Map of the book

1

Urban development

City plans must fit the people, not the other way round!

— Jane Jacobs (*American-Canadian urbanologist and writer*)

Preview

Over the past decades, China's tremendous economic growth has enabled the country to become the world's second largest economy and to eliminate absolute poverty. To **build a modern socialist country in all respects**, China is now striving for **high-quality development**. With more and more people expected to live in cities in the future, Chinese cities are facing increasing challenges in infrastructure and public resources, but they also see significant opportunities for **promoting economic development and urban livability**.

How can cities host growing populations while keeping the urban space safe and clean? How can the authorities use data technology to address traditional urban challenges around transportation, waste management, energy consumption, health care, etc.? How can local governments and technology companies work together to make cities more efficient and climate-friendly? Our efforts to answer these questions innovatively will determine how our cities can be better-designed and how people will live more happily in the future.

Pre-reading activities

1 **What kind of city is ideal to live in? Below is a picture of a smart city. Look at the picture and discuss the following questions.**

   1 What can you learn about a smart city from the picture?

   2 Compared with the ideas of a smart city in the picture, do you consider the city you are living in now a smart one? In what ways is it already smart, and in what ways is it still not?

2 **Opinion survey**

Smart city projects seek to achieve some core objectives. What do you consider to be the most important goals of a smart city? Check (✔) three from the following list, and then work in pairs and explain why you think so.

   ☐ A Efficiency of services – to optimize the use of public resources and provide a high level of service to citizens

   ☐ B Safety & security – to improve public safety and security in everyday life and be best prepared for possible emergencies

   ☐ C Mobility – to make it easy for citizens and visitors to move around in the city

   ☐ D Sustainability – to develop the city with a minimum impact on the environment

   ☐ E City reputation – to improve the city's image and reputation

From urbanization to smart cities

1   As China is transitioning to a **modernized** nation and has become a **benchmark** of economic progress, the rate of urbanization has accelerated to unparalleled levels. The population living in cities has been projected to increase to nearly 70 percent by 2050. In fact, urbanization is reshaping not only the physical environment but also the cultural fabric of society and has a massive impact on the economy.

2   Nevertheless, the model of urban life mainly revolved around the technological, **demographic**, and **infrastructural** needs of life in the late 20th century. As such, it has been **predominantly** dependent on the abundance and easy availability of **fossil fuels**. We can appreciate that this dependence has caused a waste of resources and has made a **devastating** impact on the environment and public health. It has led to **excess** and waste-**prone** development that proves to be **detrimental**. Therefore, the traditional model of urbanization is **outdated** and unsustainable. Currently, the only way to avoid the problem from being **escalated** is through building "smart cities", in contemporary **jargon**.

3   The idea of smart cities – infrastructure **interlinked** by software – isn't new, but it's undeniably cool. Who wouldn't want to live somewhere where data and evidence, rather than **intuitive** thinking, are used to actively improve their day-to-day lives? In a sense, a smart city can be defined as one that makes **optimal** use of all the interconnected information available to better understand and control its operations and to **optimize** the use of limited resources.

4   From the perspective of the **inhabitants**, a smart city is **equated** to a space that has all the core functionality of a city integrated with and enhanced by technology to deliver a sustainable, prosperous, and **inclusive** future for its citizens. With more and more Chinese cities starting their "smart city" transformations, the idea will be increasingly embraced.

5   Why can such an idea be **poised** to become a common standard of assessment of life

in modern developed cities? There are a variety of factors and reasons. Generally speaking, cities are the core engines of growth for all modern societies. They provide numerous benefits to people – they are places where people have more opportunities to seek various jobs, enjoy the convenience of public **transit**, share abundant resources, and access **lavish** facilities.

6   Another important reason is the swift rise of smartphones, **cellular** broadband, and low-power-high-efficiency embedded **computing**. Everything from business to human social life has changed. The **parameters** of what **constitutes** a smart city have also changed with it. With the combination of the Internet of Things (IoT), cloud computing, big data, and AI, cities are no longer static masses of steel and **concrete**; instead, they have the potential to become highly efficient, safe, well-designed, and enjoyable.

7   Therefore, some key features of a smart city can be efficient design, maximization of green spaces, minimization of traffic jams, sustainability of infrastructure and buildings, in-depth monitoring of every data point that can be obtained through **sensors** to enable optimal safety, and effective access to facilities with **minimal** waste. In addition, when an emergency occurs anywhere in the city, regular traffic can be routed through alternate routes to ensure minimum disruption of life in the surrounding areas.

8   In other words, what is being imagined about smart cities now is based on such a **hypothesis**: Living places are built around the convenience of human life, with technology integrated into every facet from design to construction, monitoring functionality, and maintenance. Entire urban areas are built to maximize green areas and ensure the smoothest flow of traffic. As a result, it is possible to fine-tune operation to the minutest detail.

9   To elaborate, if a fire breaks out in a building, not only can the inhabitants be immediately **alerted** through their smartphones, but they can also be directed to

the nearest exits and safe spaces. Furthermore, the message of the incident will be **instantaneously** conveyed throughout the system, and thus the building's safety measures can be implemented right away. On top of that, emergency search and rescue services can be **dispatched** within a moment's notice, and their path through traffic can be cleared and an optimal route provided.

10　The possibilities for similar improvements and enhancements in all aspects of urban life are immense. However, neither **tangible** nor **intangible** improvements to the quality of life are just within grasp, as many large cities are becoming unmanageable. The goal, ultimately, is to rid cities of the traditional problems and create **fabulous** living spaces where the inhabitants feel safe, comfortable, and productive without unnecessary or undesirable **hurdles**.

11　To that end, China has been investing billions in designing and defining the standards of the future, from 5G technology to IoT, striving to **evoke** the best response from the public for its remarkable projects. Foreseeably, this will benefit not only China, but also the world.

12　China's southern city of Shenzhen has been one of the pioneering cities seeking to build a smart city. Another remarkable step on the nation's development roadmap is the massive Jing-Jin-Ji (namely Beijing-Tianjin-Hebei) urban cluster, which aims to optimize the economic structure in the area, **streamline** many aspects of urban life, and achieve a new **mode** of coordinated growth. All this will be invaluable for future urban design, since development in the coming years and decades will be modeled on the results achieved now. There is no doubt that China will continue to advance in the development of smart cities.

