UNIT 8

Future Innovations

READING

Read the text. What effects can innovation have on business?

Next-Generation Technology



Innovation has always played a large role in business. Every significant invention, from the steam engine to the internet, has led to new businesses that make money from that invention, often in unpredictable ways. Of course, each innovation also leads to some businesses closing—the demand for companies selling horses dropped very quickly at the start of the 20th century when the automobile became popular, for example—although some manage to change quickly enough to survive in new circumstances. Businesses are constantly on the lookout for innovations in their own area that threaten their existing business models at the same time as they present new opportunities. So, what areas are companies paying most attention to right now?

One development that promises to revolutionize communications is 5G. That's the next-generation technology for mobile communications. According to lifewire.com, 5G will be at least 20 times faster than 4G and possibly up to 100 times faster. Also, many more users will be able to connect at the same time. A 5G antenna can connect up to 1,000 more devices per meter than a 4G antenna. This will obviously have major consequences for communications companies, who will need to build new systems and whose customers will want to upgrade their cell phones to take advantage of the benefits of 5G, such as the ability to download a movie in only a few minutes. This new technology will affect more than just phone companies, though, and will have uses far beyond quick downloads of media. 5G technology means that devices can connect to each other and communicate very quickly. The automobile industry will rely on 5G to keep driverless cars safe. Businesses that produce domestic appliances will be affected since more and more people will want their homes to become smart, with the dishwasher, refrigerator, and heating and lighting systems all constantly communicating to use energy efficiently. And if we ever make the science fiction dream of robots in the home a reality, it will be innovations such as 5G that make it possible, and new businesses will appear to make money out of the process.

Another area of innovation with consequences for business is automation. There will be enormous pressure on businesses to automate because it can lead to much lower costs. Of course, many businesses today already use automated processes in, for example, manufacturing. However, developments in artificial intelligence mean that automation is going to affect many more areas of business, including customer service, accounting, and sales, with the result that some jobs disappear and other jobs are created. There will be a huge demand for training for the new jobs and professions that appear, and new businesses will start up to meet that demand.

Augmented reality is another innovation that will affect businesses. Augmented reality mixes the real world with the digital world and it offers businesses the opportunity to, for example, present their products in new ways to consumers. Vehicle manufacturing companies may use it to give you an idea of what it's really like to drive their latest automobile. Medical companies may be able to offer a wider range of treatments, since augmented reality used with 5G could mean, for instance, that surgeons can operate on patients from a distance.

When faced with innovations such as these, businesses have a number of options. They can try to protect their current business practices by attempting to limit the innovation. While this may buy a business time in the short term, it is rarely effective as a long-term strategy. Accepting an innovation and carefully considering how a business can adapt to use that technology to its advantage seems to be a much better approach.

automation (n): the process of changing to a system that uses machines instead of people

revolutionize (v): to change completely

surgeon (n): a doctor who operates on people

LIVEWORKSHEETS

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Future Innovations

VOCABULARY

Complete the sentences with words from the box.

adapt attempt limit threaten upgrade

1 make an electronic device more powerful: _____
2 prevent something from going beyond a particular point: _____
3 cause possible harm or have a bad effect on: _____
4 change in order to deal with a new situation: _____
5 try to do something: _____

COMPREHENSION

Choose the correct option.

1 With each important innovation, …
a existing businesses are taken by surprise.
b new, unexpected ways of making money appear.
c fewer businesses can make money.

2 5G means that communications companies have to …
a move into other areas of business.
b provide new equipment.
c provide more entertainment.

3 Businesses that don't automate will …
a sell fewer products than they do now.
b find it harder to employ skilled people.
c face higher costs than other businesses.

4 Augmented reality can provide consumers with …
a a better idea of what they're going to buy.
b more choice than they have now.
c cheaper products of better quality.

5 It seems to be a mistake when businesses try to …
a stay as they are.
b change quickly.
c accept innovations early.

LIVEWORKSHEETS

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Future Innovations

READING

Read the text. Is there a place for AI in the hospitality industry?

