.1 million devices in the fourth quarter of 2015 and have more than doubled in shipments since the fourth quarter of last year.

"That said, traditional laptops remain the majority of our business and we expect that to remain the case for the medium term," Schell said. "Our customers tell us that laptops offer the best balance between consumption and creation, and we continue to drive improvements in size, weight and usability into classic notebooks".

Jitesh Ubrani, senior research analyst for IDC's Worldwide Mobile Device Trackers, said regardless of what marketers are saying, "detachable tablets are simply not putting pressure on notebooks yet".

"Consumers are just starting to graduate from old, consumption-based, slate tablets to a more productive detachable tablet. At the same time, the benefits of having a thin, touch-sensitive, productivity-based machine is shining light on the traditional PC category, causing vendors and consumers to focus on more premium devices in the convertible and ultra slim space," Ubrani said.

Excluding 2-in-1s, Forrester's research showed tablet use will remain low and grow from around 100 million units in 2016 to 155 million in 2022.

"The reason for growth in iPad Pro and 2-in-1 is the increasing adoption of these devices for office use as a second device," Forrester analyst Satish Meena, wrote in an email to *Computerworld*.

The iPad Pro accounts for around 10 % of total iPad sales currently, Meena said. But Forrester expects its share to grow in future due to the demand from business segment.

"However, the overall tablet market will keep on declining," Meena said.

http://www.computerworld.com/article/3211051/mobile-wireless/your-next-company-computer-may-be-a-2-in-1-laptop.html

Assignment 3. Surf the Internet and prepare short explanatory presentation on the difference between slate tablet – detachable tablet – convertible tablet.

Assignment 4. Contemplate on the future of tablet industry.

Text G

Assignment 1. Before reading the text study your active vocabulary.

To sell for peanuts, to achieve strong profits, to undercut competitors, to compete on price, best-performing.

Assignment 2. Read the text about future of tablet industry. Be ready to discuss it.

Tablet industry shrinks as Apple preps its iPad comeback

It turns out that selling tablets for peanuts isn't such a great business plan after all, who knew?

Quit the biz

That's got to be one way to see the recent *Digitimes* report, 'Weak tablet demand prompting vendors to leave segment', that tells us: "the current number of players that is still releasing tablet products is only one-third of the industry's peak."

The report is dealing particularly with Chinese white box vendors, but it also reveals most tablet makers are reducing headcount or focusing on specific industry verticals.

The problem? No one was making any money. "Apple is the only player that is still able to achieve strong profits from the tablet sector," says Digitimes.

Let's not act surprised

You can't stay in business if your business consists of attempting to undercut competitors. There is nothing to be gained from introducing iterations of the same thing when the only unique difference between the available devices is price.

Sure, some vendors may have hoped to create add-on services and peripherals income on the basis of the ecosystem their cheap products helped to create. In most cases they've failed.

Apple has not failed. The company has also refused to compete on price points, it's focus is on providing superior solutions that are easy to use. That's why iPads and iPad Pros remain among the best performing tablets money can buy.

They will only get better. Next year's iPads will deliver faster refresh rates, smoother animation, better zoom and software improvements.

Round the corner

Frost & Sullivan expect growth to return to the iPad range next year, which marries well with predictions from elsewhere. Their analysis is that the incredible reception iPads received skewed perception of the true strength of the market. Everyone bought one at once, and it is only once the replacement cycle begins that we'll see what the tablet industry is really made of.

At the same time, Apple's focus on providing the best products is part of why it has ended up making billions of dollars selling its products across the planet. Its business is certainly more sustainable and ethical than its tax rate.

That's not to say there isn't some space for cheap tablets. "For some tasks a dirt-cheap second-rate system from a competitor makes sense. It's not hard to find one, given competitors are pretty much giving their tablets away at unsustainably low prices in order to create the impression that Apple tablet is yesterday's hero in terms of market share," I wrote elsewhere.

Errors of judgement

Competitor made some big mistakes. They invested deeply in an industry they didn't understand and must now exit it as IDC predicts the industry is about to see some recovery. Consumers will find themselves choosing between the best-in-class iPad Pro, Microsoft Surface devices, and tablets from Asus and Samsung.

A second Digitimes report also predicts improvement in the tablet market next year, warning that Android makers will be impacted by Chinese brands.

Jean Philippe Bouchard, research director at IDC, in a statement said. "We see smaller slate tablets being offered at very aggressive price points, leaving little room for revenues outside of a pure volume or platform play like for Amazon for instance."

With a hugely lucrative services ecosystem to support it and a market identity as best-in-class, Apple's iPad range stands in a great position to benefit from next year's tablet explosion.

Meanwhile we can look forward to new Macs and the iPhone 7.

Apple sure seems to know how to keep things interesting.

http://www.computerworld.com/article/3114331/tablets/tablet-industry-shrinks-as-apple-preps-its-ipad-comeback.html

Assignment 3. Work in pairs. Find a synonym to the word.

1. Profitable
2. To elicit
3. Inferior
4. To affect
5. To undersell
6. Complementary

Assignment 4. Team Brainstorming. Split into groups of 3–4. Think of the profit by selling cheap gadgets. Each group presents its original ideas. Choose the head to generate and pick up the most perspective ideas to present them to the whole group summit. After considering all the groups' best ideas, choose the winner project.

Assignment 5. You are currently working in a company that produces tablets. You are negotiating business strategies with your boss who is indecisive whether to move on producing tablets or shift to laptops.

Unit 5
ENTERPRISE APPLICATIONS

Text A

Assignment 1. Before reading the text study your active vocabulary.

Milestone, to survive long term, valuable asset, to respond to customers' needs, to tackle issues, commodity, revenue, to align the customer.

Assignment 2. Read the text about the value of data in modern business. Make notes of key points.

Data is your customer

The answer to how to reach and connect with our customers is lying right in front of us.

If you're in business today, you've likely figured out the hardest part: engaging your customers. After overcoming that initial hurdle, it's tempting to see customer engagement as a fixed milestone.

The hard truth is that you won't survive long term if you aren't constantly trying to make the customer experience better. Today, your data is your customer and the most valuable asset in delivering an exceptional experience. If you don't curate it and value it as an iterative process, you're going to lose it.

But look at how companies treat their data: blank fields, data scattered across systems and outdated, duplicate or incorrect information. Data is how companies know their customers – their interests, intentions, buying habits – and customer experience is only going to be as good as your data.

As artificial intelligence and cognitive, prescriptive and predictive data take center stage in the coming year, don't blindly implement technology as the savior of your customer approach. Use these data-driven insights to achieve the business outcomes you want, nurture customers across their entire journey and set your company's brand experience apart.

Cognitive will be the standard to anticipate and respond to customers' needs, at scale.

By 2019, 40 % of digital transformation initiatives will be supported by A.I. capabilities. A.I. will be the driver of business intelligence, but cognitive computing will become the differentiator for your customers, as it has the ability to learn, reason, empathize and tackle immense issues just like a human being – at scale. This will be the standard to strive for on the path to A.I. and becoming more predictive, homing in on customers' needs, and helping employees have the right conversations with customers at the right time.

Companies are only beginning to adopt intelligent applications that help automate the next-best action by consuming data, transforming it into insights and then transmitting those insights across a company's enterprise. But Bluewolf's recent report shows that companies that have increased their investments in analytics in the past 12 months are three times more likely to see their data as a competitive advantage than companies that have not increased their analytics investments.

Data as a currency will rise and rapidly escalate in value.

If customers are data, they are being more careful about how they share this increasingly private commodity. It's a balance of trade, and we now live in an unsubscribe world. Research shows that fully engaged customers represent a "23 % premium in terms of share of wallet, profitability, revenue and relationship growth over the average customer."

To nurture engagement, brands need to establish trust with their customers. When customers trust a brand and the brand experience, they'll share more of their data. But customers need to know what they are getting in return: a great customer experience versus spam or their data shared or sold. And because customer interests extend beyond a moment in time, companies need to diligently pick them up and nurture them along the entire journey. If trust breaks down at any point during the relationship, you're going to lose it or pay more for it.

Business priority will shift from products and services to brand experience and customer moments.

Don't try to align the customer around your products and services, because people don't care. Customers are perceptive – they know when brands release new products with selfish intent rather than to serve their customers. They will abandon that sinking ship. The brand experience is what counts to your customers.

To get to a state where you can manage every customer moment, you have to put the customer at the center and use digital technologies to help determine where customers are in their journey. This customer-centric approach arms companies with meaningful insights to better align offerings, products and services across the journey and more accurately address the needs of the customer.

In the race to digital, we've lost something in the transformation process. We have forgotten to treat customers as human beings. Numbers don't drive real engagement and loyalty; people do. Leverage data to understand the specific moments that customers have with your brand to provide an authentic and positive experience.

And remember that all moments matter. Don't just focus on the moments that fall in the red zone, but the ones that peak.

http://www.computerworld.com/article/3150259/data-analytics/data-is-your-customer.html

Assignment 3. Team Brainstorming. Split into groups of 3–4. Think of business strategies that help to survive long term. Each group presents its original ideas. Choose the head to generate and pick up the most perspective ideas to present them to the whole group summit. After considering all the groups' best ideas, choose the winner project.

Assignment 4. You are currently working at one of the IT companies. Think of the name and your product. Work out a business plan that illustrates the effective use of Big Data.

Text B

Assignment 1. Before reading the text study your active vocabulary.

To mitigate risk, to gain new insights, to aggregate, latency, to infuse, to exploit.

Assignment 2. Scan the text on the essential Big Data technologies. Make notes of key points.

10 big data technologies you must know

As the market for big data analytics rapidly expands to include mainstream customers, it's important to know big data technologies that really matter.

Everyone's talking about data science, with its predictive modeling, data mining, and machine learning. But most of this would not be possible, especially on a large scale, without data engineering. Listed below are few big data technologies that every data engineer must know.

1. Predictive analytics: This technology, which includes both hardware and software solutions, will help your firm discover, evaluate, optimize, and deploy predictive models. This it does by analyzing big data sources, thereby improving business performance or mitigating risk.

2. NoSQL database: In comparison to their RDBMS counterparts, NoSQL databases are enjoying exponential growth. The NoSQL database type offers dynamic schema design, offering the potential for increased customization, flexibility, and scalability, that's much needed when storing big data.

3. Search and Knowledge discovery: You need to know these tools and technologies for the self-service extraction of information. Search and knowledge discovery are about gaining new insights from large repositories of both structured, as well as unstructured data that resides in sources, such as file systems, streams, databases, APIs, and other platforms and applications.

4. Stream analytics: If you need to aggregate, filter, enrich, and analyze a high throughput of data. Stream analytics looks into data that comes from multiple, disparate, and live data sources and in varying formats.

5. In-memory data fabric: This technology provides low-latency access and lets you process large quantities of data. It distributes data across dynamic random-access memory (DRAM), SSD, or Flash of a distributed computer system.

6. Distributed file stores: A computer network that stores data on more than one node, often in a replicated fashion, to deliver redundancy and performance.

7. Data virtualization: If you need information that's delivered from various big data sources, such as Hadoop and distributed data stores, in real-time and near real-time, data virtualization is your technology.

8. Data integration: Data integration is about tools that enable data orchestration across solutions such as Apache Hive, Apache Pig, Amazon Elastic Map Reduce (EMR), Hadoop, Couchebase, MongoDB, Apache Spark, etc.

9. Data preparation: To ease the burden of shaping, cleansing, sourcing, and sharing messy and diverse data sets that accelerate data's usefulness for analytics.

10. Data quality: The technology that conducts data cleansing and enrichment on high-velocity, large data sets. It utilizes parallel operations on distributed databases and data stores.