(897 words)

Shenzhen, China

New words

▲ **urbanization** /ˌɜːbənaɪˈzeɪʃən/ *n.* [U] the process by which towns and cities grow bigger and more and more people go to live in them 城市化

▲ **modernize** /ˈmɒdənaɪz/
vt. make sth. such as a system or building more modern 使（系统、建筑物等）现代化
vi. start using more modern methods and equipment 采用现代方法和设备；现代化

benchmark /ˈbentʃmɑːk/ *n.* [C] sth. that is used as a standard by which other things can be judged or measured 基准；规范

demographic /ˌdeməˈɡræfɪk/
a. relating to human populations and the information collected about them, such as their size, growth, ages, and education 人口的；人口统计的；人口学的
n. (~**s**) [pl.] information about a group such as the people who live in a particular area 人口统计数据；人口统计资料

▲ **infrastructure** /ˈɪnfrəˌstrʌktʃə/ *n.* [C, U] the basic systems and structures that a country or organization needs in order to work properly, e.g. roads, railways, banks 基础设施（如公路、铁路、银行等）；基础结构

infrastructural /ˈɪnfrəˌstrʌktʃ(ə)rəl/ *a.* connected with infrastructure 基础设施的；基础结构的

predominant /prɪˈdɒmɪnənt/ *a.* more powerful, more common, or more easily noticed than others 占优势的；占主导地位的；显著的

predominantly /prɪˈdɒmənəntli/ *ad.* mostly or mainly 绝大多数地；主要地

▲ **fossil** /ˈfɒsəl/ *n.* [C] 化石

fossil fuel n. [C, U] 矿物燃料（如煤、石油等）

devastating /ˈdevəsteɪtɪŋ/ *a.*
1 badly damaging or destroying sth. 毁灭性的；破坏力极强的
2 causing severe shock 令人十分震惊的；具有强大冲击力的

▲ **excess**
a. /ˈekses/ (*only before noun*) additional and not needed because there is already enough of sth. 过多的；多余的
n. /ɪkˈses/ [sing., U] a larger amount of sth. than is allowed or needed 过多；过量

prone /prəʊn/ *a.* likely to do sth. or suffer from sth., esp. sth. bad or harmful 易于发生某事（尤指不好或有害的事）的；很可能…的

detrimental /ˌdetrəˈmentl/ *a.* causing harm or damage 有害的；不利的

▲ **outdated** /ˌaʊtˈdeɪtɪd/ *a.* old and no longer suitable for modern purposes, methods, or situations 过时的；陈旧的

escalate /ˈeskəleɪt/ *v.* become much worse or more serious, or make sth. do this （使）升级；（使）恶化

jargon /ˈdʒɑːɡən/ *n.* [U] words and expressions used in a particular profession or by a particular group of people, which are difficult for other people to understand 术语；行话

interlink /ˌɪntəˈlɪŋk/ *v.* connect or be connected with each other （使）相互连接

intuitive /ɪnˈtjuːətɪv/ *a.*
1 based on a feeling rather than on knowledge or facts 直觉的；来自直觉的
2 able to understand situations without being told or having any proof about them 有直觉力的

optimal /ˈɒptəməl/ *a.* (*fml.*) the best or most suitable 最佳的；最适宜的

optimize /ˈɒptəmaɪz/ *vt.* improve the way that sth. is done or used so that it is as effective as

注：标 ▲ 单词为四级词，未做标记单词为六级词，斜体单词为超纲词。

possible 使最优化；使尽可能完善

▲ **inhabitant** /ɪnˈhæbɪtənt/ *n.* [C] one of the people who live in a particular place 居民

equate /ɪˈkweɪt/ *vt.* consider that two things are similar or connected 使等同

▲ **inclusive** /ɪnˈkluːsɪv/ *a.*
1　including a wide variety of people, things, etc. 包容广阔的；范围广的
2　having the total cost contained in the price （价钱或费用）包括一切的

poised /pɔɪzd/ *a.*
1　(*not before noun*) completely ready to do sth. or for sth. to happen 准备好的；准备就绪的
2　behaving in a calm, confident way, and able to control your feelings and reactions 镇定的；自信的；沉着的

▲ **transit** /ˈtrænsɪt / *n.* [U]
1　a system for moving people from place to place 交通运输系统
2　the process of moving goods or people from one place to another （货物或人的）运输

lavish /ˈlævɪʃ/
a.　1　large in quantity and expensive or impressive 大量的；昂贵的；使人印象深刻的
　　2　very generous 慷慨的；大方的
vt. give sb. or sth. a lot of love, praise, money, etc. 慷慨给予

cellular /ˈseljələ/ *a.*
1　working by using a network of radio stations to send signals instead of by a wire 蜂窝状的；蜂窝式的
2　consisting of or relating to the cells of plants or animals 由细胞组成的；细胞的

computing /kəmˈpjuːtɪŋ/ *n.* [U] the activity or skill of using computers or programming computers 计算机使用；计算机技能；计算机编程

parameter /pəˈræmɪtə/ *n.* [C, usu. pl.] factors or limits which affect the way that sth. can be done or made 参数；界限；范围

▲ **constitute** /ˈkɒnstɪtjuːt/ *linking verb*
1　form or make sth. 形成；构成；组成
2　be considered to be sth. 被视为；被算作

▲ **concrete** /ˈkɒŋkriːt/
n.　[U] 混凝土
a.　1　made of concrete 混凝土的
　　2　definite and specific 具体的

▲ **sensor** /ˈsensə/ *n.* [C] a piece of equipment used for discovering the presence of light, heat, movement, etc.（探测光、热、活动等的）传感器，感应装置

▲ **minimal** /ˈmɪnəməl/ *a.* very small in degree or amount, esp. the smallest degree or amount possible 极小的；极少的；（尤指）最小的，最少的

hypothesis /haɪˈpɒθəsɪs/ *n.* [C] an idea that is suggested as an explanation for sth., but that has not yet been proved to be true 假设；假说

▲ **alert** /əˈlɜːt/
vt. officially warn sb. about a problem or danger so that they are ready to deal with it 使警觉；向…发出警报
a.　1　giving all your attention to what is happening, being said, etc. 警惕的；警觉的
　　2　able to think quickly and clearly 机警的；机敏的

▲ **instantaneous** /ˌɪnstənˈteɪnɪəs/ *a.* happening immediately 即刻的；即时的

instantaneously /ˌɪnstənˈteɪnɪəsli/ *ad.* 即刻地；即时地

dispatch /dɪˈspætʃ/
vt. (*fml.*) send sb. or sth. somewhere for a particular purpose 派遣；发送
n.　1　[sing.] the act of sending people or things to a particular place 派遣；发送
　　2　[C] a message sent between military or government officials （军官或政府官员之间来往的）公文，信件

