

Chapter

12

Services and Settlements



Why is this man carrying raw pig meat on his back? Page 440



Why are these farm fields long and narrow rather than square? Page 449

KEY ISSUE 1

Where Are Services Distributed?

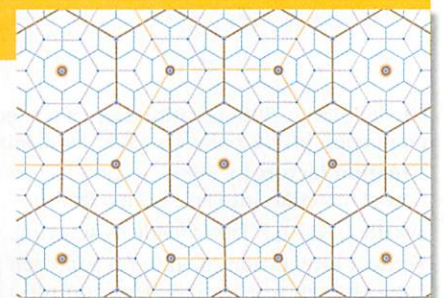


More and More Services p. 431

Most jobs—and most of the growth in jobs—is in services.

KEY ISSUE 2

Where Are Consumer Services Distributed?

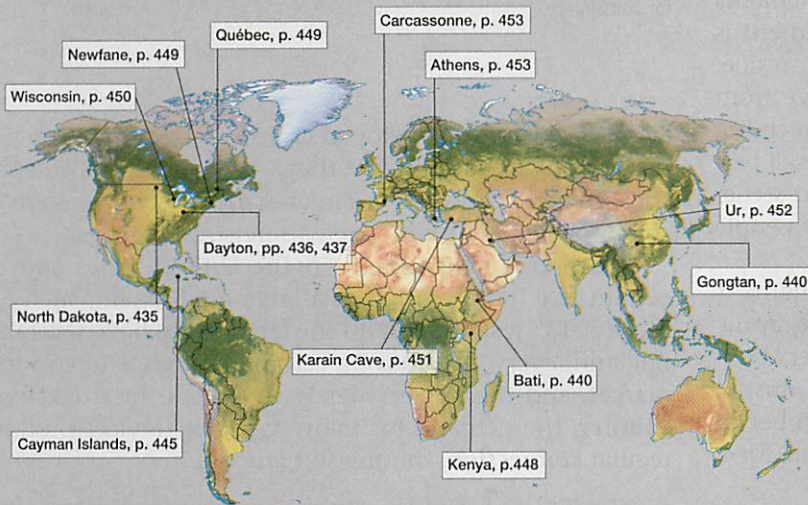


Services for People p. 434

Services for people are located where the people are.

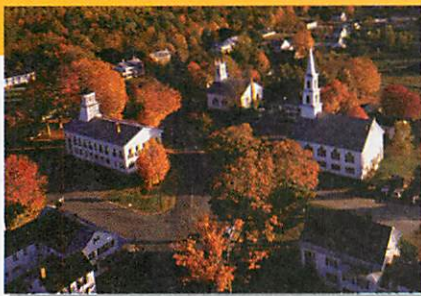


▲ Need to have your computer fixed? Correct a mistake on your credit card bill? Change your plane reservation? The company whose name is on the computer, credit card, or airplane may not actually employ the person who answered your call. Instead, the call-answering job may have been contracted out to another company known as a call center. Call centers are one of the fastest-growing services in the global economy. Many of them are located in India, including this one in Kolkata.



KEY ISSUE 3

Where Are Business Services Distributed?



Services for Businesses p. 442

Most business services are in very large settlements.

KEY ISSUE 4

Why Do Services Cluster in Settlements?



A World of Urban Services p. 448

Settlements can be rural or urban; the urban ones are growing.

Introducing Services and Settlements

In developed countries, most people work in such places as shops, offices, restaurants, universities, and hospitals. These are examples of the tertiary, or service, sector of the economy.

A service is any activity that fulfills a human want or need and returns money to those who provide it. A smaller number of people work on farms or in factories, the primary and secondary sectors.

In sorting out where services are distributed in *space*, geographers see a close link between services and settlements because services are located in settlements. A **settlement** is a permanent collection of buildings where people reside, work, and obtain services. Settlements range in size from tiny rural villages with barely 100 inhabitants to teeming cities with 20 million people. They occupy a very small percentage of Earth's surface, well under 1 percent, but settlements are home to nearly all humans because few people live in isolation.

Explaining why services are clustered in settlements is at one level straightforward for geographers. In geographic terms, only one locational factor is critical for a service—proximity to the market. The optimal location of industry, described in Chapter 11, requires balancing a number of site and situation factors, but the optimal location for a service is simply near its customers.

On the other hand, locating a service calls for far more precise geographic skills than locating a factory. The optimal location for a factory may be an area of several hundred square kilometers—such as Honda's factory, described in the Contemporary Geographic Tools box in Chapter 11—whereas the optimal location for a service may be a very specific *place*, such as a street corner (Figure 12-1).

Service providers often say that the three critical factors in selecting a suitable site are “location, location, and location.” Although geographically imprecise, the expression is a way for nongeographers to appreciate that a successful service must carefully select its precise location. Industries can locate in remote areas, confident that workers, water, and highways will be brought to the location if necessary. The distribution of services must follow to a large extent the distribution of where people live, within a city, country, or world *region*.

However, if services were located merely where people lived, then China and India would have the most, rather than the United States and other developed countries.



▲ FIGURE 12-1 CLUSTERING OF RETAIL SERVICES

Retail services cluster at places, such as freeway exits, that maximize accessibility for consumers.

Services cluster in developed countries because more people able to buy services live there. Within developed countries, larger cities offer a larger *scale* of services than do small towns because more customers reside there.

Every urban settlement in the United States above a certain size has a branch of a large retail chain, such as a McDonald's restaurant, and the larger cities have several. In England, every city above a certain size has a Tesco supermarket, and the larger cities have several. In a developed country, the demand for many types of services produces regular *connections* among settlements.

- **KEY ISSUE 1** divides services—consumer, business, and public—and discusses changes in employment in these main types of services.
- **KEY ISSUE 2** examines *where* services targeted primarily to consumers are located.
- **KEY ISSUE 3** looks at the distribution of services targeted primarily to businesses. Within developed countries, fast-food restaurants may be located in every settlement, but business services cluster in particular locations.
- **KEY ISSUE 4** explains *why* a disproportionately large share of services cluster in large settlements. As in other economic and cultural features, geographers observe trends toward both globalization and local diversity in the distribution of services. In terms of *globalization*, the provision of services is increasingly uniform from one urban settlement to another, especially within developed countries. At the same time, *local diversity* is alive and well in a settlement's distinct mix of services.

KEY ISSUE 1

Where Are Services Distributed?

- Three Types of Services
- Rising and Falling Service Employment

Services generate more than two-thirds of GDP in most developed countries, compared to less than one-half in most developing countries (Figure 12-2). Logically, the distribution of service workers is opposite that of the percentage of primary workers (refer to Figure 10-6).

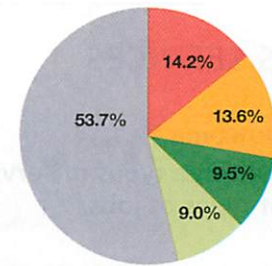
Three Types of Services

The service sector of the economy is subdivided into three types—consumer services, business services, and public services. Each of these sectors is divided into several major subsectors.

CONSUMER SERVICES

The principal purpose of **consumer services** is to provide services to individual consumers who desire them and can afford to pay for them. Nearly one-half of all jobs in the United States are in consumer services. Four main types of consumer services are retail, education, health, and leisure (Figure 12-3):

- **Retail and wholesale services** comprise about 14 percent of all U.S. jobs. Department stores, grocers, and motor vehicle sales and service account for nearly one-half of these jobs; another one-fourth are wholesalers that provide merchandise to retailers.



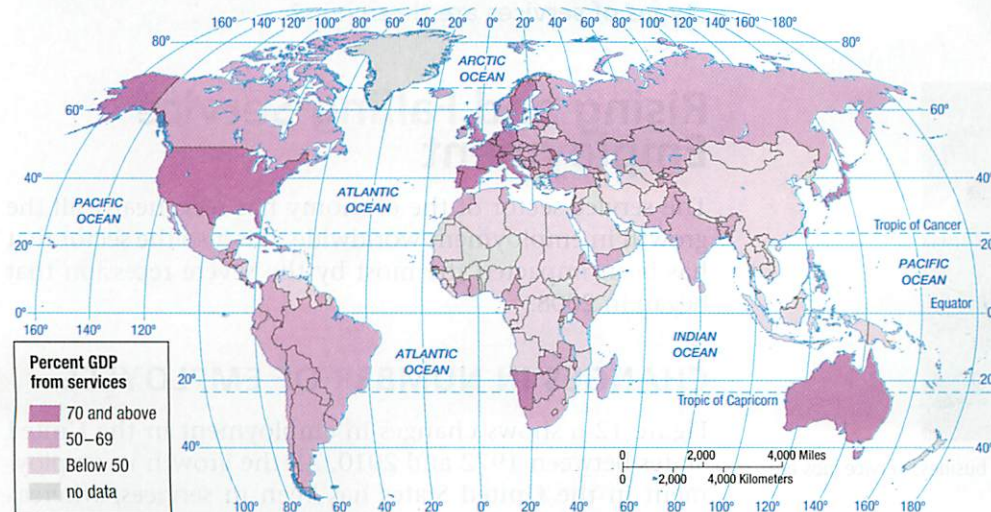
▲ **FIGURE 12-3 U.S. CONSUMER SERVICES** Most consumer service jobs are in retail and restaurants.

- **Education services** comprise about 15 percent of all U.S. jobs. Figure 12-3 shows only 9.5 percent in education services, because it does not include public school teachers, who are shown separately in Figure 12-5.

- **Health and social services** comprise about 14 percent of all U.S. jobs. One-third are in hospitals, one-half in other health care services, such as doctors' offices and nursing homes, and one-sixth in social assistance.

- **Leisure and hospitality services** comprise about 9 percent of all U.S. jobs. Three-fourths of these jobs are in restaurants, bars, and lodging; the other one-fourth are the arts and entertainment.

▼ **FIGURE 12-2 PERCENTAGE OF GDP FROM SERVICES** Services account for more than two-thirds of GDP in developed countries, compared to less than one-half in developing countries.



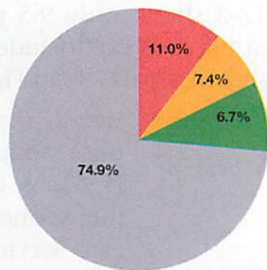
BUSINESS SERVICES

Learning Outcome 12.1.1

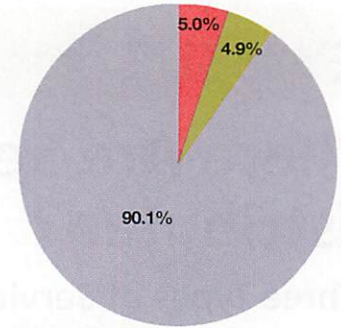
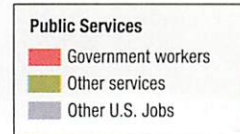
Describe the three types of services and changing numbers of types of jobs.

The principal purpose of **business services** is to facilitate the activities of other businesses. One-fourth of all jobs in the United States are in business services. Professional services, financial services, and transportation services are the three main types of business services (Figure 12-4):

- *Professional services* comprise about 11 percent of all U.S. jobs. Technical services, including law, management, accounting, architecture, engineering, design, and consulting, comprise 60 percent of professional services jobs. Support services, such as clerical, secretarial, and custodial work, account for the other 40 percent.
- *Financial services* comprise about 7 percent of all U.S. jobs. This sector is often called “FIRE,” an acronym for finance, insurance, and real estate. One-half of the financial services jobs are in banks and other financial institutions, one-third in insurance companies, and the remainder in real estate.
- *Transportation and information services* comprise about 7 percent of all U.S. jobs. Transportation, primarily trucking and warehousing, account for 60 percent of these jobs. The other 40 percent are in information services such as publishing and broadcasting, as well as utilities such as water and electricity.



▲ **FIGURE 12-4 U.S. BUSINESS SERVICES** Most business service jobs are in professional services.



▲ **FIGURE 12-5 U.S. PUBLIC SERVICES** Most public service jobs are in local government.

PUBLIC SERVICES

The purpose of **public services** is to provide security and protection for citizens and businesses. About 10 percent of all U.S. jobs are in the public sector (Figure 12-5). Excluding educators, one-sixth of public-sector employees work for the federal government, one-fourth for one of the 50 state governments, and three-fifths for one of the tens of thousands of local governments (Figure 12-5). The census classifies another 5 percent of jobs as “other services” because they don’t fall logically under the categories of consumer, business, and public services.

Pause and Reflect 12.2.1

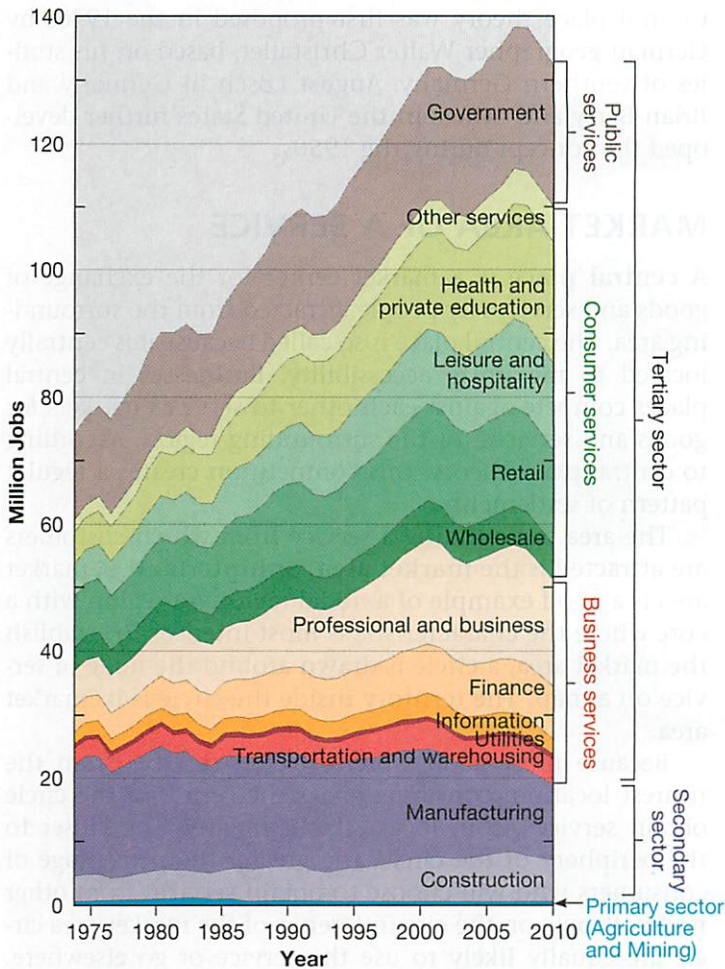
In which sectors of the economy do you or members of your family work? If in the service sector, in which types of services are these jobs?

Rising and Falling Service Employment

The service sector of the economy has seen nearly all the growth in employment worldwide. It is also the sector that has been impacted the most by the severe recession that began in 2008.