Big data technologies: things to note

All of these tools contribute to real-time, predictive, and integrated insights; exactly what big data customers want now. To gain the competitive edge that big data offers, you need to infuse analytics everywhere, exploit value in all types of data, and make a speed differentiator. All of this requires an infrastructure that can manage and process massive volumes of structured and unstructured data. Big data technologies must support search, governance, development, and analytics services for data that ranges from transaction and application data to machine and sensor data, to geospatial, social, and image data.

https://www.linkedin.com/pulse/10-big-data-technologies-you-must-know-naveen-joshi?trk=eml-email_feed_ecosystem_digest_01-recommended_articles-9-Unknown&midToken=AQE64x83YjctBA&fromEmail=fromEmail&ut=3jlQ9Ra6R9WnQ1

Assignment 3. Split into small groups. Search in the Internet for the most interesting Big Data tools and ELI5 them to your groupmates. Beware that ELI5 stands for the simplest and the most comprehensible way!

Text C

Assignment 1. Before reading the text study your active vocabulary.

IoT, botnet, patch, standalone, to exacerbate, to store on premise, to store in the cloud, lifecycle, cyberattack, flaw.

Assignment 2. Read the text on the notion of IoT and its impact on our life. What are your anticipations?

6 ways the Internet of Things will transform enterprise security

Most enterprise security organizations are unlikely to have a spamming refrigerator on top of their list of things to worry about. But news earlier this year that an Internet-connected fridge was co-opted into a botnet that sent spam to tens of thousands of Internet users is sure to have piqued the interest of at least a few.

If nothing, the incident showed how even a benign consumer appliance could pose a danger to enterprises if connected to the Internet without proper security protections.

Over the next few years, analysts expect tens of billions of devices to be connected to the Internet in similar fashion. The so-called Internet of Things (IoT) phenomenon promises, or threatens, depending on your point of view, to transform our understanding of the Internet and a networked world. A lot of what will transpire will be on consumer-oriented products. But as with everything in technology, what happens in the consumer world will inevitably affect the enterprise.

Here in no particular order are six ways the Internet of Things will affect enterprise security:

1. The IoT will create billions of new (insecure) end points

Analyst firms have differing takes on the number of devices or "things" that will connect to the Internet by 2020. Estimates range from Gartner's 26 billion devices to IDC's somewhat dystopian projection of 212 billion installed devices. Regardless of which is right, the one thing that is certain is that a *lot* of IP-enabled devices will one day find a home inside enterprises. Examples include smart heating and lighting systems, intelligent meters, equipment monitoring and maintenance sensors, industrial robots, asset tracking systems, smart retail shelves, plant control systems and personal devices such as smart watches, digital glasses and fitness monitoring products.

Many of the products will be single-purpose devices that originate in the consumer market. Others will have Internet connectivity added, almost as an afterthought, via cheap sensors. A vast majority will have little to no protection against common online attacks. The operating system, firmware and patch support that IT organizations have long been accustomed to, will not always be available with these devices.

The IoT inherently creates billions of insecure new endpoints, said Eric Chiu, president of cloud security vendor Hytrust. These IP-addressable devices will create new vectors of attack designed to either compromise the device or gain access to the enterprise network.

IoT devices will typically not be protected with whatever anti-spam, anti-virus and anti-malware infrastructures are available, nor will they be routinely monitored by IT teams or receive patches to address new security issues as they arise, Chiu said.

The idea that enterprises can somehow control whom to let in is going to go out the window, Chiu said. “Companies will have to just assume the bad guy is already there,” and respond accordingly. This does not mean abandoning perimeter defenses. Rather it means adopting a strategy that starts with presuming the attackers are already in the network, he said.

2. The IoT will inevitably intersect with the enterprise network

Just as there are no truly standalone industrial control networks and air traffic control networks anymore, there won’t be a truly standalone enterprise network in an IoT world, says Amit Yoran, general manager at RSA and former director of the National Cyber Security Division at the U.S. Department of Homeland Security.

Regardless of whatever network segmentation techniques and air gaps that an enterprise might employ, there will be points where the IoT will intersect with the enterprise network. Those touch points will be highly vulnerable to attack.

The IoT will pervasively connect to everything, including enterprise networks, Yoran said. “Today we have the enterprise network and the cloud. We know we have enterprise users coming in via BYOD directly to cloud-based resources without ever traversing the enterprise network,” he said.

The IoT will exacerbate the issue to a point where it’s going to be incredibly messy trying to control the various internal and external devices that gain access to enterprise data stored on premise or in the cloud.

“The IoT and the enterprise network will intersect. If you can hack into a web-enabled device which also happens to have connectivity to the corporate network or infrastructure, you can create a bridge to pass traffic back and forth,” from the enterprise, Yoran said.

“There are ways we can try and mitigate the risk,” he said. But in the end, everything will be interconnected. “You don’t have to look far into the annals of computer history to know that it is going to happen. We as a society are running headlong into it.”

3. The IoT will be a world of heterogeneous, embedded devices

Most “things” in an IoT world will be appliances or devices with applications embedded in the operating system and wrapped tightly around the hardware, said John Pescatore, director of research at the SANS Institute in Bethesda, Md.

In that sense, the IoT universe will be very different from the layered software model to which IT and IT security groups are so accustomed.

For one thing, the devices themselves will be highly heterogeneous and IT will have a hard time getting everyone to use the same technology, Pescatore said.

Many of the communications protocols in an IoT world will be different as well. Instead of TCP/IP, 802.11 and HTML5, IT organizations will have to deal with newer protocols like Zigbee, WebHooks and IoT6. And instead of the typical two to three-year IT lifecycles, IT will need to get accustomed to lifecycles ranging from just a few months to more than 20 years in the case of some devices, he said.

In a survey conducted by SANS, IT managers said their biggest concerns with Internet-connected devices related to smart buildings, industrial control systems, medical devices and consumer devices.

"The use of embedded computing in those devices, versus layered operating systems and applications in PCs and servers that IT is accustomed to managing and securing, will cause major breakage in existing IT management and IT security visibility," Pescatore said.

4. The IoT will enable physical and physiological damage

While online threats mainly affect data, in an IoT world there will be physical and physiological risks as well, said Michael Sutton, vice president of security research at Zscaler.

Hackers have already shown how IP-enabled insulin pumps, glucose monitors and pacemakers can be compromised to cause physiological damage to the wearer of such devices. Attacks like those enabled by Stuxnet show how physical equipment can be damaged via cyberattacks.

With the IoT, such attacks will also be possible against such products as cars, smart heating, ventilation and air conditioning systems, Web-enabled photocopiers, printers and scanners and virtually every other device with an IP address. The only reason that attackers haven't gone after such devices already in a major way is because there is so much other low-hanging fruit to attack, Sutton said.

In many cases, the bad guys won't even need software or hardware flaws to compromise a device. One of the biggest dangers companies will face in a world where everything has an IP address is configuration errors, Sutton said. Many of the devices that companies allow on their networks, like IP-enabled printers, photocopiers and webcams, will be put online with default settings that allow almost anyone with web access to take control.

5. The IoT will create a new supply chain

In a majority of cases, enterprises will have to either rely on device manufacturers for patching, firmware and operating system support or find a way to support the technologies on their own. Many of the devices that connect to the enterprise network in the not-too-distant future will be from companies that traditional IT security organizations are not familiar with.

"Like BYOD, traditional enterprises will need to adapt to developing policy and systems that integrate with and potentially manage many more devices than IT has ever worked with before," said Jason Hart, CEO of Identiv, a vendor of device authentication and identity management technologies.

"In addition to employees bringing new enabled devices into the physical and virtual workplaces, traditional non-connected devices, from a coffee machine to new ergonomic chairs, will place new workloads on IT support and information security," Hart said.

The vendors that will succeed in an IoT environment are those that can help enterprises manage the complex interdependencies there will be between new IP-enabled devices and the enterprise network, said Chris Yapp, a fellow of the British Computer Society and an independent security consultant.

Companies that have experience managing complex technology integrations will be the ones most likely to succeed in an IoT environment, he said. More often than not, traditional IT and security vendors are well behind the curve in understanding how the IoT trend will affect corporate IT, he said.

"The challenge for existing suppliers is that they tend to have a narrower focus and will take time to build the partnerships and in-house skills or acquisitions to compete," with the systems integrators, Yapp predicted.

6. The IoT will exacerbate the volume, stealth and persistence of online attacks

In theory at least, the threats posed by a completely interconnected world are not very different from the threats faced by most IT organizations today. Many companies are already intimately familiar with the challenges posed by smartphones, tablets and other wireless-enabled devices. What is different with the IoT is the sheer scale and scope of the challenge.

"The IoT includes every device that is connected to the Internet," said Kevin Epstein, vice president of advanced security and Proofpoint, a security-as-a-service vendor in Sunnyvale, Calif.

That includes everything from home automation products including smart thermostats, security cameras, refrigerators, microwaves, home entertainment devices like TVs, gaming consoles to industrial control machinery and smart retail shelves that know when they need replenishing.

Dealing with the sheer scale of the problem could be a huge challenge for IT organizations.

http://www.computerworld.com/article/2489549/security0/6-ways-the-internet-of-things-will-transform-enterprise-security.html

Assignment 3. Work in pairs. Define the following notions.

1. IP-enabled device
2. Single-purpose device
3. Malware
4. To store in the cloud
5. Smart retail shelf

Assignment 4. Decipher the following abbreviations and translate them.

HTML, TCP/IP, IT, OS, IoT, CEO

Assignment 5. Match the words with their definitions.

1. Botnet	a) permanent software programmed into a read-only memory
2. Firmware	b) facts and statistics collected together for reference or analysis
3. Tablet	c) tools, machinery, and other durable equipment.
4. Cloud storage	d) the series of changes in the life of an organism, including reproduction
5. Data	e) a preselected option adopted by a computer program or other mechanism when no alternative is specified by the user or programmer
6. IP address	f) a network of private computers infected with malicious software and controlled as a group without the owners' knowledge
7. Hardware	g) a unique string of numbers separated by periods that identifies each computer using the Internet Protocol to communicate over a network
8. Software	h) cloud computing model in which data is stored on remote servers accessed from the internet
9. Lifecycle	i) the programs and other operating information used by a computer
10. Default settings	j) a writing pad

Assignment 6. Discuss the following questions.

1. What are the expectations of using the IoT phenomenon?
2. How can consumer devices become smart in the concept of IoT?
3. What are the enterprise risks of using IoT?
4. In what way does the use of embedded computing differ from the layered operating systems?
5. What devices in an IoT world are considered to be the easiest target for cyberattacks?
6. What measures should be taken by enterprises to protect themselves?

Assignment 7. Share your impressions on the concept of IoT with your partner. How could you specify its pros and cons for enterprises?

Text D

Assignment 1. Before reading the text study your active vocabulary.

Semiconductor, microcontroller, to monitor, Bluetooth, cellular, hub.

Assignment 2. Read the text on the implementation of IoT at home. Be ready to discuss it.

The Internet of Things at home: Why we should pay attention

What is the Internet of Things (IoT), exactly? If you're a consumer, then the first thing that leaps to mind might be a Nest Wi-Fi thermostat, or perhaps those smart health bands that let you monitor your activity level from an app on your smartphone.

That's part of it. But if you're an engineer, you might think of the smart sensors that General Electric embeds in locomotives and wind turbines, while a city manager might be considering smart parking meters, and a hospital administrator might envision swallowable smart pill sensors that monitor how much medication you've taken or blood pressure cuffs and blood glucose monitors that can monitor patient health in the field and wirelessly stream updates into clinical systems.

The IoT is a catch-all phrase, a concept that includes all of these things. "We look at the IoT as a superset, the umbrella term that covers all areas, including consumer, industrial and public sector," says Hung LeHong, vice president at research firm Gartner.

But IoT is also built on enabling technologies. At its core, a smart thing is an intelligent, physical object that's communications enabled; each device is individually addressable, often with an IP address. A smart thing typically contains a semiconductor or microcontroller, along with a sensor or actuator – or both – to monitor the status of an object, person or environment, says Jim Tully, vice president at Gartner. Although they don't *have* to be wireless, most devices use wireless communications technologies such as Wi-Fi, Bluetooth, Z-Wave, Zigbee or a cellular data service to connect to a cloud service and associated mobile app that let users receive status information – and send updates or commands.

Smart IoT devices offer two-way communication on the status of an object, individual or the environment in real-time, says Michele Pelino, principal analyst at Forrester Research.