▲ **tangible** /ˈtændʒəbəl/ *a.*

1 able to be touched or felt 可触摸的；可触知的；有形的

2 clear enough or definite enough to be easily seen or noticed 确凿的；明显的；实在的

▲ **intangible** /ɪnˈtændʒəbəl/ *a.*

1 not able to be touched or measured, and difficult to describe or explain 触摸不到的；难以捉摸的；不易形容的

2 (of a business asset) that has no physical existence（企业资产）无形的

fabulous /ˈfæbjələs/ *a.*

1 extremely good or impressive 极好的；绝妙的

2 (*only before noun*) very large in amount or size 巨额的；巨大的

hurdle /ˈhɜːdl/

n. [C] 1 a problem or difficulty that you must deal with before you can achieve sth. 障碍；困难 2 one of a series of small fences that a person or horse has to jump over during a race（跨栏赛跑或马术比赛中用的）栏架

v. jump over sth. while you are running（跑步过程中）跨越

evoke /ɪˈvəʊk/ *vt.* produce a strong feeling or memory in sb. 引起，唤起（强烈的感情或回忆）

streamline /ˈstriːmlaɪn/ *vt.*

1 make sth. such as a business, organization, etc. work more simply and effectively 精简（企业、组织等）使效率更高

2 form sth. into a smooth shape, so that it moves easily through the air or water 使…成为流线型

▲ **mode** /məʊd/ *n.* [C]

1 (*fml.*) a particular way or style of behaving, living, or doing sth. 方式；方法；做法

2 a particular way in which a machine or piece of equipment can operate（机器、设备的）运行方式，状态，模式

Phrases and expressions

be projected to do sth. be forecasted to happen in a certain way 预计要

define sth. as describe or label sth. as sth. 把…定义为；把…描述为

equate sth. to / with sth. consider sth. as equal or equivalent to sth. else 认为某物与另一事物相等或相仿

integrate (sth.) with / into sth. combine sth. in such a way that it becomes fully a part of sth. else （将某事物）与另一事物结合成为一体

be poised to do sth. be ready to take action at any moment 准备好做某事；准备行动

on top of sth. in addition to sth. 除…之外

within / at a moment's notice within a short period of time 立刻；马上

within (one's) grasp able to be obtained or achieved by sb. 在（某人）掌握之中的；触手可及的

rid sth. / sb. of sth. take action so that a person, place, etc. is no longer affected by sth. bad or no longer has it 使摆脱掉；使除掉

to that end (*fml.*) for that reason; in order to achieve that goal 为此；鉴于此；为达此目标

be modeled on be designed in a way that copies another system or way of doing sth. 模仿；效仿；仿制

Proper names

Internet of Things 物联网

Reading comprehension

Understanding the text

1 Answer the following questions.

1 Why is the traditional model of urbanization outdated and unsustainable?

2 Why can smart city development be a solution to the traditional problems faced by cities according to Paras. 3-4?

3 Why can the idea of smart cities be a standard for assessing life in modern developed cities?

4 What are the key features of a smart city according to Para. 7?

5 What specific example does the author give to illustrate the operation of a smart city?

6 What is the ultimate goal of building smart cities according to the text?

7 What has China been doing to realize the ultimate goal of smart cities?

8 What does the phrase "on the nation's development roadmap" in the last paragraph suggest?

Critical thinking

2 Work in pairs and discuss the following questions.

1 How do you understand the significance of China building smart cities?

2 To enable urban sustainability in a smart city, city managers try to monitor various things in real time through using embedded IoT sensors. Can you give a few examples to illustrate this point?

3 There are likely to be many challenges with the development of a smart city. What challenges do you think may have to be addressed while developing a smart city?

4 Building a smart city requires a lot of preparation and careful planning. What steps do you think should be followed in deciding on a smart city project?

5 A city can't be built smart unless its citizens are ready to participate. How should we as individuals engage ourselves actively in the development of smart cities?

Language focus

Words in use

3 **Fill in the blanks with the words given below. Change the form where necessary. Each word can be used only once.**

> detrimental escalate evoke hurdle
> hypothesis instantaneous lavish
> poised streamline tangible

1 With your generous support, our charity fund will be _____ for continued growth and success for many years to come.

2 The dock was constructed on a(n) _____ scale with the most modern equipment, designed to enable rapid loading and discharge of vessels.

3 Advances in mobile phone technology have enabled the rapid development of _____ communication, such as instant messaging and voice chatting.

4 Computers, vehicles, paintings, furniture, etc. are all _____ assets that are characterized by their movability.

5 Students are a fairly adaptable community and their strength lies in their teamwork along with the ability to overcome _____ together.

6 For the convenience of drivers, China rolled out digital driver's licenses across the country amid efforts to _____ services.

7 Studies have shown that long-term confinement is _____ to the physical and psychological well-being of animals.

8 The new museum is designed in a manner to _____ the interest of children and young adults in science and technology.

9 This study was conducted to test the _____ that exposure to urban air pollution contributes to the development of chronic lung diseases.

10 If your stress is _____ into more serious issues, you should reach out to a licensed professional to get a treatment plan that will help you.

Word building

-cy

与某些形容词结合构成名词，表示形容词所描述的状态或性质。形容词末尾的 t 或 te 被替换为 cy，但 t 偶尔也被保留。

fluent	fluency
frequent	frequency
private	privacy
bankrupt	**bankruptcy**
delicate	**delicacy**
secret	**secrecy**
urgent	**urgency**
vacant	**vacancy**

-ic

与某些名词结合构成形容词，表示与名词所指的事物相似或相关。

artist	artistic
irony	ironic
symbol	symbolic
atmosphere	**atmospheric**
geography	**geographic**
idiom	**idiomatic**
microscope	**microscopic**

注：粗体单词为本单元新学派生词。

4 **Fill in the blanks with the words given below. Change the form where necessary. Each word can be used only once.**

> atmospheric   bankruptcy   delicacy
> geographic   idiomatic   microscopic
> secrecy   urgency   vacancy

1 The fall in demand for new cars could cause a wave of _____ in the car retail business.
2 The transport sector is trying to curb _____ pollution in urban areas, by setting traffic restrictions and promoting public transport.
3 When it comes to Sichuan cuisine, I feel very excited because there are so many local _____ I'd like to try.
4 When your customers receive an email, the _____ of opening it often depends on the message that is written in the subject line.
5 Slang terms and _____ expressions often create confusion for the learners of a foreign language.
6 Not limited by time and _____ location, online courses provide an excellent opportunity for people to learn new skills.
7 With our powerful job search tools, you can find job _____ that meet your exact requirements.
8 Because of the use of sophisticated technology and the need for _____, nicknames have been given to such equipment.
9 Scientists wanted to examine the internal structures of the virus, but previous _____ studies provided information on only the surface features.