CHANGES IN NUMBER OF EMPLOYEES

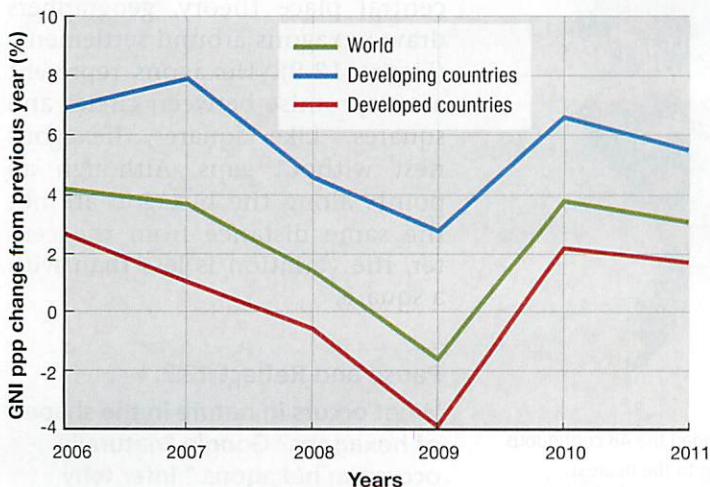
Figure 12-6 shows changes in employment in the United States between 1972 and 2010. All the growth in employment in the United States has been in services, whereas



▲ **FIGURE 12-6 CHANGES IN U.S. EMPLOYMENT** Jobs have increased in the service sector.

employment in primary- and secondary-sector activities has declined.

Within business services, jobs expanded most rapidly in professional services (such as engineering, management, and law), data processing, advertising, and temporary



▲ **FIGURE 12-7 GNI CHANGE** GNI per capita declined during the severe recession that began in 2008.

employment agencies. Jobs grew more slowly in finance and transportation services because of improved efficiency—fewer workers are needed to run trains and answer phones, for example.

On the consumer services side, the most rapid increase has been in the provision of health care, including hospital staff, clinics, nursing homes, and home health-care programs. Other large increases have been recorded in education, entertainment, and recreation. The share of jobs in retailing has not increased; more stores are opening all the time, but they don't need as many employees as in the past.

SERVICES IN THE RECESSION

The service sector of the economy has been the engine of growth in the economy of developed countries, even as industry and agriculture have declined. But it was the service sector that triggered the severe economic recession that began in 2008. Principal contributors to the recession were some of the practices involved in financial services and real estate services, including:

- A rapid rise in real estate prices, encouraging speculators to acquire properties for the purpose of reselling them quickly at even higher prices.
- Poor judgment in lending by financial institutions, especially by offering “subprime” mortgages to individuals whose poor credit history made the loans highly risky.
- Invention of new financial services practices, such as derivatives, in which investors bought and sold risky assets, with the expectation that the value of the assets would continually rise.
- Decisions by government agencies to reduce or eliminate regulation of the practices of financial institutions.
- Unwillingness of financial institutions to make loans once the recession started.

The early twenty-first century recession was also distinctive because it rapidly affected every other region of the world. At the same time, the impact of the global recession varied by region and locality.

The early twenty-first century recession resulted in an absolute decline in world GNI for the first time since the 1930s (Figure 12-7). GNI grew by an annual average of 3.7 percent between 1960 and the start of the recession in 2008. Only twice in that time did GNI grow at a rate of less than 1 percent per year.

CHECK-IN: KEY ISSUE 1

Where Are Services Distributed?

- ✓ Three types of services are consumer, business, and public.
- ✓ The fastest-growing consumer service is health care, and the fastest-growing business service is professional.

KEY ISSUE 2

Where Are Consumer Services Distributed?

- Central Place Theory
- Hierarchy of Consumer Services
- Market Area Analysis

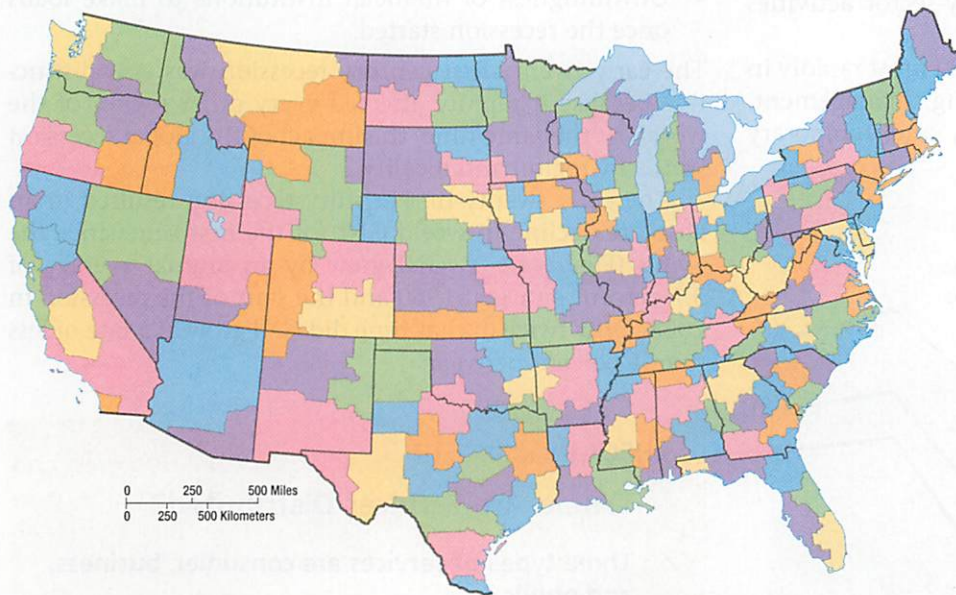
Learning Outcome 12.2.1

Explain the concepts of market area, range, and threshold.

Consumer services and business services do not have the same distributions. Consumer services generally follow a regular pattern based on size of settlements, with larger settlements offering more consumer services than smaller ones. The next Key Issue will describe how business services cluster in specific settlements, creating a specialized pattern.

Central Place Theory

Selecting the right location for a new shop is probably the single most important factor in the profitability of a consumer service. **Central place theory** helps to explain how the most profitable location can be identified.



▲ **FIGURE 12-8 DAILY URBAN SYSTEMS** The U.S. Department of Commerce divided the 48 contiguous states into “daily urban systems,” delineated by functional ties, especially commuting to the nearest metropolitan area. This division of the country into daily urban systems demonstrates that everyone in the United States has access to services in at least one large settlement. Compare this information to the information on TV market areas in Figure 1-18.

Central place theory was first proposed in the 1930s by German geographer Walter Christaller, based on his studies of southern Germany. August Lösch in Germany and Brian Berry and others in the United States further developed the concept during the 1950s.

MARKET AREA OF A SERVICE

A **central place** is a market center for the exchange of goods and services by people attracted from the surrounding area. The central place is so called because it is centrally located to maximize accessibility. Businesses in central places compete against each other to serve as markets for goods and services for the surrounding region. According to central place theory, this competition creates a regular pattern of settlements.

The area surrounding a service from which customers are attracted is the **market area**, or **hinterland**. A market area is a good example of a nodal region—a region with a core where the characteristic is most intense. To establish the market area, a circle is drawn around the node of service on a map. The territory inside the circle is its market area.

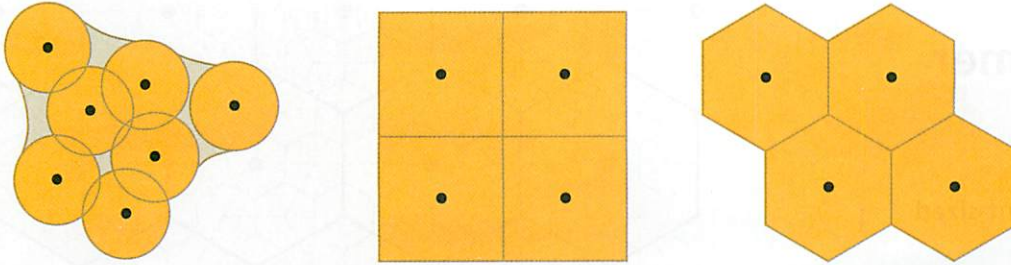
Because most people prefer to get services from the nearest location, consumers near the center of the circle obtain services from local establishments. The closer to the periphery of the circle, the greater the percentage of consumers who will choose to obtain services from other nodes. People on the circumference of the market-area circle are equally likely to use the service or go elsewhere. The United States can be divided into market areas based on the hinterlands surrounding the largest urban settlements (Figure 12-8). Studies conducted by C. A. Doxiadis,

Brian Berry, and the U.S. Department of Commerce allocated the 48 contiguous states to 171 functional regions centered around commuting hubs, which they called “daily urban systems.”

To represent market areas in central place theory, geographers draw hexagons around settlements (Figure 12-9). Hexagons represent a compromise between circles and squares. Like squares, hexagons nest without gaps. Although all points along the hexagon are not the same distance from the center, the variation is less than with a square.

Pause and Reflect 12.2.1

What occurs in nature in the shape of hexagons? Google “naturally occurring hexagons.” Infer why human economic activities also create a hexagonal pattern.



▲ **FIGURE 12-9 WHY GEOGRAPHERS USE HEXAGONS TO DELINEATE MARKET AREAS** (left) **The problem with circles.** Circles are equidistant from center to edge, but they overlap or leave gaps. An arrangement of circles that leaves gaps indicates that people living in the gaps are outside the market area of any service, which is obviously not true. Overlapping circles are also unsatisfactory, for one service or another will be closer, and people will tend to patronize it. (center) **The problem with squares.** Squares nest together without gaps, but their sides are not equidistant from the center. If the market area is a circle, the radius—the distance from the center to the edge—can be measured because every point around a circle is the same distance from the center. But in a square, the distance from the center varies among points along a square. (right) **The hexagon compromise.** Geographers use hexagons to depict the market area of a good or service because hexagons offer a compromise between the geometric properties of circles and squares.

RANGE AND THRESHOLD OF A MARKET AREA

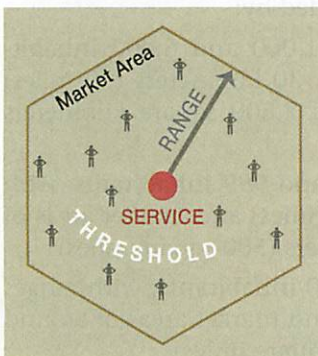
The market area of every service varies. To determine the extent of a market area, geographers need two pieces of information about a service: its range and its threshold (Figure 12-10).

RANGE OF A SERVICE. How far are you willing to drive for a pizza? To see a doctor for a serious problem? To watch a ball game? The **range** is the maximum distance people are willing to travel to use a service. The range is the radius of the circle (or hexagon) drawn to delineate a service's market area.

People are willing to go only a short distance for everyday consumer services, such as groceries and pharmacies. But they will travel longer distances for other services, such as a concert or professional ball game. Thus a convenience store has a small range, whereas a stadium has a large range. In a large urban settlement, for example, the range of a fast-food franchise such as McDonald's is roughly 5 kilometers (3 miles); the range of a casual dining chain such as Steak 'n Shake is roughly 8 kilometers (5 miles), and the range of a stadium is 100 kilometers (60 miles) or more.

As a rule, people tend to go to the nearest available service: Someone in the mood for a McDonald's hamburger is likely to go to the nearest McDonald's. Therefore, the

◀ **FIGURE 12-10 MARKET AREA, RANGE, AND THRESHOLD** The market area is the area of the hexagon, the range is the radius, and the threshold is a sufficient number of people inside the area to support the service.



range of a service must be determined from the radius of a circle that is irregularly shaped rather than perfectly round. The irregularly shaped circle takes in the territory for which the proposed site is closer than competitors' sites.

The range must be modified further because most people think of distance in terms of time rather than in terms of a linear measure such as kilometers or miles. If you ask people how far they are willing to travel to a restaurant or a baseball game, they are more likely to answer in minutes or hours than in distance. If the range of

a good or service is expressed in travel time, then the irregularly shaped circle must be drawn to acknowledge that travel time varies with road conditions. "One hour" may translate into traveling 90 kilometers (60 miles) while driving on an expressway but only 50 kilometers (30 miles) while driving congested city streets.

THRESHOLD OF A SERVICE. The second piece of geographic information needed to compute a market area is the **threshold**, which is the minimum number of people needed to support the service. Every enterprise has a minimum number of customers required to generate enough sales to make a profit. So once the range has been determined, a service provider must determine whether a location is suitable by counting the potential customers inside the irregularly shaped circle. Census data help to estimate the potential population within the circle.

How expected consumers inside the range are counted depends on the product. Convenience stores and fast-food restaurants appeal to nearly everyone, whereas other goods and services appeal primarily to certain consumer groups:

- Movie theaters attract younger people; chiropractors attract older folks.
- Poorer people are drawn to thrift stores; wealthier ones might frequent upscale department stores.
- Amusement parks attract families with children; nightclubs appeal to singles.

Developers of shopping malls, department stores, and large supermarkets may count only higher-income people, perhaps those whose annual incomes exceed \$50,000. Even though the stores may attract individuals of all incomes, higher-income people are likely to spend more and purchase items that carry higher profit margins for the retailer.

Hierarchy of Consumer Services

Learning Outcome 12.2.2

Explain the distribution of different-sized settlements.

Only consumer services that have small thresholds, short ranges, and small market areas are found in small settlements because too few people live in small settlements to support many services. A large department store or specialty store cannot survive in a small settlement because the threshold (the minimum number of people needed) exceeds the population within range of the settlement.

Larger settlements provide consumer services that have larger thresholds, ranges, and market areas. Neighborhoods within large settlements provide services that have small thresholds and ranges. Services patronized by a small number of locals (“mom-and-pop stores”) can coexist in a neighborhood with services that attract many from throughout the settlement. This difference is vividly demonstrated by comparing an on-line business directory for a small settlement with one for a major city. The major city’s directory is much more extensive, with more services and diverse headings showing widely varied services that are unavailable in small settlements.

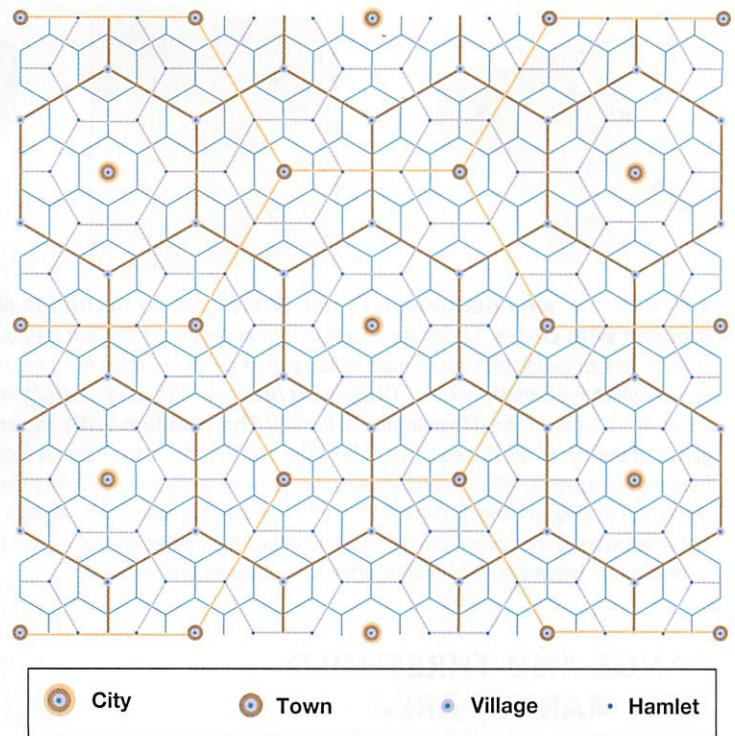
We spend as little time and effort as possible in obtaining consumer services and thus go to the nearest place that fulfills our needs. There is no point in traveling to a distant department store if the same merchandise is available at a nearby one. We travel greater distances only if the price is much lower or if the item is unavailable locally.