"It's more than just sensor networks," LeHong adds. "It's about being able to unlock your BMW when you lost your keys by using a mobile app," or the ability for the manufacturer to send software updates to your car wirelessly, or for people

to send cooking instructions to the oven before they get home. If it's instrumented to be part of the IoT, LeHong says, you'll be able to sense it, control it and send data to it.

The consumerization of IT is driving the IoT by driving down the costs of enabling technologies such as sensors and communications services. It is also blurring the line between business applications, such as the sensors used manufacturing and medicine, and consumer applications, such as smart thermostats. The same intelligence that unlocks your car may also be streaming data back to the manufacturer, creating a big data repository that can be analyzed to predict failures and improve overall reliability and performance.

Product-specific apps and cloud-based controls for individual smart devices, such as those that come with Wi-Fi thermostats and cloud security cameras, are slowly giving way to consolidated home automation systems that allow basic monitoring and control of every smart device on your home network, all from a single console. These systems often include a mobile app and website, a physical hub in the home that serves as a consolidation point and a third-party service that connects smart devices in the home with the mobile and Web application consoles that monitor and control them.

Home automation systems can also orchestrate how all of the intelligent things in the home react to an event by, for example, turning on lights, unlocking the front door and turning up the heat as you're driving home; or by arming the home security system, turning down the lights and thermostat, and shutting the blinds when you tell the system it's bedtime.

Eventually, home automation systems may collaborate with your local utility as well. Pacific Gas & Electric, for example, has already installed 9 million smart gas and electric meters on customers' homes. The next step, says CIO Karen Austin, will be to communicate directly with devices within what she calls the "home area network" to save energy, smooth out demand and allow the grid to run more efficiently. "The smart meters need to interact with smart thermostats and home networks so they can make informed decisions," she says. For example, if demand has peaked on a given day, "We could communicate that from the smart meter to the smart thermostat, and it could take appropriate action."

Ultimately, the combination of the IoT and analytics may lead to a world that anticipates our needs before we know them. Consider 24eight, a startup that sells smart slippers with pressure sensors in the soles. The slippers know when a person is standing and can predict the likelihood of a fall. But based on an analysis of data on how many users walk, says Tully, 24eight says that it can also predict whether a person might be in the earliest stages of Alzheimer's or is developing some other mental or physical condition that needs attention.

In the future, Tully says, most of the opportunities presented by the IoT will derive not so much from the little conveniences that smart things can offer to consumers as from what can be done by analyzing, in the aggregate, the vast volumes of data that all of these devices produce.

http://www.computerworld.com/article/2490360/consumerization/the-internet-of-things-at-home–why-we-should-pay-attention.html

Assignment 3. Discuss the following questions.

1. What areas does the term IoT cover?
2. How do smart devices communicate?
3. What helps to blur the line between business applications and consumer applications?
4. How do home automation systems work?
5. What are people's anticipations about IoT?

Assignment 4. Explain the meaning of the following words and word combinations.

IP address, semiconductor, microcontroller, sensor, Wi-Fi, Bluetooth, Z-Wave, Zigbee, cellular data service, cloud service, big data repository, consolidated home automation system, physical hub, startup**.**

Assignment 5. Prepare your personal presentation on the topic: "IoT at home – is it a dream or reality?".

Text E

Assignment 1. Before reading the text study your active vocabulary.

Vulnerability, bug, bandwidth, buffer overflow, to intercept, to disable a device, to install, to implement a protocol, firewall.

Assignment 2. Read the text on the issue of security while using IoT devices. Be ready to discuss it.

Hack brief: "Devil's Ivy" vulnerability could affect millions of IoT devices

The security woes of the internet of things stem from more than just connecting a bunch of cheap gadgets to a cruel and hacker-infested internet. Often dozens of different vendors run the same third-party code across an array of products. That means a single bug can impact a startling number of disparate

devices. Or, as one security company's researchers recently found, a vulnerability in a single internet-connected security camera can expose a flaw that leaves thousands of different models of device at risk.

The Hack

On Tuesday, the internet-of-things-focused security firm Senrio revealed a hackable flaw it's calling "Devil's Ivy", a vulnerability in a piece of code called gSOAP widely used in physical security products, potentially allowing faraway attackers to fully disable or take over thousands of models of internet-connected devices from security cameras to sensors to access-card readers. In all, the small company behind gSOAP, known as Genivia, says that at least 34 companies use the code in their IoT products. And while Genivia has already released a patch for the problem, it's so widespread – and patching so spotty in the internet of things – that it could persist unfixed in a large swath of devices.

"We made this discovery in a single camera, but the code is used in a wide range of physical security products," says Senrio chief operations officer Michael Tanji. "Anyone who uses one of the devices is going to be affected in one way or another."

While internet of things devices might be the most vulnerable to the Devil's Ivy flaw, Tanji points out that companies including IBM and Microsoft are exposed as well, though Senrio hadn't yet identified any of those companies' specific at-risk applications. "The scope and scale of this thing is arguably as big as anything we've been concerned about with computer security in recent history," Tanji says.

Not every security researcher shares quite that code-red sense of urgency. H. D. Moore, a well-known internet-of-things researcher for consulting firm Atredis Partners who reviewed Senrio's findings, points out that the attack would have to be configured separately for each vulnerable device or application, and requires sending two full gigabytes of data to a target, what he describes as a "silly" amount of bandwidth. But he nonetheless sees it as a significant and widespread bug – and an illustration of the danger of reusing code from a small company across tens of millions of gadgets. "This vulnerability highlights how supply chain code is shared across the Internet of Things," he writes. "With IoT, code reuse is vulnerability reuse."

Who's Affected?

Senrio's research began last month, when its researchers found a vulnerability known as a buffer overflow in the firmware of a single security camera from Swedish security camera maker Axis Communications. They say the bug would allow a hacker who can send a two-gig payload of malicious data to run any code they chose on that camera, potentially disabling it, installing malware on it or even intercepting or spoofing its video stream. And the attack, they soon discovered, worked for not just that one camera model, but any of the 249 Axis offers.

Axis quickly released a patch for the vulnerability. But the company also told Senrio that the bug wasn't in Axis's code, but rather in a code library distributed by Genivia as part of its popular gSOAP developer platform. And that gSOAP code is used – among other things – to implement a protocol called ONVIF, or Open Network Video Interface Forum, a networking language for security cameras and other physical security devices used by the ONVIF consortium, whose nearly 500 members include companies like Bosch, Canon, Cisco, D-Link, Fortinet, Hitachi, Honeywell, Huawei, Mitsubishi, Netgear, Panasonic, Sharp, Siemens, Sony, and Toshiba.

Just which of those hundreds of member companies use gSOAP – and might have left their products vulnerable as a result – isn't clear. In a phone call with WIRED, Genivia founder and gSOAP creator Robert van Engelen said 34 ONVIF companies used gSOAP as paying customers but declined to say which ones. (He also argued that practically speaking, only devices that are configured as servers, like cameras and sensors, would be vulnerable, not those that use gSOAP as clients, like phones and PCs, given those clients don't have open connections ready to be exploited over the internet. Senrio disputes that claim, arguing that malicious servers could use the vulnerability to exploit client computers, too.) Van Engelen also noted that his software is open source, so other companies may use it without his knowledge. WIRED reached out last Friday to the 15 major companies on ONVIF's member list named above to ask if they'd released specific patches for their gadgets. Almost all didn't respond or declined to comment, but a Bosch spokesperson said its products are not affected by the vulnerability. A Cisco spokesperson said the company is "aware of the matter and is monitoring" but declined to say – or perhaps didn't yet know – whether its products are vulnerable. "In the event we learn that Cisco products are affected, we will notify customers via our established processes," she wrote in a statement.

Using the internet-scanning tool Shodan, Senrio found 14,700 of Axis's cameras alone that were vulnerable to their attack – at least, before Axis patched it. And given that's one of the dozens of ONVIF companies alone that use the gSOAP code, Senrio's researchers estimate the total number of affected devices in the millions.

How Serious Is This?

The severity of Senrio's Devil's Ivy vulnerability will depend most of all on how widely it's been patched. Genivia's van Engelen says he moved quickly to create a security update as soon as Axis Communications told him about the problem, publishing a patch and alerting customers on June 21. But he describes himself as "a middle man". "I can't tell for sure if they applied the patch," he says of the 34 ONVIF equipment vendors. "That's their responsibility."

Whether devices are truly protected will depend on both the companies that use gSOAP making that patch available, and then on whether customers install it. Like most internet of things gadgets, the devices affected by Senrio's bug don't necessarily have automatic updates, or careful administrators maintaining them.

For the inevitable fraction of devices that aren't patched, Devil's Ivy may still not lend itself to a mass IoT meltdown. The majority of vulnerable devices that use the ONVIF protocol hide behind firewalls and other kinds of network segmentation, making them harder to find and exploit, says Jonathan Lewit, chairman of the ONVIF Communications Committee. And the need to send two full gigabytes of malicious data to target devices means a Devil's Ivy attack tool can't exactly be sprayed across the internet, says Moore. Instead, he suggests it could be used in a targeted fashion, one device at a time, or after gaining an initial foothold in a victim's network. Some implementations of gSOAP's code will also automatically limit the amount of data the device can receive in a single message, preventing Senrio's hacking method.

Its importance may rest, Moore says, in its example of how broadly a single bug can permeate these kinds of devices. "IoT affects our lives far more intimately than desktops," he says. "The prevalence of this vulnerability reminds us that without security for all the little computerized devices that we rely on, we're standing on a house of cards". That house's stability depends not just on the company you bought your device from, but every unnamed vendor that wrote the obscure corners of its codebase.

https://www.wired.com/story/devils-ivy-iot-vulnerability/

Assignment 3. Provide synonyms from the text to the following words and word combinations.

1. Flaw
2. To impact
3. Vulnerable
4. To spread
5. To make use of

Assignment 4. Discuss the following questions.

1. Where was a hackable flaw calling "Devil's Ivy" revealed?
2. What does the detected vulnerability allow hackers to do?
3. Why can companies remain vulnerable after detecting a bug?
4. Why does H. D. Moore consider "Devil's Ivy" not so dangerous?
5. What should companies do to protect their devices from hacking?
6. What are the consequences of device vulnerability in the IoT?

Assignment 5. Surf the Internet. Prepare mini presentations in pairs on the following topics (one topic for a pair).

1. Incorrect buffer handling can make a code vulnerable to a hacker attack.
2. Hardware – software – firmware.
3. Is it a curse or a blessing to use open-source code library?

Text F

Assignment 1. Before reading the text study your active vocabulary.

Net neutrality, traffic, streaming video, broadband, to enforce regulations, to dismiss the rules, delay notifications, consumer advocacy.

Assignment 2. Read the text on the notion of net neutrality. Why is it so vital for today's world?

The end of net neutrality could shackle the Internet of Things

Net neutrality isn't the simplest concept to grasp. Explaining it works best via example: Net neutrality means, say, that internet providers like AT&T, Comcast, and Verizon, which also have their own television and streaming video services, can't create "slow lanes" for competing services. They can't gum up traffic from sites such as Netflix and Dish's SlingTV in favor of their own.

But net neutrality doesn't just cover streaming video. It also ensures that you can use the devices that you want. Under the current net neutrality rules, your internet provider can't stop you from connecting any laptop, tablet, smartphone, or Wi-Fi router you want to your home network. Without net neutrality, the days when broadband companies and cell carriers could let traffic flow faster to one brand of phone or computer over another could be coming. And that's just the start.

With people connecting more and more devices, from voice-controlled personal assistants like Apple's forthcoming Home Pod to thermostats to cars, net neutrality becomes that much more important, even as the federal government moves to drop its own protections. Last month the Republican-led Federal Communications Commission started the process of overturning the agency's authority to actually enforce its net neutrality regulations. That means that unless either Congress or the courts intervene, net neutrality could soon be history.

Dismissing the rules could be a big problem for the future of the Internet of Things, since companies like Comcast – which is already working on its own smart home platform – certainly have the motivation to create fast and slow lanes for

particular gadgets and services. If your internet provider can decide which personal assistant or smart home gadgets you can or can't use, the broadband can dictate the winners and losers in the Internet of Things race. That wouldn't bode well for competition, innovation, or you.