Banked cloze

5 **Fill in the blanks by selecting suitable words from the word bank. You may not use any of the words more than once.**

A affordable	**F** embedded	**K** optimal
B capability	**G** enhance	**L** proceeds
C demand	**H** escalation	**M** streamlining
D disputable	**I** exceeds	**N** sustainability
E disrupt	**J** modernized	**O** undermining

Cities are getting smarter every day, so are their transit options. One emerging option is autonomous vehicles (AVs), or simply cars with self-driving 1) _____. However, as experts say, before we enter a reality where AVs are 2) _____ into our daily lives, we will see the continued rise of electric vehicles (EVs) all over the world.

Besides saving costs for consumers, EVs can bring many 3) _____ benefits to the environment because they use electricity instead of gas to drive their wheels. Many large cities are trying to encourage the use of EVs by installing public charging stations throughout the city and 4) _____ the vehicle registration process. At the same time, many automakers are working to 5) _____ the charging speed of EVs and to make EVs more 6) _____.

As the use of EVs rises, greater 7) _____ will be placed on the power industry. In some areas where energy resources are stressed already, the increasing use of EVs could well 8) _____ the electrical supply system.

EVs can also impact urban planning. Thus, consideration of commute options, location of charging stations, and open data should be part of a city's future mobility plans. It is important for automakers to partner with urban planners

and utility companies to provide 9) _____ experiences for consumers and residents. Imagine one day a driverless EV picks you up and drops you off, and then 10) _____ to the location of the next passenger without ever stopping to recharge because of wireless power transfer from nearby energy sources. The technology is on the way, but we need to wait for our cities and energy industry to get ready as well.
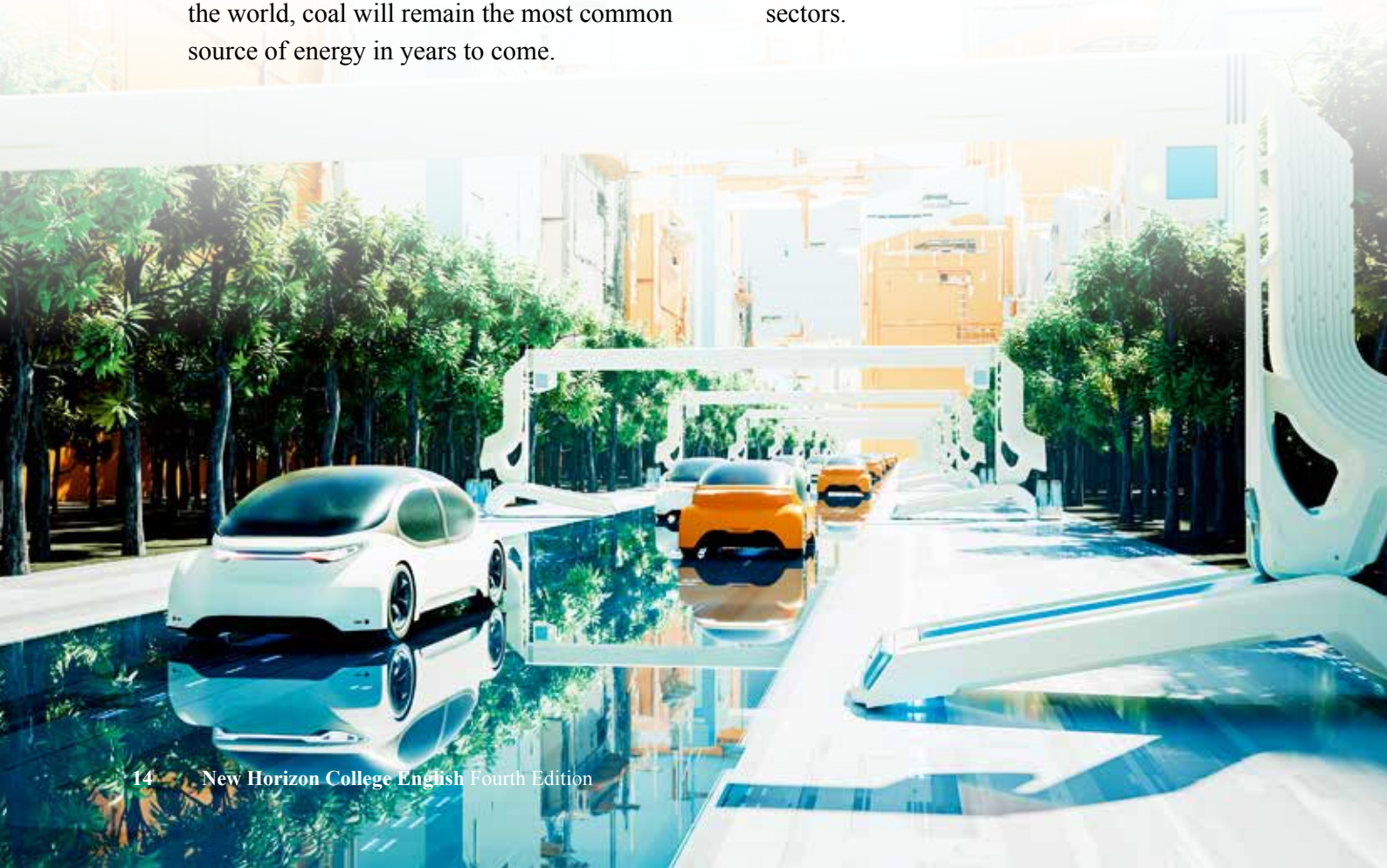
Expressions in use

6 **Fill in the blanks with the expressions given below. Change the form where necessary. Each expression can be used only once.**

> be modeled on   be projected to
> equate ... to   on top of   rid ... of
> to that end   within a moment's notice
> within one's grasp

1 While the energy market share for coal _____ decline in many parts of the world, coal will remain the most common source of energy in years to come.

2 After many years of hard work and struggle, the kind of lifestyle he has always wanted to live is _____.

3 Since AI-driven machines _____ the human brain, they are built to imitate our behavioral patterns.

4 After a change to a low-fat diet, Dennis was able to _____ himself _____ the overweight problem.

5 I am flexible with my hours, so I can respond to your questions _____ via email, live chat, or other electronic means.

6 We believe that every visitor's safety is important. _____, we require all visitors to sign in at the front desk before entry to the tower building.