NESTING OF SERVICES AND SETTLEMENTS

According to central place theory, market areas across a developed country would be a series of hexagons of various sizes, unless interrupted by physical features such as mountains and bodies of water. Developed countries have numerous small settlements with small thresholds and ranges and far fewer large settlements with large thresholds and ranges.

The nesting pattern can be illustrated with overlapping hexagons of different sizes. Four different levels of market area—hamlet, village, town, and city—are shown in Figure 12-11. Hamlets with very small market areas are represented by the smallest contiguous hexagons. Larger hexagons represent the market areas of larger settlements and are overlaid on the smaller hexagons because consumers from smaller settlements shop for some goods and services in larger settlements.

In his original study, Walter Christaller showed that the distances between settlements in southern Germany



▲ FIGURE 12-11 CENTRAL PLACE THEORY According to central place theory, market areas are arranged in a regular pattern. Larger market areas, based in larger settlements, are fewer in number and farther apart from each other than smaller market areas and settlements. However, larger settlements also provide goods and services with smaller market areas; consequently, larger settlements have both larger and smaller market areas drawn around them.

followed a regular pattern. He identified seven sizes of settlements (market hamlet, township center, county seat, district city, small state capital, provincial head capital, and regional capital city). In southern Germany, the smallest settlement (market hamlet) had an average population of 800 and a market area of 45 square kilometers (17 square miles). The average distance between market hamlets was 7 kilometers (4.4 miles). The figures were higher for the average settlement at each increasing level in the hierarchy. Brian Berry has documented a similar hierarchy of settlements in parts of the U.S. Midwest.

Across much of the interior of the United States, a regular pattern of settlements can be observed, even if not precisely the same as the generalized model shown in Figure 12-11. North-central North Dakota is an example (Figure 12-12). Minot—the largest city in the area, with 41,000 inhabitants—is surrounded by:

- 7 small towns of between 1,000 and 5,000 inhabitants, with average ranges of 30 kilometers (20 miles) and market areas of around 2,800 square kilometers (1,200 square miles)
- 15 villages of between 100 and 999 inhabitants, with ranges of 20 kilometers (12 miles) and market areas of around 1,200 square kilometers (500 square miles)
- 19 hamlets of fewer than 100 inhabitants, with ranges of 15 kilometers (10 miles) and market areas of around 800 square kilometers (300 square miles)

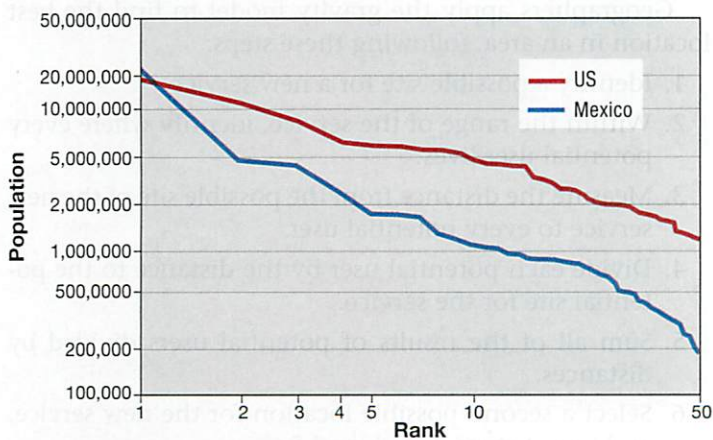


◀ **FIGURE 12-12 CENTRAL PLACE THEORY IN NORTH DAKOTA** Central place theory helps explain the distribution of settlements of varying sizes in North Dakota. Larger settlements are fewer and farther apart, whereas smaller settlements are more numerous and closer together.

RANK-SIZE DISTRIBUTION OF SETTLEMENTS

In many developed countries, geographers observe that ranking settlements from largest to smallest (population) produces a regular pattern. This is the **rank-size rule**, in which the country's *n*th-largest settlement is $1/n$ the population of the largest settlement. In other words, the second-largest city is one-half the size of the largest, the fourth-largest city is one-fourth the size of the largest, and so on. When plotted on logarithmic paper, the rank-size distribution forms a fairly straight line. In the United States and a handful of other countries (Figure 12-13), the distribution of settlements closely follows the rank-size rule.

If the settlement hierarchy does not graph as a straight line, then the country does not follow the rank-size rule.



▲ **FIGURE 12-13 RANK-SIZE DISTRIBUTION OF SETTLEMENTS IN THE UNITED STATES AND MEXICO** The size of settlements follows the rank-size rule in the United States and the primate city rule in Mexico.

Instead, it may follow the **primate city rule**, in which the largest settlement has more than twice as many people as the second-ranking settlement. In this distribution, the country's largest city is called the **primate city**. Mexico is an example of a country that follows the primate city distribution. Its largest city, Mexico City, is five times larger than its second-largest city, Guadalajara.

The existence of a rank-size distribution of settlements is not merely a mathematical curiosity. It has a real impact on the quality of life for a country's inhabitants. A regular hierarchy—as in the United States—indicates that the society is sufficiently wealthy to justify the provision of goods and services to consumers throughout the country. Conversely, the absence of the rank-size distribution in a developing country indicates that there is not enough wealth in the society to pay for a full variety of services. The absence of a rank-size distribution constitutes a hardship for people who must travel long distances to reach an urban settlement with shops and such services as hospitals. Because most people in developing countries do not have cars, buses must be provided to reach larger towns. A trip to a shop or a doctor that takes a few minutes in the United States could take several hours in a developing country.

Pause and Reflect 12.2.2

According to the rank-size rule, the second-largest city in a country should have one-half the population of the largest city, and the tenth-largest city should have one-tenth the population of the largest city. Does Peru follow the rank-size rule or the primate city rule? Google "most populous cities in Peru."

Market Area Analysis

Learning Outcome 12.2.3

Explain how to use threshold and range to find the optimal location for a service.

Geographers apply central place theory to create market area studies that assist service providers with opening and expanding their facilities. And in a severe economic downturn, market area analysis helps determine where to close facilities.

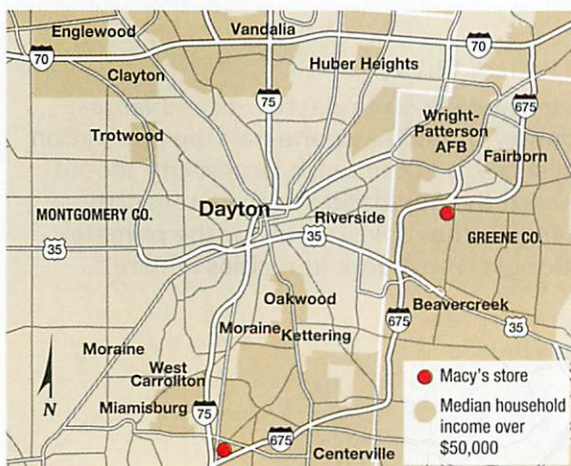
Manufacturers must balance a variety of site and situation factors, as discussed in Chapter 11. In contrast, service providers often say that the three most important factors in determining whether a particular site will be profitable are “location, location, and location.” What they actually mean is that proximity to customers is the only critical geographical factor in locating a service.

The best location for a factory is typically described as a region of the world or perhaps a large area within a region. For example, auto alley—the optimal location for most U.S. motor vehicle factories—is an area of roughly 100,000 square kilometers. For service providers, the optimal location is much more precise: One corner of an intersection can be profitable and another corner of the same intersection unprofitable.

PROFITABILITY OF A LOCATION

A large retailer has many locations to choose from when deciding to build new stores. A suitable site is one with the potential for generating enough sales to justify using the company’s scarce capital to build it. Would a new department store be profitable in your community (Figure 12-14)? The two components of central place theory—range and threshold—together determine the answer. Here’s how:

1. **Compute the range.** You might survey local residents and determine that people are generally willing to travel up to 15 minutes to reach a department store.



▲ FIGURE 12-14 MACY’S DEPARTMENT STORES NEAR DAYTON
Stores are in areas with higher incomes.

2. **Compute the threshold.** A department store typically needs roughly 250,000 people living within a 15-minute radius.
3. **Draw the market area.** Draw a circle with a 15-minute travel radius around the proposed location. Count the number of people within the circle. If more than 250,000 people are within the radius, then the threshold may be high enough to justify locating the new department store in your community. However, your store may need a larger threshold and range to attract some of the available customers if competitors are located nearby.

The Contemporary Geographic Tools feature shows how geographers might use this process to determine the best locations for supermarkets in a region.

The threshold must also be adjusted because the further customers are from the service, the less likely they are to patronize it. Geographers have adapted the gravity model from physics. The **gravity model** predicts that the optimal location of a service is directly related to the number of people in the area and inversely related to the distance people must travel to access it. The best location will be the one that minimizes the distances that all potential customers must travel to reach the service.

According to the gravity model, consumer behavior reflects two patterns:

1. The greater the number of people living in a particular place, the greater is the number of potential customers for a service. An area that contains 100 families will generate more customers than a house containing only one family.
2. The farther people are from a particular service, the less likely they are to use it. People who live 1 kilometer from a store are more likely to patronize it than people who live 10 kilometers away.

Geographers apply the gravity model to find the best location in an area, following these steps:

1. Identify a possible site for a new service.
2. Within the range of the service, identify where every potential user lives.
3. Measure the distance from the possible site of the new service to every potential user.
4. Divide each potential user by the distance to the potential site for the service.
5. Sum all of the results of potential users divided by distances.
6. Select a second possible location for the new service, and repeat steps 2, 3, 4, and 5.
7. Compare the results of step 5 for all possible sites. The site with the highest score has the highest potential number of users and is therefore the optimal location for the service.

Pause and Reflect 12.2.3

When you order a pizza for carry out or delivery, do you get it from the nearest place? Why might you get it from a more distant location?

CONTEMPORARY GEOGRAPHIC TOOLS

Locating a New Supermarket

A large retailer has many locations to choose from when deciding to build new stores. A suitable site is one with the potential for generating enough sales to justify using the company's scarce capital to build it. Major U.S. supermarkets, department stores, mall developers, and other large retailers employ geographers to determine the best location to build new stores. Here are the steps for a large supermarket:

1. **Define the market area.** The first step in forecasting sales for a proposed new retail outlet is to define the market or trade area where the store would derive most of its sales. Analysis relies heavily on the company's records of its customers' credit-card transactions at existing stores. What are the zip codes of customers who paid by credit card? The market area of a department store is typically defined as the zip codes where two-thirds to three-fourths of the customers live.
2. **Estimate the range.** Based on the zip codes of credit-card customers, geographers estimate that the range for a large supermarket is about a 10-minute driving time.
3. **Estimate the threshold.** The threshold for a large supermarket is about 25,000 people with appropriate income levels who live within the 15-minute range. Walmart typically is attracted to areas of modest means, whereas supermarkets such as Kroger, Publix, and Safeway prefer to be near higher-income people. In the Dayton, Ohio, area, for example, Kroger has more stores in the relatively affluent south and east, whereas Walmart has more stores in the relatively poor north and west (Figure 12-15).
4. **Predict the market share.** The proposed new supermarket will have to share customers with competitors. Geographers typically predict market share through the so-called analog method. The

geographer identifies one or more existing stores in locations that he or she judges to be comparable to the location of the proposed store. The geographer then applies the market share of the comparable stores to the proposed new store.

Information about the viability of a proposed new store is depicted through Geographic Information Systems (GIS). One layer of the GIS depicts the trade area of the proposed store. Other layers display characteristics of the people living in the area, such as distribution of households, average income, and competitors' stores.

The ability of the retail geographer is judged on the accuracy of the forecasts. After a new store is open for several years, how close to the actual sales were the forecasts that the geographer made several years earlier?



▲ **FIGURE 12-15 WALMART AND KROGER STORES NEAR DAYTON** (left) Walmart stores are in outer suburbs because that is where most of Walmart's customers live. (right) Kroger stores are more numerous to the south and east where most Kroger customers live.

PERIODIC MARKETS

Learning Outcome 12.2.4

Understand the role of periodic markets in the provision of services in developing countries.

Services at the lower end of the central place hierarchy may be provided at a periodic market, which is a collection of individual vendors who come together to offer goods and services in a location on specified days. A periodic market typically is set up in a street or other public space early in the morning, taken down at the end of the day, and set up in another location the next day (Figure 12-16).

A periodic market provides goods to residents of developing countries, as well as rural areas in developed countries, where sparse populations and low incomes produce purchasing power too low to support full-time retailing. A periodic market makes services available in more villages than would otherwise be possible, at least on a part-time basis. In urban areas, periodic markets offer residents fresh food brought in that morning from the countryside (Figure 12-17).

Many of the vendors in periodic markets are mobile, driving their trucks from farm to market, back to the farm to restock, then to another market. Other vendors, especially local residents who cannot or prefer not to travel to other villages, operate on a part-time basis, perhaps only a few times a year. Other part-time vendors are individuals who are capable of producing only a small quantity of food or handicrafts.

The frequency of periodic markets varies by culture:

- **Muslim countries.** Muslim countries typically conform to the weekly calendar—once a week in each of six cities and no market on Friday, the Muslim day of rest.

▼ **FIGURE 12-16 PERIODIC MARKET** The weekly market at Bati is considered the largest in Ethiopia.



▲ **FIGURE 12-17 BRINGING FOOD TO THE PERIODIC MARKET** Meat is carried to the periodic market at Gongtan, China.

- **Rural China.** According to G. William Skinner, rural China has a three-city, 10-day cycle of periodic markets. The market operates in a central market on days 1, 4, and 7; in a second location on days 2, 5, and 8; in a third location on days 3, 6, and 9; and no market on the tenth day. Three 10-day cycles fit in a lunar month.
- **Korea.** Korea has two 15-day market cycles in a lunar month.
- **Africa.** In Africa, the markets occur every 3 to 7 days. Variations in the cycle stem from ethnic differences.

Pause and Reflect 12.2.4

Identify an example of a periodic market in developed countries.

CHECK-IN: KEY ISSUE 2

Where Are Consumer Services Distributed?