AI Impacting the Hotel Industry



Artificial intelligence (AI) may finally be realizing some of its potential in the hospitality industry. Hotels, in particular, are beginning to use AI in a number of areas, some of which customers will notice and some of which customers won't be aware of.

The process of booking a hotel room involves a number of steps, such as searching for availability on particular dates or choosing from a range of possible room types, and people are more likely to book at a hotel where that process is as straightforward as possible. AI, in the form of chatbots, can deal with enquiries in real time around the clock in a way that would be much more difficult with human customer service representatives. A chatbot is a messaging service that interacts with customers and collects information about their needs before offering to make a booking that matches their requirements. The difference between an intelligent chatbot and a simple menu of options is that the chatbot can learn from its interactions with people and so become better at the process over time. In addition to that, the chatbot can personalize the experience for individual guests by remembering particular preferences, such as a request for a certain type of pillow or particular dietary requirements. Personalization can be very effective at encouraging people to return to the same hotel or brand of hotels in the future.

Another use of AI that customers will notice is the AI-powered concierge. This is a robot that is able to check guests in and out of the hotel, which is a fairly predictable and standard process, but is also able to interact with guests and respond to a wide range of requests, such as arranging tours of local landmarks, making restaurant reservations, and making suggestions for activities in the local area. Again, the technology has enormous potential because of its ability to learn from its conversations with people in order to improve its future performance. Guests can also expect to see a range of voice-activated services in hotels, from controlling the air conditioning to ordering meals to be delivered by room service.

What most hotel guests will be unaware of is the many roles that AI plays in the hotel industry behind the scenes. In the same way that AI manages energy use in smart homes, we can expect more and more hotels to use AI to control lighting and heating. AI can do much more than turn lights on and off, though. Hotel stays generate a huge amount of data and AI is used to analyze that data, meaning that managers have a better understanding of trends and patterns. Using that information, they can plan how to use the hotels they are responsible for more effectively. It allows them to set prices at the right level to attract more guests when demand is low or to make the most profit when demand is high. It also allows them to plan maintenance. Hotels need to service various systems, such as elevators and heating systems, as well as keep rooms and public areas in a good state. It's not always easy to decide which maintenance should be done at which time. AI helps managers to make those decisions to use resources in the best way and to affect business as little as possible.

Artificial intelligence can also be used to analyze data about the population in an area and about local development. This information can be used to identify "hotel deserts," areas where there are not enough hotels to meet demand. Large chains of hotels can then plan to open new hotels, basing their decisions about number of rooms, facilities, and services to offer on analysis carried out by AI.

concierge (n): a hotel employee responsible for dealing with enquiries, making reservations, etc.

landmark (n): a famous building, etc., which may also be a tourist attraction

LIVEWORKSHEETS

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VOCABULARY

Choose the correct option.

1 The hotel is closed for … at the moment so we'll have to find somewhere else.
a maintenance **b** repair **c** fixing

2 Our company's main … are people and money and we have to decide how best to use them.
a resentments **b** responses **c** resources

3 I can offer you a 10% discount on our … charge for one night's accommodation.
a standard **b** ordinary **c** identical

4 Solving this difficult problem isn't going to be …
a relaxed. **b** clear. **c** straightforward.

5 This computer program … a huge amount of data and I need help to understand it all.
a builds **b** generates **c** does

COMPREHENSION

Choose *True* or *False*.

1 When hotels use chatbots, people are less likely to make a booking there. True / False
2 The performance of a chatbot should improve over time. True / False
3 An AI-powered concierge only works in predictable situations. True / False
4 AI produces information that is used to decide how much to charge. True / False
5 Hotel maintenance decisions are usually quite straightforward. True / False

LIVEWORKSHEETS

UNIT 8

Future Innovations

READING

Read the text. What innovations do you use in your everyday life?