A Latent Question

At first glance, net neutrality might not seem likely to have much impact on the IoT. Much communication between IoT devices won't actually happen on the internet but on private networks. Compared to Netflix, the sensors, thermostats, and Echo cylinders that will make up much of the IoT transmit a paltry amount of data.

But former FCC chair Tom Wheeler, who ushered in the agency's net neutrality rules and now sits on the board of IoT software company Actility, points out that even if the majority of the data moves across a private network, there's opportunity for interference from a service provider if that data ever needs to touch the public internet.

For example, say you want to get an alert on your phone when the security alarm at your factory goes off. Data will need to travel across the internet to get you that info. "The reality is that I need to know that information with low latency," Wheeler says. In other words, you need to hear that alert in seconds – preferably milliseconds – not minutes or hours. "Latency, as computers are talking to computers, becomes a very important thing. The question becomes whether there will be different levels of service, will there be paid prioritization?"

Sce Pike, founder and CEO of the "smart apartment" company Iotas, agrees that the loss of net neutrality could end up being a big deal even for companies that are moving relatively small amounts of data. "Even though IoT devices might have smaller data packets, their usefulness is to be able to do real-time monitoring and analysis. If they are throttled, then it negates the value of IoT devices," she says.

Today the Internet of Things is still nascent. Yes, many and perhaps most IoT products are insecure, frivolous, poorly made, or all three. But the IoT stands poised to improve our health, save energy and water, and boost crop yields around the world. The winners and losers in the race to deliver on these promises remain to be seen. Without a level playing field, we may never see the true potential of a more connected world.

For example, imagine Comcast or Verizon partnering with a few select internet connected smoke detector companies and then delaying notifications from smoke detectors made by other companies. New companies could not meaningfully enter the market without partnering with these major internet service providers. After all, who wants a slow smoke detector? "The future could end up being controlled by four companies," Wheeler says. "That's why open networks are important."

Without the FCC's net neutrality rules, providers might also be free to force you to rent a cable modem or Wi-Fi router the same way you already have to rent a cable box, or even to charge you for each computer, tablet, or IoT gadget you connect to the web. Instead of one flat fee for an internet connection that supports all your gadgets, you could end up having to manage multiple subscriptions.

This was a bigger concern in the early 2000s, when Wi-Fi and broadband were fairly new, and it's hard to imagine home broadband companies trying to stop people from using their own modems or imposing per-device fees today. "It may affect a small number of people, but the people it affects know where to go to scream bloody murder about it," says Phillip Berenbroick of the consumer advocacy group Public Knowledge.

But given how much the pay TV industry has fought rules_that would have allowed consumers to ditch their cable boxes, a pay-per-device dystopia is certainly not out of the question.

The broadband industry says you have nothing to worry about. Comcast, for example, told WIRED that it will follow basic net neutrality principles even if the rules are revoked, and even after its obligation to do so under the terms of its merger agreement with NBC Universal expire next year. "We won't block, slow down, or discriminate against lawful content," Comcast spokesperson Sena Fitzmaurice says. "We believe the best way to settle the regulatory and political ping pong that net neutrality has become is for Congress to pass legislation that will apply to all in the internet ecosystem."

It's nice that broadband providers are at least paying lip service to the idea of net neutrality. But with such an imbalance of power between users and corporate internet providers that face little to no competition in most markets, such words are cold comfort. Enforceable protections trump trust. The future of the IoT– and the internet itself – may depend on them.

https://www.wired.com/2017/06/end-net-neutrality-shackle-internet-things/

Assignment 3. Match the words with their definitions.

1. Laptop	a) a writing pad
2. Tablet	b) a device that forwards data packets to the appropriate parts of a computer network
3. Smartphone	c) a combined device for modulation and demodulation, for example, between the digital data of a computer and the analog signal of a telephone line
4. Router	d) a computer that is portable and suitable for use while traveling

5. Modem	e) a high-capacity transmission technique using a wide range of frequencies, which enables a large number of messages to be communicated simultaneously
6. Broadband	f) a cellular phone that is able to perform many of the functions of a computer, typically having a relatively large screen and an operating system capable of running general-purpose applications

Assignment 4. Discuss the following questions.

1. What is Net Neutrality?
2. What may happen if the current net neutrality rules are violated?
3. Does net neutrality have much impact on IoT?
4. Why is dismissing the rules of net neutrality could be a big problem for the future of the Internet of Things?

Assignment 5. Search in the Internet for the recent facts on net neutrality and results of FCC's decision-making.

Assignment 6. Draft a petition to the mayor of New York on the point of bringing back net neutrality, highlighting that net neutrality holds streaming services from unfair competition.

Unit 6
DATA SECURITY

Text A

Assignment 1. Before reading the text study your active vocabulary.

To hack, to pair smth with smth, to remote control, to bypass safety protections, to take control of smth, to handle with the utmost care, to nullify, to leverage, to discontinue the feature, to disclose the bugs, cryptographic signing, to validate, to eliminate the feature, to reinforce danger.

Assignment 2. Scan the text on IoT vulnerabilities. Translate the words in italics.

Watch hackers take over a Segway with someone on it

When you imagine riding a Segway MiniPro electric scooter, your biggest concern is probably falling on your face. Much lower on that list? The notion that attackers could *remotely hack* your ride, make it stop short, or even drive you into traffic. Unfortunately, as one reacher found, they could have done just that.

When Thomas Kilbride got a Segway MiniPro, its *paired mobile app* piqued his interest; by day, Kilbride works as an *embedded device security consultant* at IOActive. The app already has fairly potent capabilities as designed. You can use it *to remote control your scooter* or shut it off when no one's on it, and you could even use its social GPS tracking feature to show all Segway MiniPros in an area in real-time. But when Kilbride investigated the security behind those features, he found vulnerabilities that *an attacker could exploit to bypass the hoverboard's safety protections* from afar and take control of the device.

"I own a hoverboard, I use it quite frequently because parking is expensive", Kilbride says. "I was surprised that the exploits were as accessible as they were. Something like a transportation device should be handled with the utmost care and security, because somebody could be thrown off of it or seriously injured if an attacker decides that they want to hack it."

Easy Access

The Segway MiniPro app uses Bluetooth to connect to the vehicle itself. In addition to the features mentioned above, it can also *change device settings* and accept *firmware updates* to the scooter for tweaks and improvements. Think of it like a smart lighting app that talks to the bulbs.

While analyzing the communication between the app and the Segway scooter itself, Kilbride noticed that a user PIN number meant *to protect the Bluetooth communication from unauthorized access* wasn't being used for authentication at every level of the system. As a result, Kilbride could send arbitrary commands to the scooter without needing the user-chosen PIN.

He also discovered that the hoverboard's software update platform didn't have a mechanism in place to confirm that firmware updates sent to the device were really from Segway (often called an "integrity check"). This meant that in addition to sending the scooter commands, an attacker could easily *trick the device into installing a malicious firmware update* that could override its fundamental programming. In this way an attacker would be able *to nullify built-in safety mechanisms* that prevented the app from remote-controlling or shutting off the vehicle while someone was on it.

"The app allows you to do things like change LED colors, it allows you to remote-control the hoverboard and also apply firmware updates, which is the interesting part," Kilbride says. "Under the right circumstances, if somebody applies a malicious firmware update, any attacker who knows the right assembly language could then leverage this to basically do as they wish with the hoverboard."

As if that weren't enough, the Segway MiniPro app also provided one other tool to unintentionally aid in malicious activity. The GPS feature known as "Rider Nearby" acted as a sort of social platform for finding other MiniPro owners, but it's easy to see how publicly available, persistent location tracking could be abused. As part of addressing Kilbride's findings Segway discontinued the feature.

Regaining Balance

The good news is that IOActive *disclosed the bugs* to Segway, which is owned by Chinese scooter-maker Ninebot, in January, and the company addressed *the bulk of the problems* in an app update in April. As part of the changes, Segway added mechanisms like cryptographic signing *to validate firmware updates*, which should prevent full takeovers. It eliminated the Rider Nearby feature and took steps to evaluate its Bluetooth communication protocols and security. Segway has not yet returned a request from WIRED for comment. Kilbride says the company was responsive to his disclosures but notes that some weaknesses may still exist in the way users can access the device's Bluetooth management interface. The severe attacks Kilbride executed during his research aren't possible anymore, though.

Although patched, the extensive exposure in a digitally connected vehicle still reinforces the very real dangers of device hacking. IoT vulnerabilities have already led to real-world harm in many incidents, and "smart" transportation has long posed clear physical safety risks if left unsecured. For Segway, pairing an internet-connected device with a Bluetooth-enabled vehicle created exposures that a standalone scooter without digital connectivity would have avoided.

In terms of existential dread, you can find some reprieve in knowing that most hackers are seeking profit, and there isn't a lot of money to be made in maiming Segway riders. But stealing Segways, which someone could have done with Kilbride's exploits, could be a genuinely appealing scheme.

https://www.wired.com/story/segway-minipro-hack/

Assignment 3. Team up with students from your group. Make a list of potential dangers that may occur in case an IoT device is hacked.

Assignment 4. Search in the Internet for the examples of IoT attacks. Share the results of your investigation with your groupmates.

Text B

Assignment 1. Before reading the text study your active vocabulary.

Multi-pronged approach, vigilant updates, bug bounty, susceptible, to make smth a priority.

Assignment 2. Scan the text on security measures that should be taken by companies to protect their data. Give the gist of it.

How the new age of antivirus software will protect your PC

Antivirus software ain't what it used to be. The sneaky, sophisticated security threats your PC faces now have gone far beyond what traditional software can do. The future of protecting your PC will require a multi-pronged approach involving vigilant updates, bug bounties, and artificial intelligence.

Like any software, antivirus is susceptible to bugs. Earlier this summer, Google's Project Zero discovered serious flaws in enterprise and consumer products from Symantec that allowed malicious actors to take control of a computer. Symantec provided updates for the bugs, but some required manual installation from users, who needed to be in the know.

Symantec isn't alone. Project Zero regularly publishes findings that reveal security flaws in software made by Kaspersky Lab, McAfee, and FireEye, to name a few. Brian Soldato of NSS Labs, a security product testing organization, says his company has seen "unprecedented numbers" of vulnerabilities that are bypassing security software.

Patch, patch, patch

"Unfortunately, for the average consumer there aren't steps to take," said Udi Yavo, CTO of security firm enSilo, which has also been a thorn in the side of AV products through its security research.

It’s up to security vendors to provide updates, but consumers need to make patching a priority, even with AVs. You should raise an eyebrow if your security vendor isn’t providing regular updates.

“One of the biggest problems we find when these threats bypass [the AV] is they’re not patching often enough,” added Soldato. “Most of the time, if they had patched, they would never have been infected in the first place.”

Symantec is worth noting for how openly it communicates its patching schedule. But once a particularly nasty bug comes along, these patching practices can be thrown into disarray.

“They’re responding but in my opinion, they’re not responding fast enough,” said Soldato. In some cases, vendors are taking weeks to develop complex fixes. “Quite frankly, that’s too long,” he warned, giving bad actors plenty of time to take advantage.

Bug bounties will drive innovation

Security firms are now looking for outside help with bug bounty programs, which motivate the security research community to find vulnerabilities in exchange for money and bragging rights. Kaspersky Lab is the most recent AV maker to implement such a program. A spokesperson for the company said the bug bounty “supplements our overall existing strategy aimed at making our software products more secure.”

By making code available for audit, these companies open their AVs to more criticism. Ultimately, however, greater collaboration on security will lead to a stronger product.

Many AV makers acknowledge the need to innovate. Carbon Black bought “next-generation” AV startup Confer in July, and SparkCognition launched DeepArmor, which meshes “advanced artificial intelligence techniques” into antivirus to prepare for threats around the corner. Machine learning algorithms can differentiate between harmless and malicious binary files, trying to predict their behavior rather than just detecting a bad file that’s already present.

We should expect to see the traditional branding of antivirus fade away, claimed Morey Haber, VP of technology at BeyondTrust, a cyber security consulting firm. He predicts it will be replaced with labels like “endpoint protection platform” and “advanced threat protection.” But flaws will always persist.