- ✓ Central place theory helps determine the most profitable location for a consumer service.
- ✓ A central place is surrounded by a market area that has a range and a threshold.
- ✓ Market areas of varying sizes nest and overlap.
- ✓ Regular patterns of settlements that provide consumer services can be observed, especially in developed countries.

SUSTAINABILITY AND INEQUALITY IN OUR GLOBAL VILLAGE

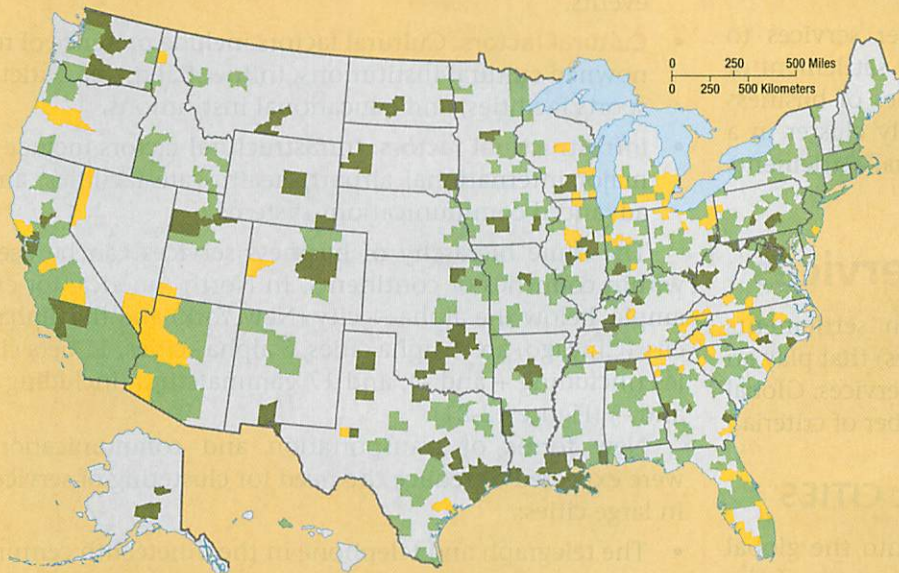
Unequal Spatial Impacts of the Severe Recession

The severe global recession that began in 2008 hit some communities harder than others. As Figure 12-7 shows, developed countries were more severely impacted by the global recession. GNI declined more sharply in developed countries than in developing countries. The countries least affected by the global recession were

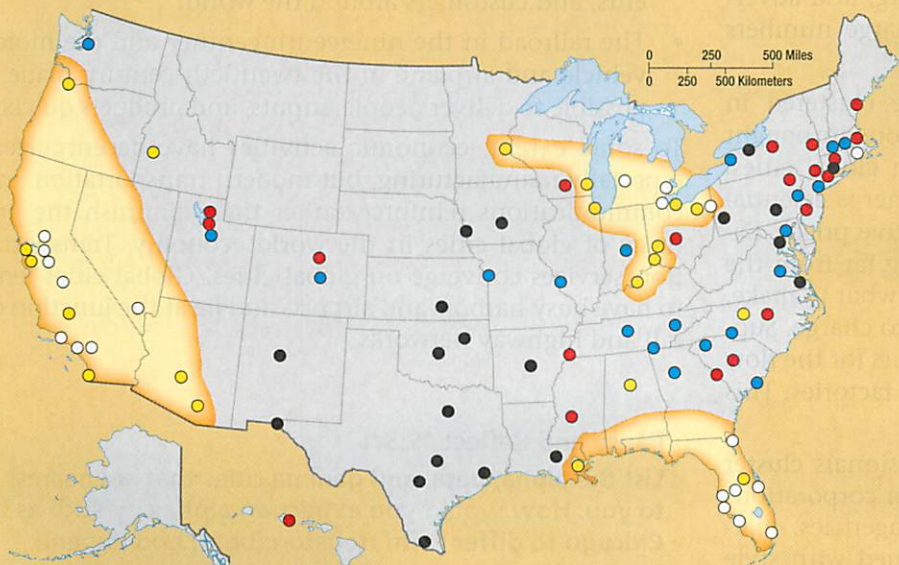
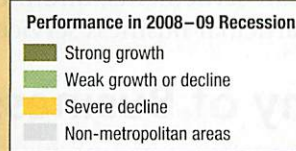
the poorest countries of sub-Saharan Africa. Those countries are the most peripheral to the global economy.

Within the United States, the recession hit some communities harder than others (Figure 12-18). Some of the hardest-hit communities were industrial centers in the Midwest, where bankrupt carmakers

Chrysler and GM were based. But most of the hardest-hit communities were in the South and West, regions that had been the most prosperous. Those communities were especially affected by declines in services, especially real estate and finance (Figure 12-19).



▼ **FIGURE 12-18 IMPACT OF SEVERE RECESSION** The impact of the recession was especially strong in Florida, the Southwest, and the Great Lakes area.



▼ **FIGURE 12-19 IMPACT OF SEVERE RECESSION ON 100 LARGEST U.S. METROPOLITAN AREAS** California and Florida had the largest number of the weakest performing cities.



KEY ISSUE 3

Where Are Business Services Distributed?

- Hierarchy of Business Services
- Business Services in Developing Countries
- Economic Base of Settlements

Learning Outcome 12.3.1

Describe the factors that are used to identify global cities.

Every urban settlement provides consumer services to people in a surrounding area, but not every settlement of a given size has the same number and types of business services. Business services disproportionately cluster in a handful of urban settlements, and individual settlements specialize in particular business services.

Hierarchy of Business Services

Geographers identify a handful of urban settlements known as global cities (also called world cities) that play an especially important role in global business services. Global cities can be subdivided according to a number of criteria.

BUSINESS SERVICES IN GLOBAL CITIES

Global cities are most closely integrated into the global economic system because they are at the center of the flow of information and capital. Business services, including law, banking, insurance, accounting, and advertising, concentrate in disproportionately large numbers in global cities:

- Headquarters of large corporations are clustered in global cities, and shares of these corporations are bought and sold on stock exchanges located in global cities. Obtaining information in a timely manner is essential in order to buy and sell shares at attractive prices. Executives of manufacturing firms meeting far from the factories make key decisions concerning what to make, how much to produce, and what prices to charge. Support staff also far from the factory accounts for the flow of money and materials to and from the factories. This work is done in offices in global cities.
- Lawyers, accountants, and other professionals cluster in global cities to provide advice to major corporations and financial institutions. Advertising agencies, marketing firms, and other services concerned with style and fashion locate in global cities to help corporations

anticipate changes in taste and to help shape those changes.

- As centers for finance, global cities attract the headquarters of the major banks, insurance companies, and specialized financial institutions where corporations obtain and store funds for expansion of production.

Global cities are divided into three levels: alpha, beta, and gamma. These three levels in turn are further subdivided (Figure 12-20). A combination of economic, political, cultural, and infrastructure factors are used to identify global cities and to distinguish among the various ranks:

- **Economic factors.** Economic factors include number of headquarters for multinational corporations, financial institutions, and law firms that influence the global economy.
- **Political factors.** Political factors include hosting headquarters for international organizations and capitals of countries that play a leading role in international events.
- **Cultural factors.** Cultural factors include presence of renowned cultural institutions, influential media outlets, sports facilities, and educational institutions.
- **Infrastructural factors.** Infrastructural factors include a major international airport, health-care facilities, and advanced communications systems.

The same hierarchy of business services can be used within countries or continents. In North America, for example, below the alpha++ city (New York) and the alpha+ city (Chicago) are 4 alpha cities, 5 alpha- cities, 11 beta cities (including + and -), and 17 gamma cities (including + and -) (Figure 12-21).

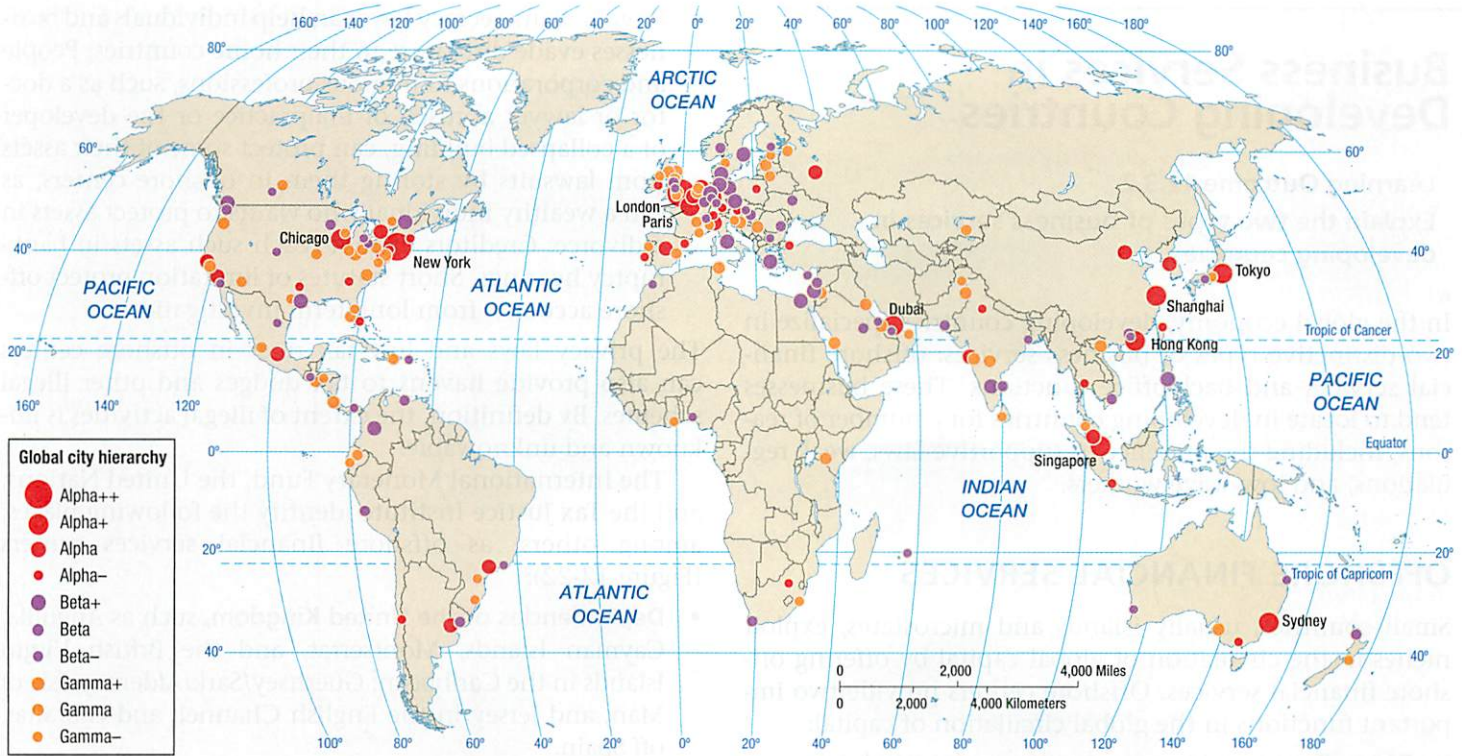
New forms of transportation and communications were expected to reduce the need for clustering of services in large cities:

- The telegraph and telephone in the nineteenth century and the computer in the twentieth century made it possible to communicate immediately with coworkers, clients, and customers around the world.
- The railroad in the nineteenth century and the motor vehicle and airplane in the twentieth century made it possible to deliver people, inputs, and products quickly.

To some extent, economic activities have decentralized, especially manufacturing, but modern transportation and communications reinforce rather than diminish the primacy of global cities in the world economy. Transportation services converge on global cities. Global cities tend to have busy harbors and airports and lie at the junction of rail and highway networks.

Pause and Reflect 12.3.1

List the alpha, beta, and gamma cities that are nearest to you. How would you expect an alpha city such as Chicago to differ from Houston (beta) and Phoenix (gamma)?



▲ **FIGURE 12-20 GLOBAL CITIES** Global cities are centers for the provision of services in the global economy. London and New York, the two dominant global cities, are ranked as alpha++. Other alpha, beta, and gamma global cities play somewhat less central roles in the provision of services than the two dominant global cities. Cities ranked alpha++ and alpha+ are labeled on the map.

CONSUMER AND PUBLIC SERVICES IN GLOBAL CITIES

Because of their large size, global cities have retail services with extensive market areas, but they may have even more retailers than large size alone would predict. A disproportionately large number of wealthy people live in global cities, so luxury and highly specialized products are especially likely to be sold there. Global cities typically offer the most plays, concerts, operas, night clubs, restaurants, bars, and professional sporting events. They contain the largest

libraries, museums, and theaters. London presents more plays than the rest of the United Kingdom combined, and New York nearly has more theaters than the rest of the United States combined. Leisure services of national significance are especially likely to cluster in global cities, in part because they require large thresholds and large ranges and in part because of the presence of wealthy patrons.

Global cities may be centers of national or international political power. Most are national capitals, and they contain mansions or palaces for the head of state, imposing structures for the national legislature and courts, and offices for the government agencies. Also clustered in global cities are offices for groups having business with the government, such as representatives of foreign countries, trade associations, labor unions, and professional organizations. Unlike other global cities, New York is not a national capital. But as the home of the world's major international organization, the United Nations, it attracts thousands of diplomats and bureaucrats, as well as employees of organizations with business at the United Nations. Brussels is a global city because it is the most important center for European Union activities.



◀ **FIGURE 12-21 GLOBAL CITIES IN NORTH AMERICA** Atop the hierarchy of business services are New York and Chicago.