7 We shouldn't _____ success _____ financial status. Rather, our gauge for success should be other things, such as the positive impact we can make on the people around us.

8 _____ the health risks, smoking also makes finding a job harder sometimes, especially in the healthcare and childcare sectors.

Structure analysis and writing

Structure analysis

Writing an expository essay

An expository essay is a type of writing which tries to explain, illustrate, or clarify something in a way that it becomes clearer to the reader. The core task behind an expository essay, as one can understand from its name, is to "expose" information.

Unlike in an argumentative essay where you take a position on a controversial issue and try to persuade your reader to think in a certain way, in an expository essay you keep to the facts and maintain a neutral tone. You try to inform your reader of or expose them to certain information concisely and objectively, so that the reader can gain a better understanding of the subject matter.

There are different types of expository essays, such as the descriptive type, the process type, the comparison and contrast type, and the cause-and-effect type. The descriptive type is the most common, and it requires you to define different aspects or characteristics of a main topic, usually for the purpose of clarifying a well-established idea about it.

Take Text A of this unit, for example. It is an expository essay of the descriptive type. In the body of the essay (Paras. 3-11), the author deals with several different aspects of the concept "a smart city":
- its meaning (Paras. 3-4);
- factors contributing to the appeal of the idea (Paras. 5-6);
- its key features (Paras. 7-9);
- its ultimate goal (Paras. 10-11).

Through explaining these aspects of a smart city, the author aims to help the reader understand what smart cities are and why building smart cities can be a good solution to the problems experienced by the traditional model of urban life.

Structured writing

Read the sample essay and see how an expository essay is developed.

Topic
Internet slang

Introduction
It is necessary that we understand what Internet slang is and how we can use it appropriately.

Body
- The meaning of slang
- The meaning of Internet slang
- Negative effects of inappropriate use of Internet slang

Conclusion
We have to be careful when using Internet slang.

Exchanging messages online is now one of the most popular forms of communication around the world. Every day, we send lots of messages using emails or social media networks, which, along with the valued speed of information exchange, has led to the development of Internet slang. Considering the widespread use of Internet slang today, it is absolutely necessary that we understand what Internet slang is and how we can use it appropriately.

But to start with, what is slang? Slang is a specific category of conventional language used in speech, especially by people who belong to a particular social group or have the same interests. It consists of words and expressions that are informal but can efficiently convey information to the related people. They can be either completely made up, or based on existing language constructions.

Internet slang, as its name suggests, refers to various kinds of slang used by people on the Internet. It is represented by abbreviations of words used in electronic messaging. Among the most common Internet slang words are "bb" for "bye-bye", "brb" for "be right back", "cu" for "see you", "u2" for "you too", "btw" for "by the way", and so on. It is not strange that we send and receive text messages which contain such abbreviated words and expressions.

Although Internet slang can facilitate communication, it can have negative effects if used in inappropriate situations. For example, some students now have moved Internet slang from online communication to serious academic situations. When they write emails to teachers or do their assignments, they habitually use such abbreviations, and they often do not capitalize words or use punctuation marks, which makes them appear disrespectful. It's not difficult to see that inappropriate use of Internet slang will have a negative effect on their communication.

It is hard to deny that Internet slang has become part of our everyday communication. But as we enjoy the convenience and efficiency brought by it, we also have to be careful and use it where it belongs.

7 **Write an expository essay of no less than 150 words on one of the following topics. One topic has an outline that you can follow.**

Topic

The impact of smartphones on our life

Introduction

Smartphone technology has changed our life in many respects.

Body

- Changes to how we connect with people
- Changes to how we access information
- Changes to how we do shopping

Conclusion

It is not hard to imagine how helpless we would feel without smartphones.

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More topics

- Benefits and potential risks of self-driving vehicles
- Positive and negative impacts of digital media

Reading skills: Skimming

1 Skim Text B to find answers to the following questions.
  1 What is the text mainly about?
  2 What is the main factor that triggers deurbanization according to the author?
  3 Which paragraphs of the text focus on the disadvantages of living in cities?

Text B

Embrace the trend of deurbanization

1   Although the global financial crisis following a housing bubble occurred between 2007 and 2010, it's still scary and unforgettable to many of us today. Chances are that the next financial crisis will focus on cities because we may soon see the end of urbanization. Many may consider this an exaggeration – after all, cities provide numerous benefits to people. This is true, but new technologies nowadays are making urbanization unnecessary, so it's time for deurbanization.

2   It makes sense that **proximity**, or closeness, brought about by urbanization or **centralization**, lets you reduce **commuting** time and expenses. The more people

Liyang, Jiangsu Province, China

live close together, the larger your sales market is. Cities also offer job and education opportunities as factories, schools, and service providers are within easy reach. In addition, proximity allows the cost of infrastructures, such as roads, sewers, and electricity lines, to be shared. As a result, cities become **magnets** for wealth, money, services, opportunities, and people.

3   Doesn't that mean we will continue to live in cities? I think not, because of the Fourth **Industrial** Revolution, which is marked by emerging technology breakthroughs in a number of fields. Among these are **robotics**, artificial intelligence, nanotechnology, biotechnology, the Internet of Things, autonomous vehicles and others, which are leading to profound changes in the entire systems of production and management of our society.

4   These new technologies will, in one way or another, reduce the benefits of cities. The need for proximity will decline with new technologies, whether it's remote working, online dating, or online shopping. Though the home-delivery market for food and **merchandise** is in the **midst** of a boom, new technologies do not need roads, just transportation, whether by plane or flying car.

5   In fact, decentralization in the supply systems of daily necessities is on the horizon. For **instance**, many people receive drinking water from the tap, while decentralized **alternatives** can now harvest water from the air and create clean water in substantial quantities. Decentralized sewer systems can also take care of waste water. We can also generate electricity with **solar panels**, **wind turbines**, and living plants to charge our tablet, bake a cake, warm our house, and fuel our car.

6   Back in the late 1990s, even many **eminent** people were vague about digital technology. They **underestimated** its massive impact, thinking mobile phones were an unrealistic idea and going wireless with the Internet of Things seemed to be the distant future. They never imagined what it would be like today. Smartphones are now unquestionably **popularized**. With 4G and 5G being used, virtual proximity will reach a whole new level beyond what is possible with our current apps.