“In reality, security systems are still written by people, and people make mistakes,” Haber added. “It is just a matter of time before a flaw is found in one of these new systems that will draw us back to the same conversation we are having now.”

http://www.pcworld.com/article/3120445/security/how-the-new-age-of-antivirus-softwate-will-protect-your-pc.html

Assignment 3. You are a security vendor who participates in the Security Exhibition and gives consultations to potential clients about how remain secure on the Internet.

Text C

Assignment 1. Before reading the text study your active vocabulary.

Encryption key, to be outfitted with, from scratch, random key generations, secondary authentication.

Assignment 2. Scan the text about recent researches on data security. Take notes of the key ideas.

Researchers propose a way to use your heartbeat as a password

Patients' electrocardiograph readings would be used as an encryption key to access their medical records

Researchers at Binghamton State University in New York think your heart could be the key to your personal data. By measuring the electrical activity of the heart, researchers say they can encrypt patients' health records.

The fundamental idea is this: In the future, all patients will be outfitted with a wearable device, which will continuously collect physiological data and transmit it to the patients' doctors. Because electrocardiogram (ECG) signals are already collected for clinical diagnosis, the system would simply reuse the data during transmission, thus reducing the cost and computational power needed to create an encryption key from scratch.

"There have been so many mature encryption techniques available, but the problem is that those encryption techniques rely on some complicated arithmetic calculations and random key generations," said Zhanpeng Jin, a co-author of the paper "A Robust and Reusable ECG-based Authentication and Data Encryption Scheme for eHealth Systems."

Those encryption techniques can't be "directly applied on the energy-hungry mobile and wearable devices," Jin added. "If you apply those kinds of encryptions on top of the mobile device, then you can burn the battery very quickly."

But there are drawbacks. According to Jin, one of the reasons ECG encryption has not been widely adopted is because it's generally more sensitive and vulnerable to variations than some other biometric measures. For instance, your electrical activity could change depending on factors such as physical exertion and mental state. Other more permanent factors such as age and health can also have an effect.

"ECG itself cannot be used for a biometric authentication purpose alone, but it's a very effective way as a secondary authentication," Jin said.

While the technology for ECG encryption is already here, its adoption will depend on patients' willingness to don wearables and on their comfort with constantly sharing their biometrics.

http://www.computerworld.com/article/3159661/security/researchers-propose-a-way-to-use-your-heartbeat-as-a-password.html

Assignment 3. You are participating in the international conference dedicated to cyber security measures. Make a vivid report on new security measures.

T e x t D

Assignment 1. Before reading the text study your active vocabulary.

Cryptocurrency, ledger, online transaction, bitcoin, unprecedented, to charge purchases, to eliminate, fraud, to be adopted by consumers, to meet requirements, to establish trust, to maintain trust, intermediary, single-use token, to mint coins, to print bills, to service ATM, to pledge, embezzlement, point-of-sale, fiat currency, steep inflation, to abide, to spur.

Assignment 2. Scan the text about cryptocurrency. Be ready to discuss it.

The case for bitcoin

Cryptocurrency promises online transactions at lower cost and with better security. Will the current leading cryptocurrency, bitcoin, succeed? The industry needs to get more creative.

The success of cryptocurrency – a medium for making and receiving payments over a network using digital bits and encryption – is inevitable.

The reason is simple. The Internet has spawned a global electronic marketplace delivering unprecedented speed, choice and competitive pricing. Yet payments are still made using technology developed by banks to let their customers charge purchases at participating retail stores. Cryptocurrency eliminates the infrastructure and costs associated with storing physical money, authorizing credit and transferring funds between financial institutions in different countries. And cryptocurrency is arguably the solution to online credit card fraud.

Does that mean that the leading cryptocurrency, bitcoin, will be adopted by consumers? That is a more difficult question. A cryptocurrency must meet three requirements to gain consumer acceptance: 1) It must be easy to use, 2) people must see it as a reliable store of value, and 3) it must be supported by a critical mass of merchants.

One thing is certain: Bitcoin is an epoch-making invention with a fascinating history. Bitcoin's decentralized public ledger, known as the blockchain, establishes instant trust between parties with no prior knowledge of each other. Blockchain enables Internet transactions to be executed directly between buyers and sellers without intermediaries – much like paying in-person with cash. A significant amount of number crunching is required to verify and record transactions in the blockchain, and the people and businesses that perform this service ("miners") receive transaction fees and newly generated bitcoins (the latter becoming harder to earn over time). Blockchain is a technological breakthrough in its own right that is being adapted to other applications requiring tamper-proof, shared records.

Bitcoin's advantages

Bitcoin has enormous advantages over credit cards. When purchasing something online with a credit card, an account number must be entered, encrypted and transmitted. When making a mobile payment with a smartphone, a single-use token is generated that points to a credit card account number stored in the cloud. A bitcoin is like a single-use token, except that it contains no reusable information.

Bitcoin eliminates the costs associated with building, maintaining and operating the infrastructure used to authorize and capture credit card payments. Bitcoin also spares small businesses the expense and trouble of complying with increasingly complex payment card industry (PCI) data security standards. Note that the chip cards now being introduced in the U.S. require new point-of-sale terminals but do nothing to make online credit card purchases more secure – they only protect against in-person use of counterfeit credit cards.

Bitcoin even has advantages over cash. Physical money requires vaults, secure transport and the ability to make change. There are costs associated with printing bills, minting coins, and servicing vending machines and ATMs. While stolen cash can be spent by anyone, the money in a stolen bitcoin wallet can only be spent if the thief knows the password. If the content of a stolen wallet was properly backed up, then the user can restore the bitcoins and keys to another device.

These bitcoin advantages are already proving beneficial to specific applications. Bitcoin enables recent immigrants to send money back to their families without incurring hefty international wire transfer fees. Bitcoin also enables poor people in developing countries who can't get credit cards or checking accounts to receive and make payments.

Mobile payments have become very popular in parts of Africa. Customers load money in their phone accounts by giving cash to agents stationed at popular locations (such as grocery stores). This enables customers to send payments via text messages – but only to users of the same phone service. Bitcoin could expand

this system, enabling payments to be sent to users of other phone companies. And bitcoin can be used to top up mobile wallets (such as Neteller) and debit cards (such as Belize-based Advanced Cash).

Rather than permitting children to use their credit cards, parents can use bitcoin to give them fixed online spending allowances. Bitcoin is also a good solution for micropayments. Bitcoin can be used where minimum transaction fees make credit card use impractical, such as paying small amounts to play multiplayer games or to remove ads from a streaming music service.

Donations for disaster relief made with bitcoin are received instantly. Bitcoin is an excellent solution for crowdfunding projects that pledge to only process received payments after announced goals have been met. Bitcoin can also be used by organizations to prevent embezzlement. For instance, bitcoins can be stored in wallets that require multiple signatures for payments, preventing misuse of funds by an individual.

Support for bitcoin

Numerous companies and organizations support bitcoin. Firms such as BitPay, SpicePay and Coinbase offer tools that enable merchants to accept bitcoin. BitPay delivers integrated solutions for online shopping carts, traditional point-of-sale systems, mobile device-based point-of-sale systems and other platforms. Coinmap provides maps showing the locations of businesses that accept bitcoin. Trezor, Ledger Nano and KeepKey are bitcoin hardware wallets that range in price from $50 to $240. Retailers accepting bitcoin include Overstock.com, PayPal, Dell, Expedia, 1-800-FLOWERS, Newegg.com, TigerDirect, Gyft and Microsoft. Companies such as BitQuick, CoinCorner and LocalBitcoins exchange bitcoins for fiat currency. Others, such as Purse, enable users to make purchases using bitcoin at online businesses that don’t accept bitcoins directly.

People will only embrace a new currency if they believe it is a good store of value. Although bitcoin has been somewhat volatile, *The Wall Street Journal* reported in 2013 that people in Argentina and Cyprus were buying bitcoins as a hedge against steep inflation and confiscatory taxes. People in those countries saw bitcoin as a way around unfavorable exchange rates, high fees and onerous regulations.

Bitcoin does introduce some new risks. In theory, there is the possibility that the same bitcoins could be used to make two purchases at the exact same time, a threat known as “double spending,” but in practice only one of the transactions will make it into the blockchain and the other will be discarded. For protection, merchants should wait for large transactions to be validated, which usually occurs within an hour, before delivering the goods or services. Consumers paying with bitcoin do not enjoy the additional refund protection offered by credit cards, but merchants must abide by their published refund policies in order to maintain

consumer trust. And some people worry that government regulations could discourage bitcoin adoption. To alleviate these concerns, former Rep. Steve Stockman has proposed a five-year moratorium on bitcoin regulation in the U.S.

Bitcoin vendors can do more to spur adoption. For starters, they can make bitcoin use as painless as possible. Consumers should only have to know that bitcoin transactions are less expensive and more secure. Vendors should make purchasing and storing bitcoins, backing up bitcoin wallets and paying with bitcoin as simple and automated as possible. Bitcoin is strange and unfamiliar to consumers. A little handholding may be in order.

More should also be done to promote bitcoin use by merchants and banks. Let's see initiatives to share the cost-savings with consumers, build the micropayments ecosystem, and reward users for reducing online credit card fraud by using bitcoin.

http://www.computerworld.com/article/3038065/e-commerce/the-case-for-bitcoin.html

Assignment 3. You are a journalist who is to write an article about cryptocurrency to help the audience be aware of the phenomenon.

Assignment 4. You are working in a currency exchange office. Share your knowledge on currency exchange rates. Give a tip to a person how to convert bitcoin right and not to lose money.

Text E

Assignment 1. Before reading the text study your active vocabulary.

Hard-fork, feud, niche product, to expand capacity.

Assignment 2. Scan the text about the split of bitcoin. Anticipate the consequences.

Bitcoin is splitting in two. Now what?

Imagine logging into your checking account and seeing that you now also have a second account, stocked with an equal amount of a newly created currency. It could happen this morning to many people who hold the cryptocurrency bitcoin.

Not long after 8 am EDT, a new currency called Bitcoin Cash is due to appear, split from bitcoin in a technical maneuver called a "hard fork." It's the project of a group that says bitcoin's keepers are limiting its reach by resisting change.

The creation of Bitcoin Cash is the most striking result yet of a 2-year-old feud over bitcoin's future. Bitcoin is collectively valued at $47 billion but remains a niche product. Backers of the new currency say it's necessary if bitcoin is to make a real mark on how the world uses money.

Bitcoin Cash's confusing origin – and name – risk making it harder for cryptocurrency to gain wider acceptance. "Bitcoin's an incredibly well-known brand, and to the extent it's fracturing into various pieces, that's confusing to regulators and consumers," says Dan Morehead, founder and CEO of Pantera Capital, which invests in bitcoin and digital-currency startups. Morehead says he's neutral on the dispute. "It just sounds bad; we're not used to currencies that split into two."

Adding to the confusion: Not everyone who holds bitcoin will get an instant stash of Bitcoin Cash today. Some leading bitcoin-storage services have said they won't recognize the new currency, forcing people to move their business if they want to claim the new variety of cryptocoins.

Bitcoin was created by a pseudonymous coder (or coders) known as Satoshi Nakamoto, who released the software that powers the currency in 2009. It relies on a network of computers linked over the internet that collaborate to process and record all transactions in a digital ledger called the blockchain. Computers dubbed "miners" keep the ledger updated by adding to the sequence of "blocks" that make up the blockchain as new transactions take place. Proponents say this system creates a trustworthy currency free from political oversight and capable of faster, cheaper digital transactions than possible with conventional currencies.

Acrimony among bitcoiners stems from disagreement about limits on the blockchain's capacity baked into Nakamoto's design, and what to do about them. The bitcoin network can only support around seven transactions per second, compared with thousands per second piped through conventional financial networks such as Visa.

Bitcoin Cash is a variation on bitcoin's design, incorporating much bigger blocks, allowing for more transactions in a given time. Supporters say their project is necessary because planned changes that could expand bitcoin's capacity are not sufficient. "At this point, it seems that the differences are irreconcilable, and a split is unavoidable," says Amaury Séchet, an ex-Facebook engineer who has developed code to implement Bitcoin Cash.