Business Services in Developing Countries

Learning Outcome 12.3.2

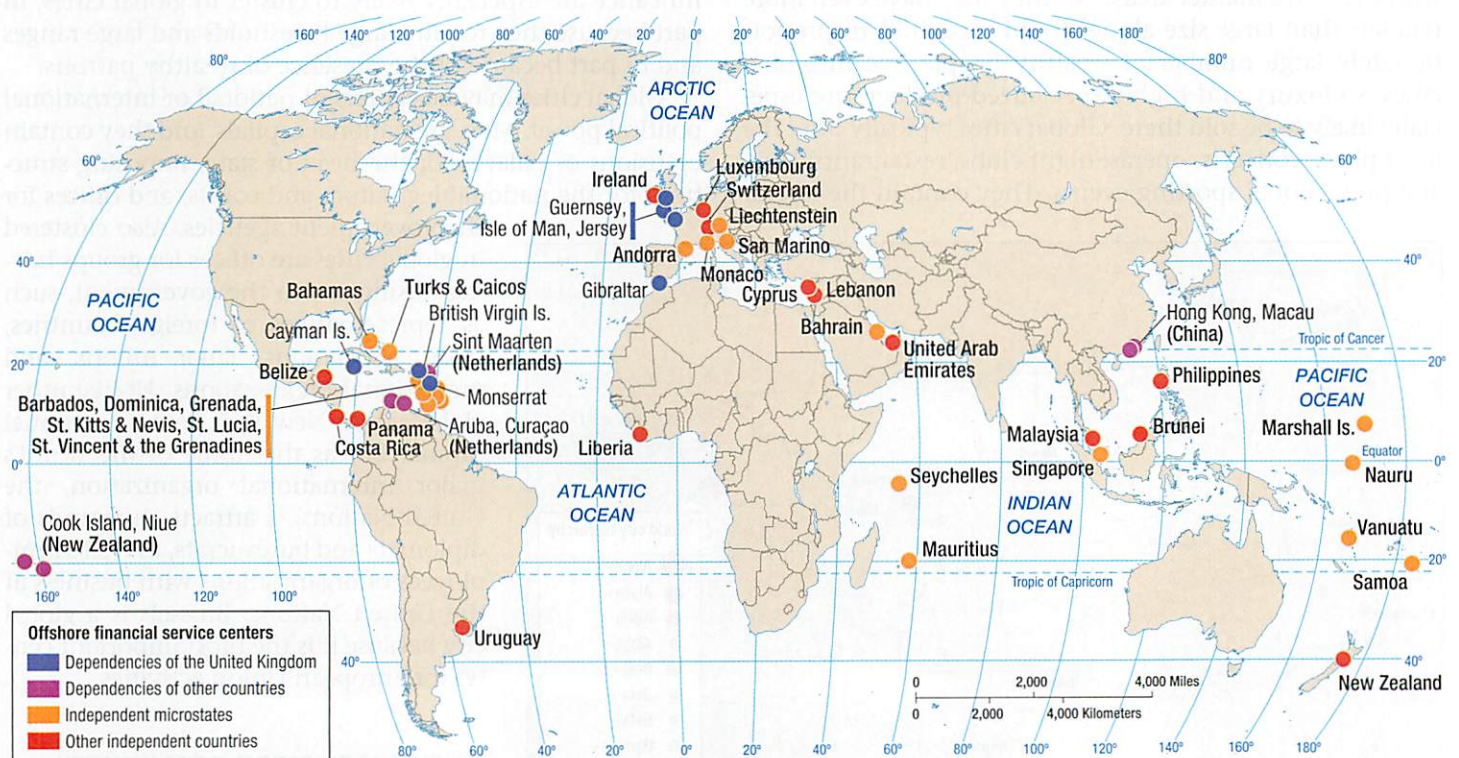
Explain the two types of business services in developing countries.

In the global economy, developing countries specialize in two distinctive types of business services: offshore financial services and back-office functions. These businesses tend to locate in developing countries for a number of reasons, including the presence of supportive laws, weak regulations, and low-wage workers.

OFFSHORE FINANCIAL SERVICES

Small countries, usually islands and microstates, exploit niches in the circulation of global capital by offering offshore financial services. Offshore centers provide two important functions in the global circulation of capital:

- Taxes.** Taxes on income, profits, and capital gains are typically low or nonexistent. Companies incorporated in an offshore center also have tax-free status, regardless of the nationality of the owners. The United States loses an estimated \$70 billion in tax revenue each year because companies operating in the country conceal their assets in offshore tax havens.
 - Privacy.** Bank secrecy laws can help individuals and businesses evade disclosure in their home countries. People and corporations in litigious professions, such as a doctor or lawyer accused of malpractice or the developer of a collapsed building, can protect some of their assets from lawsuits by storing them in offshore centers, as can a wealthy individual who wants to protect assets in a divorce. Creditors cannot reach such assets in bankruptcy hearings. Short statutes of limitation protect offshore accounts from long-term investigation.
- The privacy laws and low tax rates in offshore centers can also provide havens to tax dodges and other illegal schemes. By definition, the extent of illegal activities is unknown and unknowable.
- The International Monetary Fund, the United Nations, and the Tax Justice Institute identify the following places, among others, as offshore financial services centers (Figure 12-22):
- Dependencies of the United Kingdom**, such as Anguilla, Cayman Islands, Montserrat, and the British Virgin Islands in the Caribbean; Guernsey/Sark/Alderney, Isle of Man, and Jersey in the English Channel; and Gibraltar, off Spain.
 - Dependencies of other countries**, such as Cook Island and Niue, controlled by New Zealand; Aruba, Curaçao, and Sint Maarten, controlled by the Netherlands; and Hong Kong and Macau, controlled by China.
 - Independent island countries**, such as The Bahamas, Barbados, Dominica, Grenada, St. Kitts & Nevis, St. Lucia,



▲ FIGURE 12-22 OFFSHORE FINANCIAL SERVICE CENTERS Offshore financial service centers include microstates and dependencies of other countries.

St. Vincent & the Grenadines, and Turks & Caicos in the Caribbean; the Marshall Islands, Nauru, Samoa, and Vanuatu in the Pacific Ocean; and Mauritius and Seychelles in the Indian Ocean.

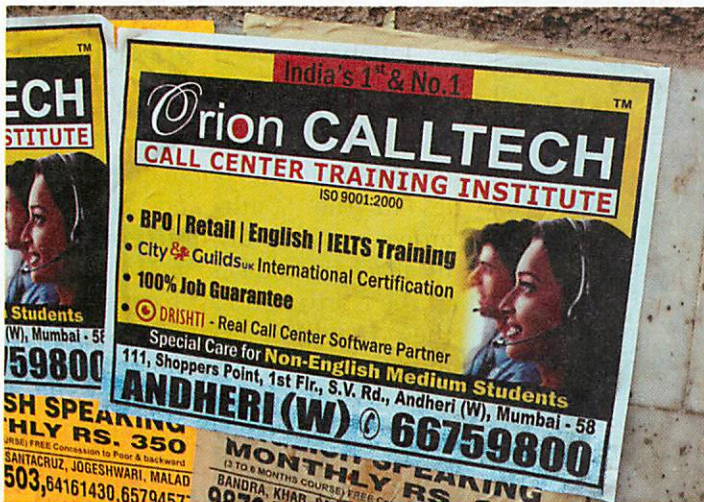
- **Other independent countries**, such as Andorra, Cyprus, Ireland, Liechtenstein, Luxembourg, Monaco, San Marino, and Switzerland in Europe; Belize, Costa Rica, Panama, and Uruguay in Latin America; Liberia in Africa; and Bahrain, Brunei, Lebanon, Malaysia, New Zealand, the Philippines, Singapore, and the United Arab Emirates in Asia.

A prominent example is the Cayman Islands, a British Crown Colony in the Caribbean near Cuba. The Caymans comprise three main islands and several smaller ones totaling around 260 square kilometers (100 square miles), with 40,000 inhabitants. Several hundred banks with assets of more than \$1 trillion are legally based in the Caymans. Most of these banks have only a handful of people, if any, actually working in the Caymans.

In the Caymans, it is a crime to discuss confidential business—defined as matters learned on the job—in public. Assets placed in an offshore center by an individual or a corporation in a trust are not covered by lawsuits originating in the United States, Britain, or other service centers. To get at those assets, additional lawsuits would have to be filed in the offshore centers, where privacy laws would shield the individual or corporation from undesired disclosures.

BUSINESS-PROCESS OUTSOURCING

The second distinctive type of business service found in peripheral regions is back-office functions, also known as business-process outsourcing (BPO). Typical back-office functions include insurance claims processing, payroll management, transcription work, and other routine clerical activities (Figure 12-23). Back-office work also includes centers for responding to billing inquiries related to credit cards, shipments, and claims, or technical inquiries related to installation, operation, and repair.



▲ FIGURE 12-23 CALL CENTER Young Indians are recruited to work in call centers.

Traditionally, companies housed their back-office staff in the same office building downtown as their management staff, or at least in nearby buildings. A large percentage of the employees in a downtown bank building, for example, would be responsible for sorting paper checks and deposit slips. Proximity was considered important to assure close supervision of routine office workers and rapid turnaround of information.

Rising rents downtown have induced many business services to move routine work to lower-rent buildings elsewhere. In most cases, sufficiently low rents can be obtained in buildings in the suburbs or nearby small towns. However, for many business services, improved telecommunications have eliminated the need for spatial proximity.

Selected developing countries have attracted back offices for two reasons related to labor:

- **Low wages.** Most back-office workers earn a few thousand dollars per year—higher than wages paid in most other sectors of the economy, but only one-tenth the wages paid for workers performing similar jobs in developed countries. As a result, what is regarded as menial and dead-end work in developed countries may be considered relatively high-status work in developing countries and therefore able to attract better-educated, more-motivated employees in developing countries than would be possible in developed countries.
- **Ability to speak English.** Many developing countries offer lower wages than developed countries, but only a handful of developing countries possess a large labor force fluent in English. In Asia, countries such as India, Malaysia, and the Philippines have substantial numbers of workers with English-language skills, a legacy of British and American colonial rule. Major multinational companies such as American Express and General Electric have extensive back-office facilities in those countries.

The ability to communicate in English over the telephone is a strategic advantage in competing for back offices with neighboring countries, such as Indonesia and Thailand, where English is less commonly used. Familiarity with English is an advantage not only for literally answering the telephone but also for gaining a better understanding of the preferences of American consumers through exposure to English-language music, movies, and television.

Workers in back offices are often forced to work late at night, when it's daytime in the United States, peak demand for inquiries. Many employees must arrive at work early and stay late because they lack their own transportation, so they depend on public transportation, which typically does not operate late at night. Sleeping and entertainment rooms are provided at work to fill the extra hours.

Pause and Reflect 12.3.2

When it is 3 P.M. on a Tuesday where you live, what time and day is it at a call center in India? Refer to Figure 1-11.

Economic Base of Settlements

Learning Outcome 12.3.3

Explain the concept of economic base.

A settlement's distinctive economic structure derives from its **basic industries**, which export primarily to consumers outside the settlement. **Nonbasic industries** are enterprises whose customers live in the same community—essentially, consumer services. A community's unique collection of basic industries defines its **economic base**.

A settlement's economic base is important because exporting by the basic industries brings money into the local economy, thus stimulating the provision of more nonbasic consumer services for the settlement. New basic industries attract new workers to a settlement, and these workers bring their families with them. The settlement then attracts additional consumer services to meet the needs of the new workers and their families. Thus a new basic industry stimulates establishment of new supermarkets, laundromats, restaurants, and other consumer services. But a new nonbasic service, such as a supermarket, will not induce construction of new basic industries.

A community's basic industries can be identified by computing the percentage of the community's workers employed in different types of businesses. The percentage of workers employed in a particular industry in a settlement is then compared to the percentage of all workers in the country employed in that industry. If the percentage is much higher in the local community, then that type of business is a basic economic activity.

SPECIALIZATION OF CITIES IN DIFFERENT SERVICES

Settlements in the United States can be classified by their type of basic activity (Figure 12-24). Each type of basic activity has a different spatial distribution. The concept of basic industries originally referred to manufacturing. Some communities specialize in durable manufactured goods, such as steel and automobiles, others in nondurable manufactured goods, such as textiles, apparel, food, chemicals, and paper. Most communities that have an economic base of manufacturing durable goods are clustered between northern Ohio and southeastern Wisconsin, near the southern Great Lakes. Nondurable manufacturing industries, such as textiles, are clustered in the Southeast, especially in the Carolinas.

In a postindustrial society, such as the United States, increasingly the basic economic activities are in business, consumer, or public services. Geographers Ó hUallacháin and Reid have documented examples of settlements that specialize in particular types of services. Examples of settlements specializing in business services include:

- **General business:** Large metropolitan areas, especially Chicago, Los Angeles, New York, and San Francisco.
- **Computing and data processing services:** Boston and San Jose.
- **High-tech industries support services:** Austin, Orlando, and Raleigh-Durham.
- **Military activity support services:** Albuquerque, Colorado Springs, Huntsville, Knoxville, and Norfolk.
- **Management-consulting services:** Washington, D.C.

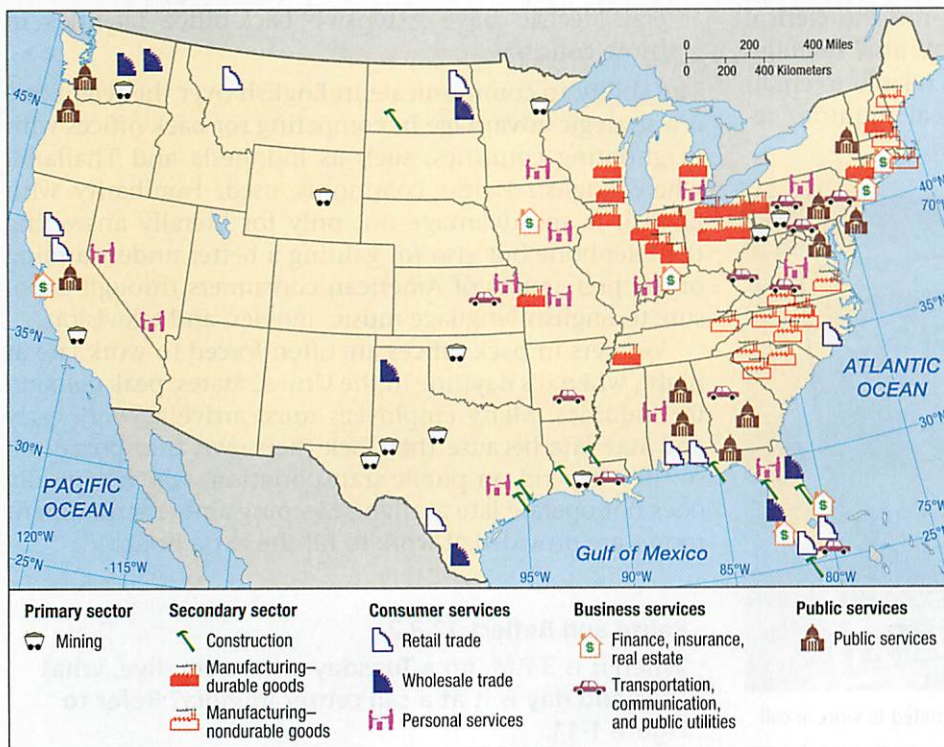
Examples of settlements specializing in consumer services include:

- **Entertainment and recreation:** Atlantic City, Las Vegas, and Reno.
- **Medical services:** Rochester, Minnesota.

Examples of settlements specializing in public services include:

- **State capitals:** Sacramento and Tallahassee.
- **Large universities:** Tuscaloosa.
- **Military bases:** Arlington.