7   Furthermore, **automation** and robotization will undoubtedly have significant implications for both blue-collar and white-collar work, with about half of the jobs giving way to computerization. New jobs will inevitably be created by technology – yet the types of jobs will be different and the number can be rather small compared to that of the jobs lost. This will **erode** many people's confidence in landing jobs in cities. So contemplating your future career prospects is a must now.

8   Removing the advantages of city-living leaves only its disadvantages, such as the hectic pace of life, **constraints** on household or rent **expenditure**, and little available

space for personal **recreation**. If you are in a financially **vulnerable** state, or worry about living on the **fringe** of society, you may feel compelled to work harder and change your status quo. Without a clear way out – the way to live better – this mental state can cause **anguish** and distress, a breeding ground for bigger problems.

9   But the problems don't end there. Cities can form urban heat islands. Simply put, this means urban areas become much warmer and more **humid** than their **rural** surroundings. Dark surfaces absorb sunlight more effectively, and the **thermal** properties of concrete and steel indicate they contain far more heat than plants. Plants cool their surroundings through **evapotranspiration**; concrete and steel are unable to do this. Consequently, heat islands can significantly decrease air and water quality, which is catastrophic since it brings diseases, **ailments**, and **allergies**.

10   Another phenomenon that is associated with the decreasing desirability of cities is that not every city is growing. The departure of large employers from an area, unable to keep their business **afloat**, can put cities in an economic dilemma. This starts a **vicious circle** involving falling housing demand and prices, a lack of money to maintain properties, and declining tax incomes, possibly provoking a new financial crisis. With automation and artificial intelligence leading to large job reductions in many industries, we may expect to see more shrinking cities.

11   Given the many downsides of cities, why should we still move into cities when their **leverage** and vigor are diminishing? Why should we pay a lot of money to live in close quarters with other people and not reap the benefits? It seems irrational to continue moving into cities when things are becoming decentralized. Yet, it seems that almost everybody in the world assumes urbanization will remain and continue. Have they ever thought about the cumulative effects of urbanization?

12   Deurbanization is **imperative**. While the advantages of a city may outweigh the disadvantages for some people, it's no longer the case for everyone. Even if some jobs wouldn't be affected by shifts in technology, there is still the fact of shrinking cities to consider. We have moved toward cities because they're where the opportunities used to be, but we can **deduce** that the prospects of the future will be somewhere else. Therefore, let's bid farewell to the heartland of major cities and embrace the trend of deurbanization!

(934 words)

New words

proximity /prɒkˈsɪməti/ *n.* [U] (*fml.*) nearness in distance or time（距离或时间的）接近，临近；邻近

centralization /ˌsentrəlaɪˈzeɪʃn/ *n.* [U] the process of gathering to a center 集于中心；集中

▲ **commute** /kəˈmjuːt/ *vi.* travel a long distance every day between one's home and place of work 长途上下班；通勤

▲ **magnet** /ˈmæɡnɪt/ *n.* [C]
1 sth. or sb. that attracts many people or things 有吸引力的事物或人
2 a piece of iron or steel that can stick to metal or make other metal objects move toward it 磁铁；磁石；吸铁石

▲ **industrial** /ɪnˈdʌstriəl/ *a.*
1 relating to industry or the people working in it 工业的；产业工人的
2 having many industries 有很多工业的；工业发达的

robotics /rəʊˈbɒtɪks/ *n.* [U] the science of making and using robots 机器人学；机器人技术

merchandise /ˈmɜːtʃəndaɪz/ *n.* [U] (*fml.*) goods that are being sold 商品；货品

midst /mɪdst/ *n.* (**in the ~ of sth.**)
1 while an event or situation is happening 在某事的进行过程中；正当某事发生的时候
2 in the middle of a place or a group of things or people 在（某地）中部；在（一堆事物或一群人）中间

▲ **instance** /ˈɪnstəns/ *n.*
1 (**for ~**) for example 例如
2 [C] an example of a particular kind of situation（特定情况的）例子，实例

▲ **alternative** /ɔːlˈtɜːnətɪv/
n. [C] sth. that you can choose instead of sth. else 供替代的选择；供选择的东西
a. (*only before noun*) different from sth. else and able to be used instead of it 供替代的；供选择的

▲ **solar** /ˈsəʊlə/ *a.* (*only before noun*)
1 using the power of the sun's light and heat 利用太阳光（能）的
2 relating to the sun 太阳的；和太阳有关的

▲ **panel** /ˈpænl/ *n.* [C]
1 a flat piece of wood, glass, etc. with straight sides, which forms part of a door, wall, fence, etc.（门、墙、栅栏等的）镶板，嵌板；窗玻璃片
2 a group of people with skills or specialist knowledge who have been chosen to give advice or opinions on a particular subject（由选定人员组成的）专家咨询组

solar panel *n.* [C] a piece of equipment, usu. kept on a roof, that collects and uses energy from the sun to heat water or make electricity（通常放在屋顶的）太阳能电池板

wind turbine /ˈwɪnd ˌtɜːbaɪn/ *n.* [C] 风力发电机

eminent /ˈemɪnənt/ *a.* famous, important, and respected 著名的；杰出的；显赫的

▲ **underestimate** /ˌʌndərˈestɪmeɪt/
v. think or guess that sth. is smaller, cheaper, easier, etc. than it really is（对…）估计不足；低估；看轻
vt. think that sb. is not as good, clever, or skillful as they really are 轻视，小看（某人）

popularize /ˈpɒpjələraɪz/ *vt.*
1 make sth. popular with many people 使受欢迎；宣传；推广
2 make a difficult subject or idea able to be easily understood by ordinary people 使通俗化；使大众化；使易懂

▲ **automation** /ˌɔːtəˈmeɪʃn/ *n.* [C] the use of computers and machines instead of people to do a job 自动化

erode /ɪˈrəʊd/ v.

1 gradually reduce sth. such as sb.'s power or confidence 逐步损害，逐渐削弱（权力或信心）

2 gradually destroy the surface of rock or land so that it begins to disappear, or be gradually destroyed in this way 侵蚀；腐蚀；风化

constraint /kənˈstreɪnt/ n.

1 [C] sth. that limits your freedom to do what you want 限制；束缚；约束力

2 [U] control over the way people are allowed to behave, so that they cannot do what they want 行为约束

▲ **expenditure** /ɪkˈspendɪtʃə/ n.

1 [C, U] money spent by a government, organization, or person 花费；开销；支出

2 [U] the use of time, money, energy, etc. doing sth. 耗费；使用

▲ **recreation** /ˌrekriˈeɪʃən/ n. [C, U] an activity that you do for pleasure or amusement 消遣；娱乐

▲ **vulnerable** /ˈvʌlnərəbəl/ a.