Owners of pre-split bitcoin will be recorded as owning cryptocoins on both blockchains. Some bitcoin exchanges – where owners transact and store cryptocurrency – have said that they will support the new currency and credit customer accounts with Bitcoin Cash when it appears. But others will not.

Bitcoin Cash's value, and its effect on cryptocurrency's place in the world, will be determined by how many investors and users switch from traditional bitcoin. Late Monday, one futures market pegged the value of a unit of Bitcoin Cash at about $300, roughly 1/10 the value of one Bitcoin.

The Bitcoin Cash adjustment to Nakamoto's original creation does help address the currency's capacity problem, says Emin Gün Sirer, an associate professor at Cornell who has studied bitcoin's design. "The science to the extent we've measured it aligns with their reasoning," he says. More important, and trickier, is whether enough people will use and invest in Bitcoin Cash to keep it going. "The crucial part is the amount of economic interest in this new currency," Sirer says.

Support by bitcoin exchanges will enable use of Bitcoin Cash. Crucially, that could motivate more miners to put their computing power to work on maintaining Bitcoin Cash's new blockchain, making it more reliable and stable, Sirer says. Miners are incentivized with new bitcoins for their work, and if Bitcoin Cash looks healthy, earning some early could strike miners as a good bet.

Would success for Bitcoin Cash come at the expense of the original bitcoin's ideals? It depends on whom you ask.

Defenders of the original design say too sharp an increase in capacity could raise the computer hardware requirements for contributing to the blockchain too much, opening the door to centralizing control in the hands of a few dominant players. Séchet argues he's fighting for the soul of bitcoin, and Bitcoin Cash will force the cryptocurrency community to take scalability more seriously, even if the project fails. "Either bitcoin does not scale, and Bitcoin Cash will overtake it over time, or it will scale because of the pressure created by Bitcoin Cash," Séchet says. "Either is a win for bitcoin users."

Some trying to build businesses on top of bitcoin are becoming frustrated by the ongoing arguments. "It really has dragged on," says Morehead of Pantera Capital. Nobody ever said that upending the financial system would be easy.

https://www.wired.com/story/bitcoin-is-splitting-in-two-now-what/

Assignment 3. Working in small groups, contemplate on the consequences of bitcoin split. What will prevail: pros or cons?

Text F

Assignment 1. Before reading the text study your active vocabulary.

Ransomware, scam, to extort, to lure, to entice, illicit.

Assignment 2. Read the text about bitcoin scams. Make notes of key ideas.

Bitcoin scams: Beware of crooks trying to steal your cryptocurrency with these schemes

Cybercriminals are successfully taking advantage of social media and naivety to steal Bitcoin and distribute malware.

The cryptocurrency has become invaluable to cybercriminals who exploit its anonymous, decentralized nature as a tool for demanding ransomware payments and laundering various other ill-gotten gains.

This month social media Bitcoin scams have reached a new high, with over 125 million malicious links across Twitter, Facebook, and Instagram designed to attack victims and extort Bitcoin.

These Bitcoin scams target social media because it's full of people who might be interested in buying and selling Bitcoin, but don't know much about it – making them prime targets to be taken advantage of by scammers.

In a report detailing the spike in this cybercriminal activity, researchers at ZeroFOX have identified four main categories for these scams, each using different methods to steal Bitcoin and carry out other cybercrimes.

1. Malware hidden in fake Bitcoin wallets

The nature of social media means that users click on what they perceive to be interesting links – and the chance of an easy way of getting Bitcoin might be enough to catch some users. Cybercriminals know this and are luring Twitter users into following links which distribute malware.

Not only could users find that their details are potentially compromised by cyberthieves, or their device roped into botnet, but also the cybercriminals will generate revenue from successfully luring victims into clicking these links.

The lesson here is that if an offer on social media sounds too good to be true, it usually is – especially if it's coming from an anonymous or default account.

2. Bitcoin phishing

Cybercriminals are posing as legitimate Bitcoin services, impersonating brands in order to gain trust from victims. Behind these veneers of credibility are phishing websites which entice users to enter their Bitcoin keys. But once the key is entered, the hacker is able to freely spend from the victim's wallet.

3. Bitcoin "flipping"

Many people buy Bitcoin in the hope that it'll go up in value and they can make a profit by selling it at a later date. Impatient investors often turn to Bitcoin flipping schemes in attempt to make a quicker profit.

Typically, these schemes offer to rapidly increase a user's investment – for a fee. Cybercriminals are taking advantage of this by distributing links on social media, which claim they'll flip Bitcoins, but the real intention is stealing from those naive enough to make payments via links they've found on social media.

4. Pyramid schemes

The final Bitcoin scam experiencing a spike in popularity is the classic pyramid scheme.

Cybercriminals encourage people to sign up to a scheme with a low initial investment – then reap rewards when they sign up new members to the scheme. It doesn't take long for hundreds of people to have handed over a payment, at which point the original scammer walks away – taking a wedge of ill-gotten Bitcoin gains with them and leaving victims out of pocket.

The total number of social media URLs sharing links to these four types of scams came to 126,276,549, say cybersecurity researchers at ZeroFOX, with 3,618 unique scams identified. The high number of scams suggests that botnets are being deployed in order to spread links.

Scammers, be they peddling Bitcoin or otherwise, love social media for all the same reasons modern brand marketers do. They can reach any target demographic across the globe by choosing the right hashtag, said Phil Tully, senior data scientist at ZeroFOX.

"The ease of use has never been simpler, the cost has never been lower, and the power and scale has never been greater. For a cybercriminal, it's the new superhighway for illicit activity; billions of victims, lacking security controls and uninhibited access," he added.

http://www.zdnet.com/article/bitcoin-scams-beware-of-crooks-trying-to-steal-your-cryptocurrency-with-these-schemes/

Assignment 3. Team up for a discussion of different bitcoin scams and the potential dangers connected with them.

Assignment 4. Search in the Internet for interesting data scams. Prepare a catching report how to avoid being trapped.

Unit 7
CAREER IN IT

Text A

Assignment 1. Before reading the text study your active vocabulary.

To upgrade one's marketable skills, earning potential, labor shortage, applicant, to filter candidates, wages, competencies, CRM, rival, to validate skills, assets, cutting-edge, six-figure salary.

Assignment 2. Scan the text on IT certifications. Do you agree with the author about their role in pursuing a successful career?

IT certifications report card: What are they worth now? Which ones pay off the most?

Start off the school year with a fresh look at this IT career workhorse to upgrade your marketable skills and earning potential.

Are a few extra letters on one's CV and LinkedIn profile really worth the cost in time, effort and dollars, when the big demand for information technology professionals shows no sign of retreating?

The case for certifications is still very strong, judging by the pace of new certification introductions alone. Equally persuasive are ongoing labor shortages in technology and the pressure facing recruiters, human resource departments and IT hiring managers to quickly fill these increasingly critical positions with qualified, fully trained applicants.

Unique keywords such as CompTIA, MCSE, CISSP and PMP – all indicators of popular IT certifications or certification bodies themselves – serve as a proven means to filter candidates in technology's highly competitive environment. (That's also something to keep in mind if the next economic downturn hits IT as hard as it will other occupations.)

Bolstering this argument is the comprehensive, substantive and credible research from sources like established IT search firms on the higher wages typically granted to those with advanced certifications.

To help you chart your ongoing education wisely, here's a full review of today's most rewarding IT certification areas, based on the trends driving the value of the knowledge and competencies they impart. These are: mobile application development, IT networking and security, HTML5 programming, project management certification and CRM software expertise.

So much power, so small a device

For a winning bet on technology's future, remember the word "convenience."

Just as previous time- and labor-saving breakthroughs have done, our wireless lifestyles have totally reshaped the workplace. Most companies now provide mobile devices to their employees; those that still haven't implemented a "bring your own device" (BYOD) approach.

Mobility is so beneficial to productivity, it's hard to imagine any healthy, viable organization without it. All aspects of smartphone functionality – from setup, administration and software development to security – have an applicable certification added in.

Although Apple's first iPhone left consumers everywhere instantly smitten, the landscape is constantly changing. Worthy rivals, like Android and more recently Microsoft's Windows 8 (now Windows 10) platform, have emerged and, in Android's case, surpassed iOS, proving the market is very dynamic and unpredictable.

Expect organizations to ramp up their mobile app development capabilities, especially in support of two important tasks: faster data analysis and customizing mobile versions of third-party business software mainstays like customer relationship management (CRM). There will be a corresponding demand for training and certifications to validate the relevant skills of mobile app developers. Certifications will also be developed to deal with a variety of other issues related to mobile devices and apps, such as architecting a secured wireless environment.

Stop, cyberthief!

That last item evokes the unsettling, omnipresent vulnerability of our presence in cyberspace. It also demonstrates one reason why security wins the IT certification sweepstakes once again and will likely hold onto that top spot for years to come.

Black-hat hackers prowling for unauthorized access to our intranets and all those databases and processing services we've moved to the cloud have, like a tech-savvy Willie Sutton, followed the money to our wireless networks and straight toward our bank accounts.

Victims of mobile phone malware heists, along with their fellow customers, friends and families, will easily make the connection between protecting their assets and financial services companies with cutting-edge security know-how.

Meanwhile, there's been no holiday from what are now more traditional forms of cyberattacks. Instead, these threats have grown in scope and sophistication.

Consequently, many banks, online stores, credit card clearinghouses, medical treatment centers and government agencies – anywhere there's a valuable database to be sold or held for ransom – offer six-figure salaries to those with an IT security certification. IT workers in a growing number of governmental, military and civilian security posts are required to maintain their certifications.

http://www.computerworld.com/article/3121583/application-development/it-certifications-report-card-what-are-they-worth-now-which-ones-pay-off-the-most.html

Assignment 3. Discuss the following questions.

1. What for do companies require IT certifications from their applicants?
2. What IT certification areas are considered to be the most rewarding today?
3. What type of certifications will be in high demand in the near future?

Assignment 4. Roleplay a situation during a job interview. A hiring manager from an IT company is interviewing an applicant for a job.

Text B

Assignment 1. Before reading the text study your active vocabulary.

IT executive, to have technical skills, to be into sth, to be an active listener, to keep up with the developments, to lack general business savvy, to be strategic in one's outlook, to exhibit curiosity about sth, to have domain expertise, to appreciate the nuances of internal and customer politics, likeable, to manage a career, in-demand skill set.

Assignment 2. Scan the text on IT career advice. Do you agree with the author?

3 steps to better IT career management

While every career involves a bit of luck and serendipity, they can and should be managed. Several of my futurist colleagues and I have been thinking about where, in these turbulent times, IT executives should go for career advice.

We began by considering how IT career advice has evolved. Thirty years ago, the field of IT career advice was an unregulated wilderness of divergent actors. There were academics, rock-star executives, psychologists, bestselling authors, shamans/gurus and snake-oil salesmen.

Back then I worked at a boutique IT consultancy with a guy I'll call Mr. Average. This guy was not impressive. He had no technical skills to speak of (he did not code or possess any certifications). He was not into networking. He was not an active listener. He did not keep up with developments in any industry or field. He lacked general business savvy, was not strategic in his outlook, exhibited little or no curiosity about the future, did not have any domain expertise in a vertical market, and repeatedly failed visibly to appreciate the nuances of either internal or customer politics. To top it all off, he was not very likable either. So, during one of the IT industry's many cyclical downturns,

it surprised no one there that Mr. Average left the company. What did surprise us was what he chose to do. Mr. Average set himself up as a single-shingle "career adviser." He did this semi-successfully (meaning he was able to feed himself) for over a decade. The success of his clients is another matter entirely.

Today, the IT career advice industry is huge, but it's still absolutely unregulated. I long for the day when a firm such as Gartner or JD Power publishes data about how the IT professionals who have paid for the services of these advisers have done. Clients need to know whose advice is most likely to pay off.