Although the populations of cities in the South and West have grown more rapidly in recent years, Ó hUallacháin and Reid found that cities in the North and East have expanded their provision of business services more rapidly. Northern and eastern cities that were once major manufacturing centers have been transformed



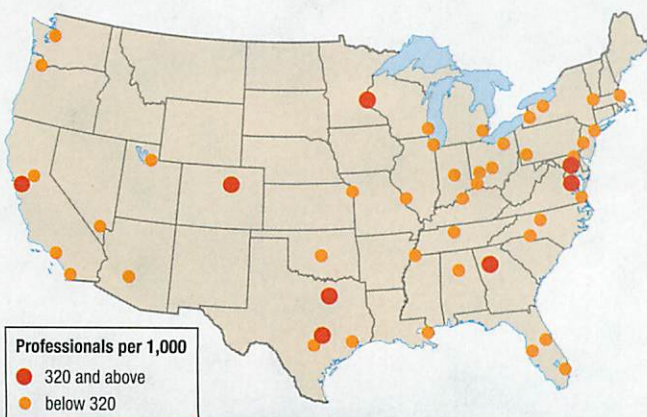
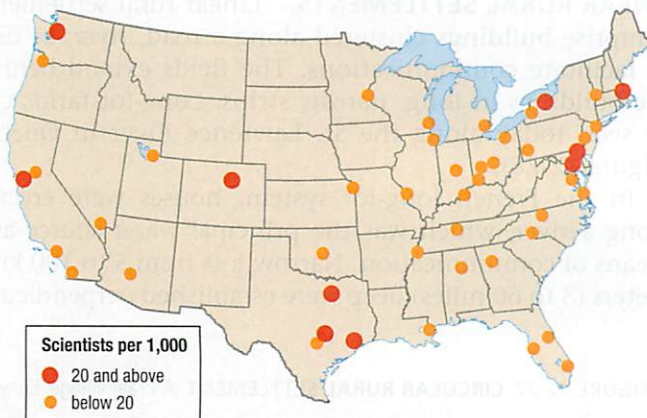
◀ **FIGURE 12-24 ECONOMIC BASE OF U.S. CITIES** Cities specialize in different economic activities.

into business service centers. These cities have moved more aggressively to restructure their economic bases to offset sharp declines in manufacturing jobs.

Steel was once the most important basic industry of Cleveland and Pittsburgh, but now health services such as hospitals and clinics and medical high-technology research are more important. Baltimore once depended for its economic base on manufacturers of fabricated steel products, such as Bethlehem Steel, General Motors, and Westinghouse. The city's principal economic asset was its port, through which raw materials and fabricated products passed. As these manufacturers declined, the city's economic base turned increasingly to services, taking advantage of its clustering of research-oriented universities, especially in medicine. The city is trying to become a center for the provision of services in biotechnology.

DISTRIBUTION OF TALENT

Individuals possessing special talents are not distributed uniformly among cities. Some cities have a higher percentage of talented individuals than others (Figure 12-25). To some extent, talented individuals are attracted to the cities with the most job opportunities and financial incentives. But the principal enticement for talented individuals to cluster in some cities more than others is cultural rather than economic, according to research conducted by



▲ FIGURE 12-25 GEOGRAPHY OF TALENT Some cities have concentrations of scientists and professionals.

Richard Florida. Individuals with special talents gravitate toward cities that offer more cultural diversity.

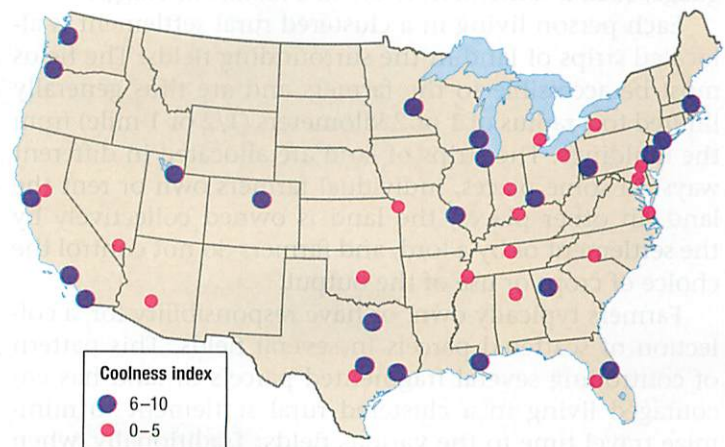
Florida measured talent as a combination of the percentage of people in the city with college degrees, the percentage employed as scientists or engineers, and the percentage employed as professionals or technicians. He used three measures of cultural diversity: the number of cultural facilities per capita, the percentage of gay men, and a "coolness" index. The "coolness" index, developed by *POV Magazine*, combined the percentage of population in their 20s, the number of bars and other nightlife places per capita, and the number of art galleries per capita (Figure 12-26). A city's gay population was based on census figures for the percentage of households consisting of two adult men. Two adult men who share a house may not be gay, but Florida assumed that the percentage of adult men living together who were gay did not vary from one city to another.

Florida found a significant positive relationship between the distribution of talent and the distribution of diversity in the largest U.S. cities. In other words, cities with high cultural diversity tended to have relatively high percentages of talented individuals. Washington, San Francisco, Boston, and Seattle ranked among the top in both talent and diversity, whereas Las Vegas was near the bottom in both. Attracting talented individuals is important for a city because these individuals are responsible for promoting economic innovation. They are likely to start new businesses and infuse the local economy with fresh ideas.

CHECK-IN: KEY ISSUE 3

Where Are Business Services Distributed?

- ✓ Business services cluster in global cities.
- ✓ Developing countries provide offshore financial services and business-process outsourcing.
- ✓ Communities specialize in the provision of particular services; the specialized services constitute a community's economic base.



▲ FIGURE 12-26 GEOGRAPHY OF CULTURAL DIVERSITY The map is based on a "coolness" index developed by *POV Magazine*.

KEY ISSUE 4

Why Do Services Cluster in Settlements?

- Services in Rural Settlements
- Urbanization

Learning Outcome 12.4.1

Describe the difference between clustered and dispersed rural settlements.

Services are clustered in settlements. Rural settlements are centers for agriculture and provide a small number of services. Urban settlements are centers for consumer and business services. One-half of the people in the world live in rural settlements and the other half in urban settlements.

Services in Rural Settlements

Rural settlements are either clustered or dispersed. A **clustered rural settlement** is an agricultural-based community in which a number of families live in close proximity to each other, with fields surrounding the collection of houses and farm buildings. A **dispersed rural settlement**, typical of the North American rural landscape, is characterized by farmers living on individual farms isolated from neighbors rather than alongside other farmers in settlements.

CLUSTERED RURAL SETTLEMENTS

A clustered rural settlement typically includes homes, barns, tool sheds, and other farm structures, plus consumer services, such as religious structures, schools, and shops. A handful of public and business services may also be present in a clustered rural settlement. In common language, such a settlement is called a *hamlet* or *village*.

Each person living in a clustered rural settlement is allocated strips of land in the surrounding fields. The fields must be accessible to the farmers and are thus generally limited to a radius of 1 or 2 kilometers (1/2 or 1 mile) from the buildings. The strips of land are allocated in different ways. In some places, individual farmers own or rent the land. In other places, the land is owned collectively by the settlement or by a lord, and farmers do not control the choice of crops or use of the output.

Farmers typically own, or have responsibility for, a collection of scattered parcels in several fields. This pattern of controlling several fragmented parcels of land has encouraged living in a clustered rural settlement to minimize travel time to the various fields. Traditionally, when the population of a settlement grew too large for the capacity of the surrounding fields, new settlements were

established nearby. This was possible because not all land was under cultivation.

Homes, public buildings, and fields in a clustered rural settlement are arranged according to local cultural and physical characteristics. Clustered rural settlements are often arranged in one of two types of patterns: circular or linear.

CIRCULAR RURAL SETTLEMENTS. Circular rural settlements comprise a central open space surrounded by structures. The following are examples:

- Kraal villages in sub-Saharan Africa were built by the Maasi people, who are pastoral nomads. Women have the principal responsibility for constructing them. The kraal villages have enclosures for livestock in the center, surrounded by a ring of houses. Compare *kraal* to the English word *corral* (Figure 12-27).
- Gewandorf settlements were once found in rural Germany. von Thünen observed this circular rural pattern in his landmark agricultural studies during the nineteenth century (refer to Figure 10-52). Gewandorf settlements consisted of a core of houses, barns, and churches, encircled by different types of agricultural activities. Small garden plots were located in the first ring surrounding the village, with cultivated land, pastures, and woodlands in successive rings.

LINEAR RURAL SETTLEMENTS. Linear rural settlements comprise buildings clustered along a road, river, or dike to facilitate communications. The fields extend behind the buildings in long, narrow strips. Long-lot farms can be seen today along the St. Lawrence River in Québec (Figure 12-28).

In the French long-lot system, houses were erected along a river, which was the principal water source and means of communication. Narrow lots from 5 to 100 kilometers (3 to 60 miles) deep were established perpendicular

▼ FIGURE 12-27 CIRCULAR RURAL SETTLEMENT A kraal village, Kenya.





▲ FIGURE 12-28 CLUSTERED LINEAR RURAL SETTLEMENT Québec long lots.

to the river, so that each original settler had river access. This created a linear settlement along the river. These long, narrow lots were eventually subdivided. French law required that each son inherit an equal portion of an estate, so the heirs established separate farms in each division. Roads were constructed inland parallel to the river for access to inland farms. In this way, a new linear settlement emerged along each road, parallel to the original riverfront settlement.

CLUSTERED SETTLEMENTS IN COLONIAL AMERICA.

New England colonists built clustered settlements centered on an open area called a common (Figure 12-29). Settlers grouped their homes and public buildings, such

▼ FIGURE 12-29 CLUSTERED COLONIAL AMERICAN SETTLEMENT Newfane, Vermont, includes a courthouse and church buildings clustered around a central common.



as the church and school, around the common. In addition to their houses, each settler had a home lot of $\frac{1}{2}$ to 2 hectares (1 to 5 acres), which contained a barn, a garden, and enclosures for feeding livestock. New England colonists favored clustered settlements for several reasons:

- They typically traveled to the New World in a group. The English government granted an area of land, in New England perhaps 4 to 10 square miles (10 to 25 square kilometers). Members of the group then traveled to America to settle the land and usually built the settlement near the center of the land grant.

- The colonists wanted to live close together to reinforce common cultural and religious values. Most came from the same English vil-

lage and belonged to the same church. Many of them left England in the 1600s to gain religious freedom. The settlement's leader was often an official of the Puritan Church, and the church played a central role in daily activities.

- They clustered their settlements for defense against attacks by Native Americans.

Each villager owned several discontinuous parcels on the periphery of the settlement to provide the variety of land types needed for different crops. Beyond the fields, the town held pastures and woodland for the common use of all residents. Outsiders could obtain land in the settlement only by gaining permission from the town's residents. Land was not sold but rather was awarded to an individual when the town's residents felt confident that the recipient would work hard. Settlements accommodated a growing population by establishing new settlements nearby. As in the older settlements, the newer ones contained central commons surrounded by houses and public buildings, home lots, and outer fields.

The contemporary New England landscape contains remnants of the old clustered rural settlement pattern. Many New England towns still have a central common surrounded by the church, school, and various houses. However, quaint New England towns are little more than picturesque shells of clustered rural settlements because today's residents work in shops and offices rather than on farms.

Pause and Reflect 12.4.1

How might the presence of clustered rural settlements in New England have contributed to the region's distinctive dialect of English noted in Chapter 5?

DISPERSED RURAL SETTLEMENTS

Learning Outcome 12.4.2

Explain the types of services in early settlements.

Dispersed rural settlements were more common in the American colonies outside New England. Meanwhile, in New England and in the United Kingdom, clustered rural settlements were converted to a dispersed pattern.

DISPERSED RURAL SETTLEMENTS IN THE UNITED STATES.

The Middle Atlantic colonies were settled by more heterogeneous groups than those in New England. Colonists came from Germany, the Netherlands, Ireland, Scotland, and Sweden, as well as from England. Most arrived in Middle Atlantic colonies individually rather than as members of a cohesive religious or cultural group. Some bought tracts of land from speculators. Others acquired land directly from individuals who had been given large land grants by the English government, including William Penn (Pennsylvania), Lord Baltimore (Maryland), and Sir George Carteret (the Carolinas).

Dispersed settlement patterns dominated in the American Midwest in part because the early settlers came primarily from the Middle Atlantic colonies. The pioneers crossed the Appalachian Mountains and established dispersed farms on the frontier (Figure 12-30). Land was plentiful and cheap, and people bought as much as they could manage. In New England, a dispersed distribution began to replace clustered settlements in the eighteenth century. Eventually people bought, sold, and exchanged land to create large, continuous holdings instead of several isolated pieces.

The clustered rural settlement pattern worked when the population was low, but settlements had no spare land to meet the needs of a population that was growing through natural increase and net in-migration. A shortage of land eventually forced immigrants and children to strike out

alone and claim farmland on the frontier. In addition, the cultural bonds that had created clustered rural settlements were weakened. Descendants of the original settlers were less interested in the religious and cultural values that had unified the original immigrants.

DISPERSED RURAL SETTLEMENTS IN THE UNITED KINGDOM.

To improve agricultural production, a number of European countries converted their rural landscapes from clustered settlements to dispersed patterns. Dispersed settlements were considered more efficient for agriculture than clustered settlements. A prominent example was the **enclosure movement** in Great Britain, between 1750 and 1850. The British government transformed the rural landscape by consolidating individually owned strips of land surrounding a village into a single large farm owned by an individual. When necessary, the government forced people to give up their former holdings.

Owning several discontinuous fields around a clustered rural settlement had several disadvantages: Farmers lost time moving between fields, villagers had to build more roads to connect the small lots, and farmers were restricted in what they could plant. With the introduction of farm machinery, farms operated more efficiently at a larger scale.

The enclosure movement brought greater agricultural efficiency, but it destroyed the self-contained world of village life. Village populations declined drastically as displaced farmers moved to urban settlements. Because the enclosure movement coincided with the Industrial Revolution, villagers who were displaced from farming moved to urban settlements and became workers in factories and services. Some villages became the centers of the new, larger farms, but villages that were not centrally located to a new farm's extensive land holdings were abandoned and replaced with entirely new farmsteads at more strategic locations. As a result, the isolated, dispersed farmstead, unknown in medieval England, is now a common feature of that country's rural landscape.

▼ FIGURE 12-30 DISPERSED RURAL SETTLEMENT Wisconsin.



SERVICES IN EARLY SETTLEMENTS

Before the establishment of permanent settlements as service centers, people lived as nomads, migrating in small groups across the landscape in search of food and water. They gathered wild berries and roots or killed wild animals for food (see Chapter 10). At some point, groups decided to build permanent settlements. Several families clustered together in a rural location and obtained food in the surrounding area. What services would these nomads require? Why would they establish permanent settlements to provide these services?



▲ **FIGURE 12-31 EARLY SETTLEMENT** Karain Cave, Turkey. Evidence of human settlement has been found in the cave dating back 150,000–200,000 years.

No one knows the precise sequence of events through which settlements were established to provide services. Based on archaeological research, settlements probably originated to provide consumer and public services. Business services came later.

EARLY CONSUMER SERVICES. The earliest permanent settlements may have been established to offer consumer services, specifically places to bury the dead (Figure 12-31). Perhaps nomadic groups had rituals honoring the deceased, including ceremonies commemorating the anniversary of a death. Having established a permanent resting place for the dead, the group might then install priests at the site to perform the service of saying prayers for the deceased. This would have encouraged the building of structures—places for ceremonies and dwellings. By the time recorded history began about 5,000 years ago, many settlements existed, and some featured temples. In fact, until the invention of skyscrapers in the late nineteenth century, religious buildings were often the tallest structures in a community.