Everyday Innovation



Some innovations affect our everyday lives more than others. The martphone, for example, has had a huge effect on society, and many of us rely on them for everything from communicating with friends to booking a vacation. What other innovations are having, or soon will have, an effect on people's everyday lives?

It's easy to think that innovation is all about high-tech electronic devices, but some people's lives are being transformed by very simple innovations. The bottle light bulb is one of those innovations. In countries such as the Philippines, large numbers of low-income people live in homes that have very little natural light. Electricity is expensive, which means that many families lack light to do everyday things such as cook or study. It's possible to use candles, but with many people in a small space, there is a high risk of causing a fire by accident. For a bottle light bulb, a one-liter soda bottle is filled with water with a little bleach added. A hole is cut in the roof and the bottle is sealed into the hole. Sunlight enters the bottle and is spread to the inside of the room by the water. It produces as much light as an electric light bulb, at least during the day, and it can have a dramatic effect on the day-to-day lives of residents.

Another interesting low-tech innovation is the foldable microscope. Made out of cardboard and plastic, this device is small enough to fit in a pocket and costs very little. However, the potential benefits are enormous. The device magnifies up to 140x and it's possible to see bacteria and blood cells using it. This could be very useful in areas that suffer from malaria, a serious disease, which the World Health Organization stated that there were 228 million infected people in 2018. With a cheap, foldable microscope, it's possible to check if someone has the illness and to treat them more effectively, which could help to stop the disease from spreading.

Of course, a lot of the innovations we can expect to see do involve high-tech electronic systems. You may soon see changes to your morning routine, for example. Some of us already have toothbrushes that time how long you spend brushing your teeth, but we may soon see toothbrushes that contain sensors that can check your dental health. They can collect data on your brushing habits and then send that data directly to your dentist ahead of your next check-up. Even the mirror you stand in front of you to brush your teeth could get smart. A smart mirror could judge aspects of your health based on your appearance and be able to suggest that you need to get more vitamins, for example, or may suggest booking an appointment with a doctor if it spotted something such as a blemish that needed to be looked at by a professional.

Those of us who drive can expect to see innovations such as driverless trucks. Although there has been a lot of discussion of driverless cars, safety concerns mean that we're more likely to see driverless trucks first, where a line of perhaps three trucks without drivers follows a truck driven by a human. Goods can be transported across the country cheaply and quickly in this way and then be delivered the final few kilometers in the usual way. We may even see innovations in the roadways themselves. Roads of different kinds cover an enormous surface area. Innovations in transparent materials mean that it's possible to build solar panels into the road surface. This has the potential to generate a large amount of energy.

There's no doubt that people in both low- and high-income countries are about to see a number of innovations that will affect their everyday lives.

bacteria (n): very small living things
blemish (n): a mark or spot on the skin
foldable (adj): that can be made smaller by folding like a piece of paper
infect (v): to make ill with a disease
sensor (n): a piece of equipment that collects data such as temperature, etc.

LIVEWORKSHEETS

UNIT 8

Future Innovations

VOCABULARY

Match to complete the sentences.

1	When you **treat** somebody, you …	**a**	prevent water or air from getting in.
2	If you **suffer from** an illness, you …	**b**	make it go to other areas.
3	If you **seal** something, you …	**c**	try to cure him or her of an illness.
4	If you **spread** something, you …	**d**	completely change it.
5	If you **transform** something, you …	**e**	show the symptoms of that illness.

COMPREHENSION

Choose the correct option.

1. One reason low-income people have to live in dark homes is that **candles are banned because they are dangerous / electricity costs too much to be used regularly.**
2. The bottle light bulb works well because it **provides light for free / uses very little electricity.**
3. The foldable microscope could be used to **deal with a large public health problem / train future scientists and doctors.**
4. Smart mirrors and smart toothbrushes might both **inform professionals about your habits / detect potential health issues.**
5. Getting energy from roads depends on **creating a clear surface / decreasing the amount of traffic.**

LIVEWORKSHEETS