While every career involves a bit of luck and serendipity, there are some fundamental blocking and tackling preparations one can undertake to maximize the hopes of creating a sustainable work trajectory. Careers can and should be managed.

Step 1: Select a high-growth vertical market

Historically, career advice began by counseling wannabe world-beaters that vertical market choice mattered greatly. The global economy, forecast to grow in the aggregate 3.5 %, (World Economic Outlook) does not grow evenly. Some regions and some industries will grow faster than others. Situating oneself in a high-growth vertical market does not guarantee career success but increases the probability of positive opportunities.

Depending on which consultancy or think tank you prefer, there exist a variety of lists suggesting which industries will dominate the future. If you put all the lists together and look for patterns, the one vertical market/ecosystem that *everyone* agrees will be big in the future is healthcare/wellness/biotechnology.

Step 2: Select a high-demand skill set

Aaron Levie, the sneaker-wearing CEO at Box, has told C-level audiences, "If you want a job for the next 10 years, work in IT. If you want a job for life, work in cyber security." Security is hot and will remain hot for at least the next 15 years.

Chief information security officers are always looking for new talent. The responses they get from job postings are filled with IT people who want to move over to the security space. I think there is a *huge* opportunity for educational institutions – in *every* geography – to create a curriculum that allows mid-to-late-career IT professionals to reinvent themselves as infosec experts. I welcome readers' thoughts on what that curriculum might look like and how long it should take.

Any list of hot and very much in-demand skill sets would also include high-end analytics, artificial intelligence and machine learning.

Step 3: Craft the next-generation résumé

Kevin Grossman (*Tech Job Hunt Handbook*) is not alone in detesting the résumé as a skills communication device, writing that "the résumé is a self-serving piece of inconsistently formatted and fudged professional drivel". Michele Weise

(co-author, with Clayton Christensen, of *Hire Education: Mastery, Modernization, and the Workforce Revolution*) suggests using a competency grid to help visualize one's skills.

In the retail and hospitality space, customers use apps such as Yelp and TripAdvisor to rate customer experiences. Wouldn't it be interesting if we could rate what it's like to work with our job colleagues? That kind of transparency might actually change workplace behavior for the better.

In the modern era, badges, microcredentials and certificates give some inkling what an IT worker can and cannot do.

In a world where machines are becoming exponentially more capable, every job will be impacted. Some in the futurist community are forecasting a postwork future.

The best career advice is to engage actively and constructively with multiple communities. There is probably a gathering of senior IT professionals in your area. Become part of that. If such a gathering does not exist, start one.

http://www.computerworld.com/article/3199645/it-careers/3-steps-to-better-it-career-management.html

Assignment 3. Explain the following terms to your partner.

1. Career management
2. Vertical market
3. C-level audience
4. Boutique IT consultancy
5. Internal politics
6. Curriculum

Assignment 4. Discuss the following questions.

1. What professional skills should a person possess not be average?
2. How can career advice industry be estimated?
3. What advice does the author give to the future graduates?
4. What career advice is in your opinion most likely to pay off?

Text C

Assignment 1. Before reading the text study your active vocabulary.

Blue-collar job, pink-collar job, gender pay gap, to be a hard sell, outsourcing, automation, low-paid, universal basic income.

Assignment 2. Scan the text about automation. Can you predict its consequences?

Men will lose the most jobs to robots, and that's OK

Robots are coming for our jobs – but not all of our jobs. They're coming, in ever increasing numbers, for a certain kind of work. For farm and factory labor. For construction. For haulage. In other words, blue-collar jobs traditionally done by men.

This is why automation is so much more than an economic problem. It is a cultural problem, an identity problem, and – critically – a gender problem. Millions of men around the world are staring into the lacquered teeth of obsolescence, terrified of losing not only their security but also their source of meaning and dignity in a world that tells them that if they're not rich, they'd better be doing something quintessentially manly for money. Otherwise they're about as much use as a wooden coach-and-four on the freeway.

There's hope for mankind, but it'll be a hard sell. The way we respond to automation will depend very much on what we decide it means to be a man, or a woman, in the awkward adolescence of the 21st century.

Some political rhetoric blames outsourcing and immigration for the decline in "men's work," but automation is a greater threat to these kinds of jobs – and technological progress cannot be stopped at any border. A recent Oxford study predicted that 70 percent of US construction jobs will disappear in the coming decades; 97 percent of those jobs are held by men, and so are 95 percent of the 3.5 million transport and trucking jobs that robots are presently eyeing. That's scary, and it's one reason so many men are expressing their anger and anxiety at home, in the streets, and at the polls.

While all of this is going on, though, there's a counter-phenomenon playing out. As society panics about bricklaying worker droids and self-driving 18-wheelers, jobs traditionally performed by women – in the so-called pink-collar industries, as well as unpaid labor – are still relatively safe, and some are even on the rise. These include childcare. And service. And nursing, which the US Bureau of Labor Statistics predicts will need a million-plus more workers in the next decade.

According to the logic of the free market, when jobs are destroyed in one area of the economy, people will shift to new areas of productivity, acquiring new skills as they travel. So you might imagine that factory workers are becoming nannies. Not exactly. That's because we're talking about "women's work." Women's work is low paid and low status, and men are conditioned to expect better.

But we've all heard of the gender pay gap. The larger issue is the gender work gap – the fact that women around the world do more work for less pay, or no pay at all. Technological progress could make this imbalance worse – or it could help

us solve the twin crises of labor and care in one go. The problem, as ever, is not one of technology. The problem is with social attitudes, and those can't be updated with the tap of a touchscreen.

Whether or not you believe men are about to go the way of the portable CD player depends entirely on how you define manhood itself. A great many men have been trained over countless generations to associate their self-worth with the performance of tasks that are, in a very real sense, robotic – predictable, repetitive, and emotionless. The trouble is that machines are far better at being predictable, repetitive, and emotionless than human beings. What human beings do better are all the other things: We are better at being adaptable, compassionate, and intuitive; better at doing work that involves actually touching and thinking about one another; better at making art and music that elevates us above the animals – better, in short, at keeping each other alive. We have walled off all that work and declared it mostly women's business, even as exhausted women have begged men to join them.

Some men have already shown a willingness to think about these issues. In Silicon Valley, the hot topic of the day is universal basic income, proposed by quasienlightened VC types and tech CEOs as a way of delinking work and wages as robots take over more and more jobs. Feminists have, in fact, been arguing for a basic income for decades as compensation for unpaid domestic labor. Now that men might find themselves with more time to perform household tasks, they're finally starting to listen.

That's frustrating, but it's also fantastic, because it's a first step. Work is work, and as men come to realize that, society as a whole might start valuing pink-collar and unpaid labor more highly and – as men take these jobs and join the call for increased wages – compensating it more fairly. Benefits only multiply. No longer forced to choose between work and family life, more women can remain and thrive in, say, fast-growing STEM fields, increasing the pool of talent and expertise.

Automation doesn't have to make men obsolete, not if they're willing to change their mindset. As long as men aspire to be cogs in an outdated machine, robots may well replace them. But if they have the courage to imagine different lives of service and dignity, and then demand that those lives be made feasible in terms of both hours and pay, automation can help all of us be more human.

https://www.wired.com/story/men-will-lost-the-most-jobs-to-robots/

Assignment 3. Discuss the following questions.

1. What problems may automation lead to?
2. What are the reasons for the decline in "men's work"?
3. What jobs are better done by humans and what jobs – by robots?
4. Who can benefit from automation?

Assignment 4. Working in small groups, make a list of jobs that can be substituted by robots. Share your opinion with other groupmates.

Assignment 5. Surf the Internet and prepare a presentation on the topics.

1. Pros and cons of automation.
2. Automation: is it more an economic or a gender problem?

Text D

Assignment 1. Before reading the text study your active vocabulary.

Bot, to automate, to supersede, to be on the march, universal basic income, labor surplus, job churn, advent, job tenure.

Assignment 2. Scan the text about automation. Can you predict its consequences?

Chill: robots won't take all our jobs

Last year, the Japanese company SoftBank opened a cell phone store in Tokyo and staffed it entirely with sales associates named Pepper. This wasn't as hard as it sounds, since all the Peppers were robots.

Humanoid robots, to be more precise, which SoftBank describes as "kindly, endearing, and surprising". Each Pepper is equipped with three multidirectional wheels, an anti-collision system, multiple sensors, a pair of arms, and a chest-mounted tablet that allows customers to enter information. Pepper can "express his own emotions" and use a 3-D camera and two HD cameras "to identify movements and recognize the emotions on the faces of his interlocutors".

The talking bot can supposedly identify joy, sadness, anger, and surprise and determine whether a person is in a good or bad mood – abilities that Pepper's engineers figured would make "him" an ideal personal assistant or salesperson. And sure enough, there are more than 10,000 Peppers now at work in SoftBank stores, Pizza Huts, cruise ships, homes, and elsewhere.

Over the past few years, it has become conventional wisdom that dramatic advances in robotics and artificial intelligence have put us on the path to a jobless future. We are living in the midst of a "second machine age", to quote the title of the influential book by MIT researchers Erik Brynjolfsson and Andrew McAfee, in which routine work of all kinds – in manufacturing, sales, bookkeeping, food prep – is being automated at a steady clip, and even complex analytical jobs will be

superseded before long. A widely cited 2013 study by researchers at the University of Oxford, for instance, found that nearly half of all jobs in the US were at risk of being fully automated over the next 20 years. The endgame, we're told, is inevitable: The robots are on the march, and human labor is in retreat.

This anxiety about automation is understandable in light of the hair-raising progress that tech companies have made lately in robotics and artificial intelligence, which is now capable of, among other things, defeating Go masters, outbluffing champs in Texas Hold'em, and safely driving a car. And the notion that we're on the verge of a radical leap forward in the scale and scope of automation certainly jibes with the pervasive feeling in Silicon Valley that we're living in a time of unprecedented, accelerating innovation. Some tech leaders, including Y Combinator's Sam Altman and Tesla's Elon Musk, are so sure this jobless future is imminent – and, perhaps, so wary of torches and pitchforks – that they're busy contemplating how to build a social safety net for a world with less work. Hence the sudden enthusiasm in Silicon Valley for a so-called universal basic income, a stipend that would be paid automatically to every citizen, so that people can have something to live on after their jobs are gone.

It's a dramatic story, this epoch-defining tale about automation and permanent unemployment. But it has one major catch: There isn't actually much evidence that it's happening.

Imagine you're the pilot of an old Cessna. You're flying in bad weather, you can't see the horizon, and a frantic, disoriented passenger is yelling that you're headed straight for the ground. What do you do? No question: You trust your instruments – your altimeter, your compass, and your artificial horizon – to give you your actual bearings and keep flying.

Now imagine you're an economist back on the ground, and a panic-stricken software engineer is warning that his creations are about to plow everyone straight into a world without work. Just as surely, there are a couple of statistical instruments you know to consult right away to see if this prediction checks out. If automation were, in fact, transforming the US economy, two things would be true: Aggregate productivity would be rising sharply, and jobs would be harder to come by than in the past.

Take productivity, which is a measure of how much the economy puts out per hour of human labor. Since automation allows companies to produce more with fewer people, a great wave of automation should drive higher productivity growth. Yet, in reality, productivity gains over the past decade have been, by historical standards, dismally low. Back in the heyday of the US economy, from 1947 to 1973, labor productivity grew at an average pace of nearly 3 percent a year. Since 2007, it has grown at a rate of around 1.2 percent, the slowest pace in any period

since World War II. And over the past two years, productivity has grown at a mere 0.6 percent – the very years when anxiety about automation has spiked. That's simply not what you'd see if efficient robots were replacing inefficient humans en masse. As McAfee puts it, "Low productivity growth does slide in the face of the story we tell about amazing technological progress".

Now, it's possible that some of the productivity slowdown is the result of humans shifting out of factories into service jobs (which have historically been less productive than factory jobs). But even productivity growth in manufacturing, where automation and robotics have been well-established for decades, has been especially paltry of late. "I'm sure there are factories here and there where automation is making a difference," says Dean Baker, an economist at the Center for Economic and Policy Research. "But you can't see it in the aggregate numbers."