Settlements also may have been places to house families, permitting unburdened males to travel farther and faster in their search for food. Women kept “home and hearth,” making household objects, such as pots, tools, and clothing, and educating the children. These household-based services evolved over thousands of years into schools, libraries, theaters, museums, and other institutions that create and store a group’s values and heritage and transmit them from one generation to the next.

People also needed tools, clothing, shelter, containers, fuel, and other material goods. Settlements therefore became manufacturing centers. Men gathered the materials needed to make a variety of objects, including stones for tools and weapons, grass for containers and matting, animal hair for clothing, and wood for shelter and heat.

Women used these materials to manufacture household objects and maintain their dwellings. The variety of consumer services expanded as people began to specialize. One person could be skilled at repairing tools, another at training horses. People could trade such services with one another. Settlements took on a retail-service function.

EARLY PUBLIC SERVICES. Public services probably followed religious activities into the early permanent settlements. A group’s political leaders also chose to live permanently in the settlement, which may have been located for strategic reasons, to protect the group’s land claims.

Everyone in a settlement was vulnerable to attack from other groups, so for protection, some members became soldiers, stationed in the settlement. The settlement likely was a good base from which the group could defend nearby food sources against competitors. For defense, the group might surround the settlement with a wall. Defenders were stationed at small openings or atop the wall, giving them a great advantage over attackers. Thus settlements became citadels—centers of military power. Walls proved an extremely effective defense for thousands of years, until warfare was revolutionized by the introduction of gunpowder in Europe in the fourteenth century.

EARLY BUSINESS SERVICES. Everyone in settlements needed food, which was supplied by the group through hunting or gathering. At some point, someone probably wondered: Why not bring in extra food for hard times, such as drought or conflict? This perhaps was the origin of transportation services.

Not every group had access to the same resources because of the varied distribution of vegetation, animals, fuel wood, and mineral resources across the landscape. People brought objects and materials they collected or produced into the settlement and exchanged them for items brought by others. Settlements became warehousing centers to store the extra food. The settlement served as neutral ground where several groups could safely come together to trade goods and services. To facilitate this trade, officials in the settlement provided producer services, such as regulating the terms of transactions, setting fair prices, keeping records, and creating a currency system.

Through centuries of experiments and accidents, residents of early settlements realized that some of the wild vegetation they had gathered could generate food if deliberately placed in the ground and nursed to maturity—in other words, agriculture, as described in Chapter 10. Over time, settlements became surrounded by fields, where people produced most of their food by planting seeds and raising animals rather than by hunting and gathering.

Pause and Reflect 12.4.2

Infer what functions caves might have served for early humans, in addition to burying the dead.

Urbanization

Learning Outcome 12.4.3

Identify important prehistoric, ancient, and medieval urban settlements.

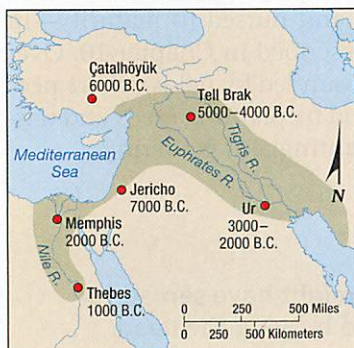
Settlements existed prior to the beginning of recorded history around 5,000 years ago. With a few exceptions, these were rural settlements. As recently as 1800, only 3 percent of Earth's population lived in urban settlements. Two centuries later, one-half of the world's people live in urban settlements.

EARLIEST URBAN SETTLEMENTS

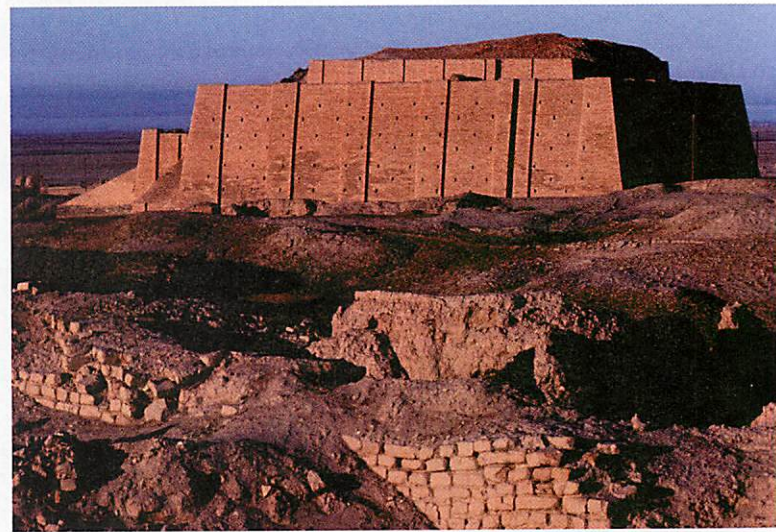
Settlements may have originated in Mesopotamia, part of the Fertile Crescent of Southwest Asia (see Figure 8-10), and diffused at an early date west to Egypt and east to China and to South Asia's Indus Valley. Or settlements may have originated independently in each of the four hearths. In any case, from these four hearths, settlements diffused to the rest of the world.

PREHISTORIC URBAN SETTLEMENTS. The earliest urban settlements were probably in the Fertile Crescent of Southwest Asia and North Africa (Figure 12-32). Among the oldest well-documented urban settlements is Ur in Mesopotamia (present-day Iraq). Ur, which means "fire," was where Abraham lived prior to his journey to Canaan in approximately 1900 B.C., according to the Bible. Archaeologists have unearthed ruins in Ur that date from approximately 3000 B.C. (Figure 12-33).

ANCIENT URBAN SETTLEMENTS. Settlements were first established in the eastern Mediterranean about 2500 B.C. The oldest settlements include Knossos on the island of Crete, Troy in Asia Minor (Turkey), and Mycenae in Greece. These settlements were trading centers for the thousands of islands dotting the Aegean Sea and the eastern Mediterranean and provided the government, military protection, and other public services for their surrounding hinterlands. They were organized into **city-states**—independent self-governing communities that included the settlement and nearby countryside.



◀ **FIGURE 12-32 LARGEST URBAN SETTLEMENTS IN PREHISTORIC TIMES** The earliest known large urban settlements were in the Fertile Crescent of Southwest Asia and Egypt.



▲ **FIGURE 12-33 PREHISTORIC URBAN SETTLEMENT: UR** The remains of Ur, in present-day Iraq, provide evidence of early urban civilization. Ancient Ur was compact, perhaps covering 100 hectares (250 acres), and was surrounded by a wall. The most prominent building, the stepped temple, called a *ziggurat*, was originally constructed around 4,000 years ago. The ziggurat was originally a three-story structure with a base that was 64 by 46 meters (210 by 150 feet) and the upper stories stepped back. Four more stories were added in the sixth century B.C. Surrounding the ziggurat was a dense network of small residences built around courtyards and opening onto narrow passageways. The excavation site was damaged during the two wars in Iraq.

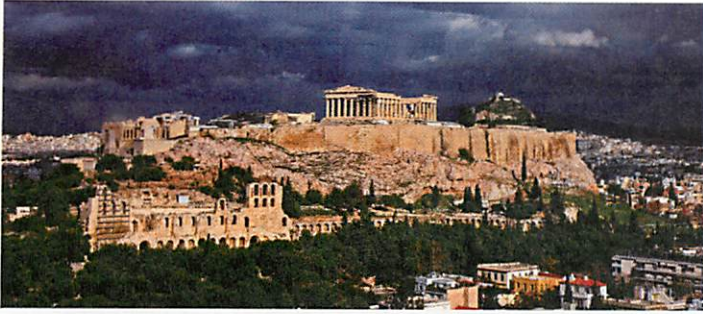
Athens, the largest city-state in ancient Greece (Figure 12-34), made substantial contributions to the development of culture, philosophy, and other elements of Western civilization, an example of the traditional distinction between urban settlements and rural. The urban settlements provided not only public services but also a concentration of consumer services, notably cultural activities, not found in smaller settlements.

The rise of the Roman Empire encouraged urban settlement. With much of Europe, North Africa, and Southwest Asia under Roman rule, settlements were established as centers of administrative, military, and other public services, as well as retail and other consumer services. Trade was encouraged through transportation and utility services, notably construction of many roads and aqueducts, and the security the Roman legions provided.

The city of Rome—the empire's center for administration, commerce, culture, and all other services—grew to at least 250,000 inhabitants, although some claim that the population may have reached 1 million. The city's centrality in the empire's communications network was reflected in the old saying "All roads lead to Rome."

With the fall of the Roman Empire in the fifth century, urban settlements declined. The empire's prosperity had rested on trading in the secure environment of imperial Rome. But with the empire fragmented under hundreds of rulers, trade diminished. Large urban settlements shrank or were abandoned. For several hundred years, Europe's cultural heritage was preserved largely in monasteries and isolated rural areas.

MEDIEVAL URBAN SETTLEMENTS. Urban life began to revive in Europe in the eleventh century, as feudal



▲ **FIGURE 12-34 ANCIENT URBAN SETTLEMENT: ATHENS** Dominating the skyline of modern Athens is the ancient hilltop site of the city, the Acropolis. Ancient Greeks selected this high place because it was defensible, and they chose it as a place to erect shrines to their gods. The most prominent structure on the Acropolis is the Parthenon, built in the fifth century B.C. to honor the goddess Athena. The structure in the foreground is the Herodes Atticus Odeon, a theater built in 161 A.D. Behind the Odeon is the Propylaea, which was the entrance gate to the Acropolis. To the right of the Parthenon, in the background, is the Chapel of St. George, built in the nineteenth century atop Mount Lycabettus, the highest point in Athens.



▲ **FIGURE 12-35 MEDIEVAL URBAN SETTLEMENT: CARCASSONNE** Medieval European cities, such as Carcassonne in southwestern France, were often surrounded by walls for protection. The walls have been demolished in most places, but they still stand around the medieval center of Carcassonne.

lords established new urban settlements. The lords gave residents charters of rights with which to establish independent cities in exchange for their military service. Both the lord and the urban residents benefited from this arrangement. The lord obtained people to defend his territory at less cost than maintaining a standing army. For their part, urban residents preferred periodic military service to the burden faced by rural serfs, who farmed the lord's land and could keep only a small portion of their own agricultural output.

With their newly won freedom from the relentless burden of rural serfdom, the urban dwellers set about expanding trade. Surplus from the countryside was brought into the city for sale or exchange, and markets were expanded through trade with other free cities. The trade among different urban settlements was enhanced by new roads and greater use of rivers. By the fourteenth century, Europe was covered by a dense network of small market towns serving the needs of particular lords.

The largest medieval European urban settlements served as power centers for the lords and church leaders, as well as major market centers. The most important public services occupied palaces, churches, and other prominent buildings arranged around a central market square. The tallest and most elaborate structures were usually churches, many of which still dominate the landscape of smaller European towns. In medieval times, European urban settlements were usually surrounded by walls even though by then cannonballs could destroy them (Figure 12-35). Dense and compact within the walls, medieval urban settlements lacked space for construction, so ordinary shops and houses nestled into the side of the walls and the large buildings. Most of these modest medieval shops and homes, as well as the walls, have been demolished in modern times, with only the



▲ **FIGURE 12-36 LARGEST SETTLEMENTS SINCE 1 A.D.** The largest cities have been in China for most of the past 2,000 years.

massive churches and palaces surviving. Modern tourists can appreciate the architectural beauty of these medieval churches and palaces, but they do not receive an accurate image of a densely built medieval town.

After the collapse of the Roman Empire, most of the world's largest urban settlements were clustered in China (Figure 12-36). Several cities in China are estimated to have exceeded 1 million inhabitants between 700 and 1800 A.D., including Chang'an (now Xian), Kaifeng, Hangzhou, Jinling (now Nanjing), and Beijing. London grabbed the title of world's largest urban settlement during the nineteenth century, as part of the Industrial Revolution. New York held the title briefly during the mid-twentieth century, and Tokyo is now considered to be the world's largest urban settlement.

Pause and Reflect 12.4.3

Medieval walled cities were constructed near political boundaries. How far is the medieval walled city of Carcassonne, France, from an international boundary?

RAPID GROWTH OF URBAN SETTLEMENTS

Learning Outcome 12.4.4

Explain the two dimensions of urbanization.

The process by which the population of urban settlements grows, known as **urbanization**, has two dimensions: an increase in the *number* of people living in urban settlements and an increase in the *percentage* of people living in urban settlements. The distinction between these two factors is important because they occur for different reasons and have different global distributions.

INCREASING PERCENTAGE OF PEOPLE IN URBAN SETTLEMENTS. The population of urban settlements exceeded that of rural settlements for the first time in human history in 2008 (Figure 12-37). The percentage of people living in urban settlements had increased from 3 percent in 1800 to 6 percent in 1850, 14 percent in 1900, 30 percent in 1950, and 47 percent in 2000.

The percentage of people living in urban settlements reflects a country's level of development. In developed countries, about three-fourths of the people live in urban areas, compared to about two-fifths in developing countries. The major exception to the global pattern is Latin America, where the urban percentage is comparable to the level of developed countries. The higher percentage of urban residents in developed countries is a consequence of changes in economic structure during the past two centuries—first the Industrial Revolution in the nineteenth century and then the growth of services in the twentieth. The world map of urban percentages looks very much like the world map of percentage of GDP derived from services (see Figure 12-2).

The percentage of urban dwellers is high in developed countries because over the past 200 years, rural residents have migrated from the countryside to work in the factories and services that are concentrated in cities. The need

for fewer farm workers has pushed people out of rural areas, and rising employment opportunities in manufacturing and services have lured them into urban areas. Because everyone resides either in an urban settlement or a rural settlement, an increase in the percentage living in urban areas has produced a corresponding decrease in the percentage living in rural areas.

INCREASING NUMBER OF PEOPLE IN URBAN SETTLEMENTS.

Developed countries have a higher percentage of urban residents, but developing countries have more of the very large urban settlements (Figure 12-38). Eight of the 10 most populous cities are currently in developing countries: Cairo, Delhi, Jakarta, Manila, Mexico City, São Paulo, Seoul, and Shanghai. New York and Tokyo are the two large cities in developed countries. In addition, 44 of the 50 largest urban settlements are in developing countries. That developing countries dominate the list of largest urban settlements is remarkable because urbanization was once associated with economic development. In 1800, 7 of the world's 10 largest cities were in Asia. In 1900, after diffusion of the Industrial Revolution from the United Kingdom to today's developed countries, all 10 of the world's largest cities were in Europe and North America.