1 easily damaged or hurt by sth. negative or harmful 脆弱的；易受伤的

2 easy to attack or criticize 易受攻击的；易受责难的

fringe /frɪndʒ/ n. [C]

1 the outer or less important part of an area, group, or activity（地区或群体的）边缘，外围；（活动的）次要部分

2 (BrE) short hair that hangs down over your forehead 刘海；额前短垂发

anguish /ˈæŋgwɪʃ/ n. (fml.) [U] mental or physical suffering caused by extreme pain or worry（精神或身体上的）极度痛苦

humid /ˈhjuːmɪd/ a. hot and wet in a way that makes you feel uncomfortable（天气）潮湿（炎热）的

▲ **rural** /ˈrʊərəl/ a.

1 happening in or relating to the countryside, not the city 农村的；乡村的；田园的

2 like the countryside or reminding you of the countryside 像农村的；使人想起农村的

thermal /ˈθɜːməl/ a. (only before noun)

1 relating to or caused by heat 热的；热量的；由热引起的

2 made from special material to keep you warm in very cold weather（衣服）保温的，保暖的

evapotranspiration /ɪˈvæpəˌtrænspɪˈreɪʃən/ n. [U] the process by which water moves from the earth to the air through evaporation and transpiration (= water lost from plants) 蒸散

ailment /ˈeɪlmənt/ n. [C] an illness that is not very serious（不严重的）疾病；微恙

allergy /ˈælədʒi/ n. [C, U] a medical condition in which you become ill or in which your skin becomes red and painful because you have eaten or touched a particular substance 过敏性反应；过敏症

afloat /əˈfləʊt/ a. (not before noun)

1 having enough money to operate or stay out of debt 经济上周转得开的；不欠债的

2 floating on water 漂浮的

vicious /ˈvɪʃəs/ a.

1 violent and cruel in a way that hurts sb. physically 凶险的；会造成伤害的

2 very unkind or unpleasant 狠毒的；恶毒的；恶意的

vicious circle n. (also **vicious cycle**) [sing.] a situation in which one problem causes another problem that then causes the first problem again, so that the whole process continues to be repeated 恶性循环

leverage /ˈliːvərɪdʒ/ n. [U]

1 power to influence people and get the results you want 影响力

2 the action, power, or use of a lever 杠杆作用；杠杆力量；杠杆的使用

imperative /ɪmˈperətɪv/

a. extremely important or urgent 极重要的；
紧急的；迫切的

n. [C] sth. that is very important and urgent
必要的事；紧急的事

deduce /dɪˈdjuːs/ *vt.* (*fml.*) use the knowledge and
information you have in order to understand sth.
or form an opinion about it 推论；推断；演绎

Phrases and expressions

on the horizon   likely to happen in the near
future 将要发生的；即将来临的

on the fringe(s) (of sth.)
1   not completely belonging to or accepted by
    a group of people who share the same job,
    activities, etc. 属于（…的）边缘的
2   at the part of sth. that is farthest from the
    center 在（…的）边缘；在（…的）外围

simply put / put simply   if explained in a clear
and simple way / if explaining it in a clear and
simple way 简单地说

keep (sth. / sb.) afloat
1   have enough money to keep sth. or sb. in
    operation or out of debt（使）经济上周转得开；
    （使）不欠债
2   keep sth. or sb. in a state of floating on water
    （使）漂浮

bid farewell to   say goodbye to sb. or sth.
告别；向…道别

Proper names

the Fourth Industrial Revolution 第四次工业革命

Reading comprehension

Understanding the text

2 Choose the best answer to each of the following questions.

1 In what way have cities been attractive?
  A They encourage businesses to increase service varieties.
  B They ensure the quality of infrastructure in downtown areas.
  C They lower living expenses and provide different opportunities.
  D They improve long-distance commuting and expand the sales market.

2 According to the text, how will the development of new technologies affect cities?
  A It will reduce the advantages of cities.
  B It will weaken the need for transportation.
  C It will disrupt the decentralized supply system.
  D It will slow down the automation of industries.

3 What can be inferred about future delivery of food and merchandise to consumers?
  A It will increase the market share of home-based businesses.
  B It will allow consumers to enjoy free delivery of goods to their homes.
  C It will become less popular because of increasing traffic congestions.
  D It will use transportation means much different from today's vehicles.

4 What did many famous people think of digital technology in the late 1990s?
  A They did not believe mobile phones would be popular soon.
  B They did not think the Internet of Things would be possible.
  C They were certain about the positive impact of virtual proximity.
  D They were confident about the bright future of 4G and 5G technology.

5 How will automation and robotization influence the jobs of urban residents?
  A They will prevent the creation of new jobs.
  B They will cause many residents to lose jobs.
  C They will create more jobs in cities.
  D They will create more white-collar jobs.

6 Why does the author mention "heat islands" in Para. 9?
  A To clarify the real cause of health problems in urban areas.
  B To give an additional example of the disadvantages of cities.
  C To demonstrate the importance of rural areas to the environment.
  D To suggest the need to replace concrete and steel with other building materials.

7 Which of the following is a sign of shrinking cities?
  A Automation creates new job opportunities for urban residents.
  B Housing prices are lowered by changes in the government's tax policy.
  C Large employers leave cities because they can't maintain operation.
  D Industries experience difficulties in growing due to limitations of land.

8 What is the author's attitude toward deurbanization?
  A Opposing.   B Skeptical.
  C Neutral.   D Welcoming.

Critical thinking

3 Work in pairs and discuss the following questions.

1 Do you agree with the author that technological advances will reduce the advantages of living in cities? Why or why not?

2 Do you prefer working remotely from a suburban home or working on site in a downtown office, and why?

3 How do you compare living in a big city and living in a small town? List the three biggest differences and give explanations.