Nor does the job market show signs of an incipient robopocalypse. Unemployment is below 5 percent, and employers in many states are complaining about labor shortages, not labor surpluses. And while millions of Americans dropped out of the labor force in the wake of the Great Recession, they're now coming back – and getting jobs. Even more strikingly, wages for ordinary workers have risen as the labor market has improved. Granted, the wage increases are meager by historical standards, but they're rising faster than inflation and faster than productivity. That's something that wouldn't be happening if human workers were on the fast track to obsolescence.

If automation were truly remaking the job market, you'd also expect to see a lot of what economists call job churn as people move from company to company and industry to industry after their jobs have been destroyed. But we're seeing the opposite of that. According to a recent paper by Robert Atkinson and John Wu of the Information Technology and Innovation Foundation, "Levels of occupational churn in the United States are now at historic lows." The amount of churn since 2000 – an era that saw the mainstreaming of the internet and the advent of AI – has been just 38 percent of the level of churn between 1950 and 2000. And this squares with the statistics on median US job tenure, which has lengthened, not shortened, since 2000. In other words, rather than a period of enormous disruption, this has been one of surprising stability for much of the American workforce. Median job tenure today is actually similar to what it was in the 1950s – the era we think of as the pinnacle of job stability.

None of this is to say that automation and AI aren't having an important impact on the economy. But that impact is far more nuanced and limited than the doomsday forecasts suggest. A rigorous study of the impact of robots in manufacturing, agriculture, and utilities across 17 countries, for instance, found that robots did reduce the hours of lower-skilled workers – but they didn't decrease

the total hours worked by humans, and they actually boosted wages. In other words, automation may affect the kind of work humans do, but at the moment, it's hard to see that it's leading to a world without work. McAfee, in fact, says of his earlier public statements, "If I had to do it over again, I would put more emphasis on the way technology leads to structural changes in the economy, and less on jobs, jobs, jobs. The central phenomenon is not net job loss. It's the shift in the kinds of jobs that are available."

McAfee points to both retail and transportation as areas where automation is likely to have a major impact. Yet even in those industries, the job-loss numbers are less scary than many headlines suggest. Goldman Sachs just released a report predicting that autonomous cars could ultimately eat away 300,000 driving jobs a year. But that won't happen, the firm argues, for another 25 years, which is more than enough time for the economy to adapt. A recent study by the Organization for Economic Cooperation and Development, meanwhile, predicts that 9 percent of jobs across 21 different countries are under serious threat from automation. That's a significant number, but not an apocalyptic one.

So if the data doesn't show any evidence that robots are taking over, why are so many people even outside Silicon Valley convinced it's happening? In the US, at least, it's partly due to the coincidence of two widely observed trends. Between 2000 and 2009, 6 million US manufacturing jobs disappeared, and wage growth across the economy stagnated. In that same period, industrial robots were becoming more widespread, the internet seemed to be transforming everything, and AI became really useful for the first time. So it seemed logical to connect these phenomena: Robots had killed the good – paying manufacturing job, and they were coming for the rest of us next.

But something else happened in the global economy right around 2000 as well: China entered the World Trade Organization and massively ramped up production. And it was this, not automation, that really devastated American manufacturing. A recent paper by the economists Daron Acemoglu and Pascual Restrepo – titled, fittingly, "Robots and Jobs" – got a lot of attention for its claim that industrial automation has been responsible for the loss of up to 670,000 jobs since 1990. But just in the period between 1999 and 2011, trade with China was responsible for the loss of 2.4 million jobs: almost four times as many.

Nevertheless, automation will indeed destroy many current jobs in the coming decades. As McAfee says, "When it comes to things like AI, machine learning, and self-driving cars and trucks, it's still early. Their real impact won't be felt for years yet." What's not obvious, though, is whether the impact of these innovations on the job market will be much bigger than the massive impact of technological improvements in the past. The outsourcing of work to machines is not, after all,

new – it's the dominant motif of the past 200 years of economic history, from the cotton gin to the washing machine to the car. Over and over again, as vast numbers of jobs have been destroyed, others have been created. And over and over, we've been terrible at envisioning what kinds of new jobs people would end up doing.

The peculiar thing about this historical moment is that we're afraid of two contradictory futures at once. On the one hand, we're told that robots are coming for our jobs and that their superior productivity will transform industry after industry. If that happens, economic growth will soar and society as a whole will be vastly richer than it is today. But at the same time, we're told that we're in an era of secular stagnation, stuck with an economy that's doomed to slow growth and stagnant wages. In this world, we need to worry about how we're going to support an aging population and pay for rising health costs, because we're not going to be much richer in the future than we are today. Both of these futures are possible. But they can't both come true. Fretting about both the rise of the robots and about secular stagnation doesn't make any sense.

https://www.wired.com/2017/08/robots-will-not-take-your-job/

Assignment 3. Explain the meaning of the following notions.

1. Job churn
2. Universal basic income
3. Labor surplus
4. Automation
5. Outsourcing

Assignment 4. Split into two groups and carry out a debate. One of you will support the idea that jobless future is imminent. The other group will claim that new technologies lead to the shift of jobs not their disappearing. Present your arguments.

T e x t E

Assignment 1. Before reading the text study your active vocabulary.

Tenure, bias, to be affected by discrimination, at-will agreement, career development options, to climb the career ladder, after-hours, skill building, job rotation, job shadowing, to manage people, to earn titles and perks, soft skills, EQ, to build camaraderie, flexible schedule, workload.

Assignment 2. Read the text about age discrimination in IT. Be ready to discuss it.

Surviving as an old in the tech world

About 15 years ago, I was inexplicably offered a job at Google – at age 52. At the time, my age reliably put me in the running for "oldest employee." Still, I was thrilled to be there, and worked hard to become known as a good colleague, reliable, energetic, and a quick study. As the company grew, so did our team, and of course many new people (virtually all younger) were hired around me.

One day well into my tenure, I had a quick hallway chat with one of the leaders of our team. As part of my job, she suggested, I should show these newbies how to do some of my everyday tasks. "You know, let the young people do it," she said.

Let the young people do it: I understood immediately. In this moment, she and I were mature stewards (she's about 15 years younger, by the way) looking across a verdant landscape of young employees. We two could share a grown-up understanding that the way forward was to give these up-and-comers every chance to learn and grow. As I recall, my reaction at the time was a mental shrug: Yep, that's how it is.

I've thought about that brief exchange a lot since – and it was in no way particular to Google. Age awareness is a funny thing. I'm 66 now and I don't dye my hair or hide my age. But this confidence comes in part from working in tech businesses for many years, among – and increasingly for – people 10, 20, and even 30 years younger than me. I haven't always liked it, but it's the norm. I'm used to it. So used to it, in fact, that I'm quite skeptical of legacy companies that value hierarchy and old-school protocols above all. (You know the ones: They live by "We've always done it this way.") I wouldn't want to work in a place where management is close to my age without a gold-plated guarantee they share the "Let's try it and see" outlook of younger companies.

There's a lot of attention in the business world today on what's called diversity and inclusion. It's the idea that companies need to work harder and more persistently to attract, retain, and recognize diverse talent across the spectrum of gender, race, class, and so on. Not only is it the right thing to do, the thinking goes, but it also enhances business by creating a broader mix of people bringing their energies, styles, creativity, and fresh thinking to the job. And we've all seen stories of company culture gone wrong when diversity isn't prioritized.

But there's one bias that doesn't get addressed much: age. The very people who might be affected by age discrimination often don't want to bring it up – especially in Silicon Valley. Let's face it: Few of us over 40 want to be considered "old" or label ourselves as outsiders. If workers do come forward, age

discrimination is very hard to prove, since it's often hidden by internal reorganizations, budget cuts, and employee "at-will" agreements. The subject of "older workers" can be a legal minefield for companies – to even acknowledge it is to open a Pandora's box of issues.

We "elders" know perfectly well that our workplaces are by and large not about us. We don't drive how roles, functions, advancement, and success are seen. Career development options and the hierarchical career ladders everyone is expected to climb are designed for the majority: younger workers.

What can be done? There has to be a system overhaul before the members of the over-40 crowd can quit worrying about hair dyeing or giving themselves a crash course in pop culture. Almost everyone I know over 40 tends to omit their graduation year from their résumés and eliminate or streamline their past experiences.

Let me suggest a few areas where the olds might get a little more TLC.

1. Socializing

In an era when we're encouraged to bring our authentic selves to work, after-hours socializing is part of the deal. For older workers (and others who aren't quite a "culture fit"), tone-deaf get-togethers can cause emotional or logistical havoc. I've survived karaoke, rock climbing, and a folkloric overnight ski trip myself. There are good reasons for groups to let off steam and get better acquainted, but please, managers, make sure everyone feels comfortable about socializing in whatever way and at whatever time that you think will be so much fun. Done right, employee socializing leads to understanding between ages, cultures, genders, and all the rest. Done badly, corporate "fun" can lead to disaffected employees – or worse.

2. Career development

As long as you're still working, professional development shouldn't stop. In my corporate jobs I've noticed that virtually all the skill building the company pays for is geared to people starting out or wanting to climb the ladder. Career help is often tied to what's called an "up or out" management approach – which means you either have the wherewithal to be promoted steadily up the chain, or out you go. But programs that encourage job rotation – job shadowing, shifting to another office or partner site – work for all kinds of employees, not just younger ones. Not everyone can pull up and take a six-month rotation to Belo Horizonte or Singapore, but you can design programs for different ages and mobility.

3. Mentoring programs

Mentoring and coaching programs are useful tools for professional development. I'm also glad to see technical mentoring programs on the rise, which do the important work of helping young women and people of color get into STEM roles, management training, and other specialties. I'd love to see more widespread mentoring programs where the over-40 crowd can make use of their experience.

4. Valuing individual contributors

Career tracks often lead to managing people: It's the main way you make more money and earn bigger titles and more perks. But there are plenty of talented and dedicated people with no desire to get into the people-management business – and when you're older and really skilled at your job, why should you have to? More companies should offer a fully developed, and valued, individual contributor track. Tech companies often give engineers this option, but surely other teams need steady, knowledgeable talent with depth, not breadth.

5. Outside learning

It's not uncommon for companies to offer a professional development allowance that covers some or all of the cost of continuing education where it has direct relevance to your current job. That's nice, but in the era of soft skills, like creativity and EQ, we should broaden what "relevant" means. It's not a big stretch to see how, say, an outdoor survival program or improve classes can help workers become more engaged, curious, and nimble.

6. Recognition and credit for volunteer activities

Many companies set aside days for volunteering at charities or for team fundraising on runs and walks. These are great ways to build camaraderie while doing a social good, not to mention giving the company reputational luster. Older workers, who often have done years of volunteering on their own, benefit from being valued for their efforts, especially if it counts toward promotions, sabbaticals, and skill building. Consider adding programs where giving back counts for something.

7. Phased retirement

The vast number of us boomers rushing headlong toward 65 calls for more creative ways for us to eventually disengage from jobs. Companies shouldn't want all that institutional knowledge to walk out the door all at once. Beyond that, people don't want to – and often can't – retire at one predefined age. We want and need to work; at the same time, we want to have more free and flexible schedules. Companies should devise programs to adjust workloads and responsibilities so that valuable workers are engaged as long as they'd like to be.

8. Benefits and perks

As companies add more kinds of benefits to attract recruits, HR and compensation experts should consider the whole spectrum of add-ons.

https://www.wired.com/story/surviving-as-an-old-in-the-tech-world/

Assignment 3. Explain the following notions.

1. Up-and-comer
2. Job rotation
3. Job shadowing
4. Soft skills
5. Phased retirement

Assignment 4. Working in small groups, speculate on every idea expressed by the author to help elderly people feel significant at work.

Assignment 5. Surf the Internet and prepare a vivid presentation on the problem of discrimination at work:

1. Age discrimination
2. Gender discrimination
3. Race discrimination
4. Class discrimination

Assignment 6. You are participating in a TV show concerning the problems of discrimination at work. What piece of advice would you give to the elders to survive in the tech world?

Учебное издание

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СТАНЬ ЭКСПЕРТОМ В ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЯХ

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