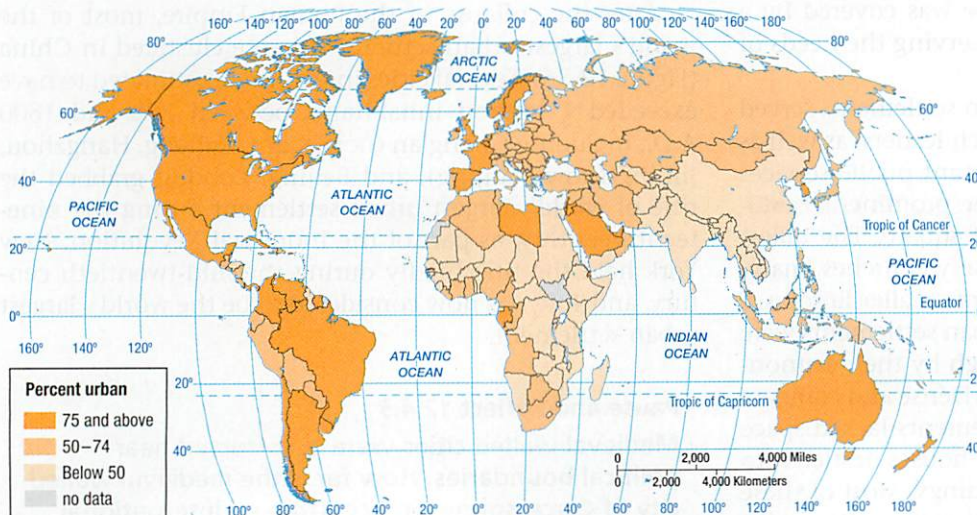
In developing countries, migration from the countryside is fueling half of the increase in population in urban settlements, even though job opportunities may not be available. The other half results from high natural increase rates; in Africa, the natural increase rate accounts for three-fourths of urban growth.

DIFFERENCES BETWEEN URBAN AND RURAL SETTLEMENTS

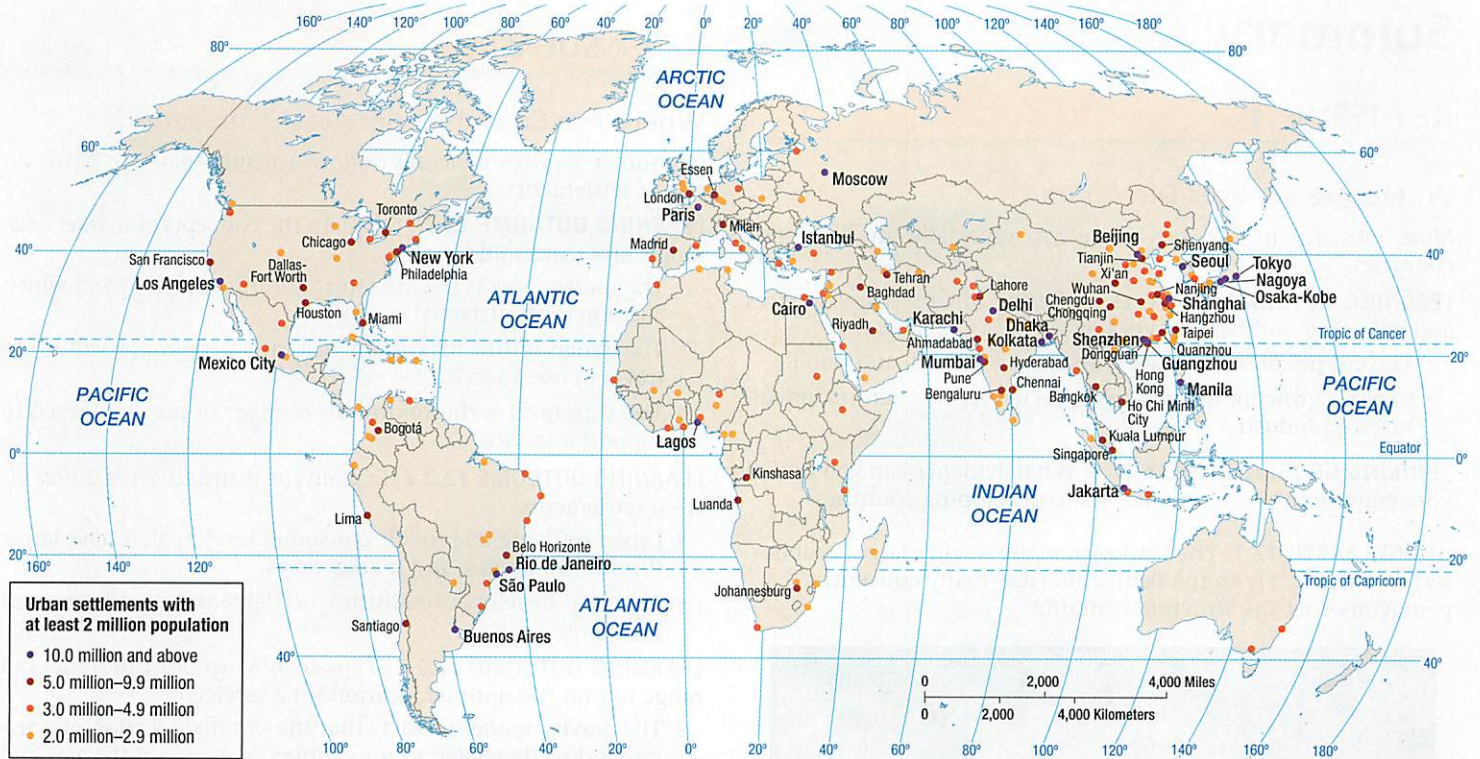
A century ago, social scientists observed striking differences between urban and rural residents. Louis Wirth argued during the 1930s that an urban dweller follows a different way of life than does a rural dweller. Thus Wirth defined a city as a permanent settlement that has three characteristics: large size, high population density, and socially heterogeneous people. These characteristics produced differences in the social behavior of urban and rural residents.

LARGE SIZE. If you live in a rural settlement, you know most of the other inhabitants and may even be related to many of them. The people with whom you relax are probably the same ones you see in local shops and at church.

In contrast, if you live in an urban settlement, you can know only a small percentage of the other residents. You meet most of them in specific roles—your supervisor, your lawyer, your supermarket cashier, your electrician.



▲ **FIGURE 12-37 PERCENTAGE LIVING IN URBAN SETTLEMENTS** Developed countries have higher percentages of urban residents than do developing countries.



▲ FIGURE 12-38 URBAN SETTLEMENTS WITH AT LEAST 2 MILLION INHABITANTS

Most of the world's largest urban settlements are in developing countries, especially in East Asia, South Asia, and Latin America.

Most of these relationships are contractual: You are paid wages according to a contract, and you pay others for goods and services. Consequently, the large size of an urban settlement produces different social relationships than those formed in rural settlements.

HIGH DENSITY. High density also produces social consequences for urban residents, according to Wirth. The only way that a large number of people can be supported in a small area is through specialization. Each person in an urban settlement plays a special role or performs a specific task to allow the complex urban system to function smoothly. At the same time, high density also encourages social groups to compete to occupy the same territory.

SOCIAL HETEROGENEITY. The larger the settlement, the greater the variety of people. A person has greater freedom in an urban settlement than in a rural settlement to pursue an unusual profession, sexual orientation, or cultural interest. In a rural settlement, unusual actions might be noticed and scorned, but urban residents are more tolerant of diverse social behavior. Regardless of values and preferences, in a large urban settlement, individuals can find people with similar interests. But despite the freedom and independence of an urban settlement, people may also feel lonely and isolated. Residents of a crowded urban settlement often feel that they are surrounded by people who are indifferent and reserved.

Wirth's three-part distinction between urban and rural settlements may still apply in developing countries. But in developed countries, social distinctions between urban and rural life have blurred. According to Wirth's definition, nearly everyone in a developed country now is urban. All but 1 percent of workers in developed societies hold "urban" types of jobs. Nearly universal ownership of automobiles, telephones, televisions, and other modern communications and transportation has also reduced the differences between urban and rural lifestyles in developed countries. Almost regardless of where you live in a developed country, you have access to urban jobs, services, culture, and recreation.

CHECK-IN: KEY ISSUE 4

Why Do Services Cluster in Settlements?

- ✓ Settlements are either rural or urban; rural settlements, which specialize in agricultural services, may be clustered or dispersed.
- ✓ Few humans lived in urban settlements until the nineteenth century.
- ✓ Developed countries have higher percentages of urban residents, but developing countries have most of the very large cities.

Summary

KEY ISSUE 1

Where Are Services Distributed?

Most jobs are in the service sector, especially in developed countries.

LEARNING OUTCOME 12.1.1: Describe the three types of services and changing numbers of types of jobs.

- Three types of services are consumer, business, and public.
- Jobs are growing in the service sector rather than in agriculture and industry.

THINKING GEOGRAPHICALLY 12.1: What evidence can you find in your community of economic ties to developing countries?

GOOGLE EARTH 12.1: The Pentagon is the world's largest public-sector building. Fly to the Pentagon. How many concentric pentagons does the structure contain?



Key Terms

Basic industries (p. 446) Industries that sell their products or services primarily to consumers outside the settlement.

Business services (p. 432) Services that primarily meet the needs of other businesses, including professional, financial, and transportation services.

Central place (p. 434) A market center for the exchange of services by people attracted from the surrounding area.

Central place theory (p. 434) A theory that explains the distribution of services based on the fact that settlements serve as centers of market areas for services; larger settlements are fewer and farther apart than smaller settlements and provide services for a larger number of people who are willing to travel farther.

City-state (p. 452) A sovereign state comprising a city and its immediate hinterland.

Clustered rural settlement (p. 448) A rural settlement in which the houses and farm buildings of each family are situated close to each other, with fields surrounding the settlement.

Consumer services (p. 431) Businesses that provide services primarily to individual consumers, including retail services and education, health, and leisure services.

Dispersed rural settlement (p. 448) A rural settlement pattern characterized by isolated farms rather than clustered villages.

KEY ISSUE 2

Where Are Consumer Services Distributed?

Consumer services generally follow a regular pattern, based on size of settlements.

LEARNING OUTCOME 12.2.1: Explain the concepts of market area, range, and threshold.

- The market area is the area surrounding a service from which customers are attracted.
- The range is the maximum distance people are willing to travel to use a service.
- The threshold is the minimum number of people needed to support a service.

LEARNING OUTCOME 12.2.2: Explain the distribution of different-sized settlements.

- Larger settlements provide consumer services that have larger thresholds, ranges, and market areas.
- In many developed countries, settlements follow a regular hierarchy.

LEARNING OUTCOME 12.2.3: Explain how to use threshold and range to find the optimal location for a service.

- The gravity model predicts that the optimal location of a service is directly related to the number of people in the area and inversely related to the distance people must travel to access it.

LEARNING OUTCOME 12.2.4: Understand the role of periodic markets in the provision of services in developing countries.

- A periodic market provides goods where sparse populations and low incomes produce purchasing power too low to support full-time retailing.

THINKING GEOGRAPHICALLY 12.2: In most communities, the largest employers other than local government are consumer services. What are the largest consumer services in your community? You can Google “largest employers [your community]” to find out.

GOOGLE EARTH 12.2: West Edmonton Mall, in Edmonton, Alberta, is the largest mall in North America. How does it compare in area with Jungle Jim's, shown in Google Earth 10.2?



Economic base (p. 446) A community's collection of basic industries.

Enclosure movement (p. 450) The process of consolidating small landholdings into a smaller number of larger farms in England during the eighteenth century.

Gravity model (p. 438) A model which holds that the potential use of a service at a particular location is directly related to the number of people in a location and inversely related to the distance people must travel to reach the service.

Market area (or hinterland) (p. 434) The area surrounding a central place from which people are attracted to use the place's goods and services.

Nonbasic industries (p. 446) Industries that sell their products primarily to consumers in the community.

KEY ISSUE 3

Where Are Business Services Distributed?

Business services disproportionately cluster in a handful of urban settlements.

LEARNING OUTCOME 12.3.1: Describe the factors that are used to identify global cities.

- Global cities (or world cities) are the centers of the global flows of information and capital.
- Several tiers of global cities offer varying levels of business services.

LEARNING OUTCOME 12.3.2: Explain the two types of business services in developing countries.

- Some small countries offer offshore financial services, which attract investors because of low taxes and extreme privacy.
- Developing countries also specialize in back-office operations, also called business-processing outsourcing.

LEARNING OUTCOME 12.3.3: Explain the concept of economic base.

- Basic industries export primarily to consumers outside the settlement; they are the principal source of growth and wealth for a settlement.
- Some settlements attract a disproportionate share of talented individuals.

THINKING GEOGRAPHICALLY 12.3: Your community's economy is expanding or contracting as a result of the performance of its basic employment. Two factors can explain this performance. One is that the sector is expanding or contracting nationally. The second is that the sector is performing much better or worse in the community than in the country as a whole. Which of the two factors better explains the performance of your community's basic employment?

GOOGLE EARTH 12.3: Several hundred banks are registered in George Town, Cayman Islands, but their only presence is mailboxes in the Central Post Office. How far is the Central Post office from the nearest wharf, where wealthy people might be able to dock a yacht?



Primate city (p. 437) The largest settlement in a country, if it has more than twice as many people as the second-ranking settlement.

Primate city rule (p. 437) A pattern of settlements in a country such that the largest settlement has more than twice as many people as the second-ranking settlement.

Public services (p. 432) Services offered by the government to provide security and protection for citizens and businesses.

Range (of a service) (p. 435) The maximum distance people are willing to travel to use a service.

Rank-size rule (p. 437) A pattern of settlements in a country such that the n th largest settlement is $1/n$ the population of the largest settlement.

Service (p. 430) Any activity that fulfills a human want or need and returns money to those who provide it.

Settlement (p. 430) A permanent collection of buildings and inhabitants.

Threshold (p. 435) The minimum number of people needed to support a service.

Urbanization (p. 454) An increase in the percentage of the number of people living in urban settlements.

KEY ISSUE 4

Why Do Services Cluster in Settlements?

Services cluster in rural and urban settlements.

LEARNING OUTCOME 12.4.1: Describe the difference between clustered and dispersed rural settlements.

- A clustered rural settlement is an agricultural-based settlement in which houses are close together.
- A dispersed rural settlement has isolated individual farms.

LEARNING OUTCOME 12.4.2: Explain the types of services in early settlements.

- The earliest settlements provided consumer services, especially as places to bury and honor the dead. Early settlements were also places of education and production of tools.
- Early public services included governance and protection of dependents.

LEARNING OUTCOME 12.4.3: Identify important prehistoric, ancient, and medieval urban settlements.

- Urban settlements may have originated in Southwest Asia, or they may have originated in multiple hearths.
- Few people lived in urban settlements until modern times.

LEARNING OUTCOME 12.4.4: Explain the two dimensions of urbanization.

- Urbanization involves an increase in the percentage of people living in urban settlements. Developed countries have higher percentages of urban residents than do developing countries.
- Urbanization also involves an increase in size of settlements. Most very large settlements are in developing countries.

THINKING GEOGRAPHICALLY 12.4: Rural settlement patterns along the U.S. East Coast were influenced by migration during the Colonial era. To what extent have distinctive rural settlement patterns elsewhere in the United States resulted from international or internal migration?

GOOGLE EARTH 12.4: Fly to Ur, Iraq. Turn on 3D and drag to ground-level view. What is the only structure in 3D in the excavations?



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