4 Where is your hometown, in the countryside or in a city? What do you like and dislike about it?

5 Of all the cities you have been to, which one do you consider the best to live in, and why?

Collocation

The concept of smart cities is becoming increasingly popular among urban governors. Smart planning is driven by technological advances and innovations achieved in recent decades. In particular, the Internet of Things will have a *massive impact* (B4U1A) on the quality of future urban life. It can *actively improve* (B4U1A) and even transform the *core functionality* (B4U1A) of cities in diverse areas such as infrastructure, business operation, and waste management. Smart cities promise to deliver *optimal safety* (B4U1A), a clean environment featuring *minimal waste* (B4U1A), smooth flow of traffic, *highly efficient* (B4U1A) energy use, and *easy availability* (B4U1A) of services. In fact, we are already *reaping the benefits* (B4U1B) of smart cities. For instance, thanks to the *virtual proximity* (B4U1B) made possible by digital technology, many companies allow their employees to work fully or partly from home. This saves time and resources in *substantial quantities* (B4U1B). In addition, people can live in less crowded areas rather than in *close quarters* (B4U1B) in cities. With all the advantages of smart cities, no wonder policy makers and urban scientists around the world *embrace the trend* (B4U1B) of smart planning. With the *profound changes* (B4U1B) in urban design brought by new technologies, a new age for urban living and a *sustainable future* (B4U1A) of cities are on the horizon.

4 **Professor Cohen is teaching a course on urban design and planning. At the end of his last class, he asked the students to do some reading about intelligent urban planning and the features of future cities. Today his students are presenting their findings. Here are some excerpts of these presentations. While reading them, complete the blanks with appropriate collocations from the texts.**

Cindy

Intelligent city planning will have a 1) *ma_____ impact* on the urban environment we live in. Promoting 2) *mi_____ waste* of resources, it will help make the cities of the future cleaner, greener, and safer. Environmental technologies will effectively decrease air pollution, significantly increase the use of renewable energy, and 3) *a_____ improve* waste control. For instance, infrastructure will be more eco-friendly in that consumption of natural resources will decrease in 4) *sub_____ quantities*. I am confident that smart technology will bring a more 5) *sus_____ future* to our resources and environment.

Smart cities ensure the 6) *o_____ safety* of human lives. For example, fire detection devices integrated into building design can eliminate potential dangers. Crime prevention measures can enhance public safety based on real-time data. Sensors in the homes of seniors living alone can connect them to medical services whenever needed.

Sam

Smart city planning will dramatically change the 7) *co_____ functionality* of cities and make them more comfortable to live in. We know urban development used to evolve around industrial development and economic activities, so a lot of land was used to build factories, roads, offices, and houses. People used to live in 8) *c_____ quarters* within cities because of the 9) *e_____ availability* of services and abundance of job opportunities. However, with the use of smart technology, the landscape of our cities may undergo 10) *pr_____ changes*. Smart management of parking and transportation, wireless delivery of services, as well as increasing automation of production, will largely reduce the need for industrial land, and hence create more space for parks, entertainment, and leisure. As someone living in a tiny apartment on a noisy street, I cannot wait to 11) *r_____ the benefits* of smart cities.

Jerry

Smart cities will use wireless networks and mobile-based applications to connect people, objects, and entities. This further opens the door to a wide range of technological advances and innovations that will make our society 12) *h_____ efficient*.

Communication of real-time data across platforms can help improve various aspects of urban life. I am really fascinated by the prospect of 13) *vir_____ proximity*, with which many things we do physically today can be accomplished digitally in the future. Governments around the world are 14) *em_____ the trend* of digital services. In the near future, citizens can be served online with greater speed and transparency.

Stories of China

Limited space, unlimited growth

As a famous Chinese saying goes, "Up in heaven, there is paradise; down on earth, there are Suzhou and Hangzhou." Hangzhou, capital of east China's Zhejiang Province, is well-known for its beautiful scenery and abundant natural resources. During the past decades of reform and opening up, Hangzhou achieved prosperity through industrialization.

Today, with the boom in information technology, Hangzhou has grown into a paradise for innovation and entrepreneurship, especially in the emerging Internet Plus industries. As reform and opening up entered a new phase, Hangzhou seized the opportunity to develop its digital economy, and its efforts have paid off. Today, it is known as "the capital of e-commerce".

In this digital city, residents can pay for their commute, access medical services, place an order, get a receipt, and do many other things by simply scanning barcodes (条形码) or QR codes with their phones.

The city's infrastructure has also been upgraded to promote the emerging digital economy. Big blocks of high-rise buildings now stand near the northern bank of the Qiantang River. This area used to be villages. Early this century, tall stylish buildings began to spring up here, creating a new "digital forest" in Shangcheng District (上城区).

Shangcheng District not only supports the development of its hi-tech industries but also applies digital technology to urban management to achieve "all-weather, wide-coverage, and high-efficiency" intelligent management. Compared with traditional urban management, intelligent urban management is more convenient and more humane.

There are many examples of this. In the past, if a manhole cover (窨井盖) was displaced or lost, it was usually unknown and could result in people falling in or cars getting their wheels caught. Today, intelligent equipment has been installed on manhole covers to trigger an alarm if they are being moved away. The devices have been installed on all the 4,000-plus manhole covers and the government has the copyright to the software.

Some elderly people live on their own as their children have grown up and are employed elsewhere. Shangcheng District has launched smart homecare projects for these people. The intelligent care system for the elderly makes it easy for the aged to call for help in an emergency and ask for housekeeping services.

As was said by a government official of Hangzhou, "In the past, people regarded the Internet merely as a tool, but now they find it to be a resource, too. By using the Internet, we can achieve unlimited growth even in a limited space."

Exercises

Translation

Translate the following paragraph into English.

城乡一体化（urban-rural integration）是我国现代化和城市化发展的一个新阶段。其目的是通过对城乡发展进行统筹规划，并通过体制改革和政策调整，破除城乡二元经济结构（the urban-rural dual economic structure），从而实现城乡在政策上平等、在产业发展模式上互补，让农村居民享受到与城镇居民同样的文明和福利。只有大力推进城乡一体化，我国整个城乡经济才能实现全面、可持续发展。

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_____

_____

_____

Role-playing: Living in a smart city

Text A introduces what a smart city is like and how it will work in an emergency. A smart city can benefit its inhabitants by being connected, intelligent, efficient, and safe. Suppose you and your family are living in a smart city. What would your life be like? In this unit project, you and your group members will pretend to be a family and work together to role-play a day of your life in a smart city.

Step 1   **Form small groups of four to six. Each group is a family, and you can be a father, a mother, a child, a grandfather, or a grandmother.**

Step 2   **Work together and write a 10-minute play narrating what happens during a day of your smart life. You can begin with a scene in the early morning and end with one in the late evening, or you can choose to demonstrate one or a few major happenings during the day.**

Step 3   **Act out your play as a group and rehearse it as many times as you can. You can dress yourself like any character you are acting. Besides, you can add whatever sound effect that you think is necessary, or use any electronic background scene as an aid to your play.**

Step 4   **Perform your play in class. Ask the audience to vote for the best actor or actress in your group after you finish.**