

COSTAR GROUP INC  
Form 10-K  
February 28, 2019

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF  
THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2018

Commission file number 0-24531

CoStar Group, Inc.  
(Exact name of registrant as specified in its charter)

Delaware 52-2091509  
(State or other jurisdiction of incorporation or organization) (I.R.S. Employer Identification No.)

1331 L Street, NW, Washington, DC 20005  
(Address of principal executive offices) (zip code)

(202) 346-6500  
(Registrant's telephone number, including area code)

(877) 739-0486  
(Registrant's facsimile number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, \$.01 par value	NASDAQ Global Select Market

Securities registered pursuant to Section 12(g) of the Act:  
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes  No

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

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Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that registrant was required to submit such files.) Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Securities Exchange Act of 1934.

Large accelerated filer  Accelerated filer   
Non-accelerated filer  Smaller reporting company   
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes  No

Based on the closing price of the common stock on June 29, 2018 on the Nasdaq Global Select Market, the aggregate market value of registrant's common stock held by non-affiliates of the registrant as of June 29, 2018 was approximately \$15 billion.

As of February 22, 2019, there were 36,451,829 shares of the registrant's common stock outstanding.

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DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement, which is expected to be filed with the Securities and Exchange Commission within 120 days after the end of the registrant's fiscal year ended December 31, 2018, are incorporated by reference into Part III of this Report.

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## PART I

### Item 1. Business

In this report, the words “we,” “our,” “us,” “CoStar” or the “Company” refer to CoStar Group, Inc. and its direct and indirect wholly owned subsidiaries. This report also refers to our websites, but information contained on those sites is not part of this report.

CoStar Group, Inc., a Delaware corporation, founded in 1987, is the number one provider of information, analytics and online marketplaces to the commercial real estate industry in the United States (“U.S.”) and United Kingdom (“U.K.”) based on the fact that we offer the most comprehensive commercial real estate database available; have the largest research department in the industry; own and operate leading online marketplaces for commercial real estate and apartment listings in the U.S. based on the numbers of unique visitors and site visits per month; and provide more information, analytics and marketing services than any of our competitors. We created and compiled our standardized platform of information, analytics and online marketplace services where industry professionals and consumers of commercial real estate, including apartments, and the related business communities, can continuously interact and facilitate transactions by efficiently accessing and exchanging accurate and standardized real estate-related information. Our service offerings span all commercial property types, including office, retail, industrial, multifamily, commercial land, mixed-use and hospitality. We manage our business geographically in two operating segments, with our primary areas of measurement and decision-making being North America, which includes the U.S. and Canada, and International, which includes the U.K., Spain, Germany and France.

#### Strategy

Our strategy is to provide industry professionals and consumers of commercial real estate and apartments with critical knowledge to explore and complete transactions by offering the most comprehensive, timely and standardized information on commercial real estate and apartments and the right tools to be able to effectively utilize that information. Over time, we have expanded our services for commercial real estate information, analytics and online marketplaces in an effort to continue to meet the needs of the industry as it grows and evolves.

Our standardized platform includes the most comprehensive proprietary database in the industry; the largest research department in the industry; proprietary data collection, information management and quality control systems; a large in-house product development team; a broad suite of web-based information, analytics and online marketplace services; a large team of analysts and economists; and a large, diverse base of clients. Our database has been developed and enhanced for more than 30 years by a research department that makes thousands of daily database updates. In addition to our internal efforts to grow the database, we have obtained and assimilated over 100 proprietary databases. Our comprehensive commercial real estate database powers our information services, sources data used in our analytic services and provides content for most of our online marketplace services. Our ability to utilize the same commercial real estate information across our standardized platform creates efficiencies in operations and improves data quality for our customers.

We deliver our commercial real estate information content to our U.S. customers primarily via an integrated suite of online service offerings that includes information about space available for lease, comparable sales information, information about properties for sale, tenant information, Internet marketing services, analytical capabilities, information for clients’ websites, information about industry professionals and their business relationships, data integration and industry news. We also operate complementary online marketplaces for commercial real estate listings and apartment rentals. We strive to cross-sell our services to our customers in order to best suit their needs.

We have also extended our offering of comprehensive commercial real estate information geographically to include the U.K., Canada, Spain, Germany and France, through acquisitions and internal growth and development. Most recently, on October 12, 2018, we acquired Realla Ltd. ("Realla"), the operator of a commercial property listings and data management platform in the U.K., including a free-to-list search engine for commercial property listings. Information about CoStar's revenues, long-lived assets and total assets derived from and located in, foreign countries is included in Notes 2, 3 and 13 of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K. Revenues; net income (loss) before interest and other income (expense), income taxes, depreciation and amortization ("EBITDA"); and total assets and liabilities for each of our segments are set forth in Notes 3 and 13 to our consolidated financial statements. Information about risks associated with our foreign operations is included in "Item 1A. Risk Factors" and "Item 7A. Quantitative and Qualitative Disclosures about Market Risk" in this Annual Report on Form 10-K.

We have five flagship brands - CoStar®, LoopNet®, Apartments.com™, BizBuySell® and LandsofAmerica™. Our subscription-based services consist primarily of information, analytics and online marketplace services offered over the Internet

to the commercial real estate industry and related professionals. Our subscription-based information services consist primarily of CoStar Suite® services. CoStar Suite is sold as a platform of service offerings consisting of CoStar Property Professional®, CoStar COMPS Professional® and CoStar Tenant®, accessible via the Internet and through our mobile applications, CoStar Mobile App and CoStar Go. CoStar Suite is our primary service offering in our North America and International operating segments.

Our LoopNet subscription-based, online marketplace enables commercial property owners, landlords, and brokers working on their behalf to list properties for sale or for lease and to submit detailed information about property listings. Commercial real estate agents, buyers and tenants use LoopNet extensively to search for available property listings that meet their criteria.

Apartments.com™ is part of our network of apartment marketing sites, which also includes ApartmentFinder.com™, ForRent.com®, ApartmentHomeLiving.com™, WestsideRentals.com®, AFTER55.com®, CorporateHousing.com™, ForRentUniversity.com® and Apartamentos.com™, our apartment-listing site offered exclusively in Spanish. Our apartment marketing network of subscription-based services offers renters a searchable database of apartment listings and provides professional property management companies and landlords with an advertising destination. Our apartment marketing network draws on and leverages CoStar's multifamily database, which contains detailed information on apartment properties. Our apartment marketing sites are designed to meet renter preferences and demands, in order to drive traffic to those sites and attract advertisers who prefer to advertise on heavily trafficked apartment websites. Our network of apartment marketing sites provide a comprehensive selection of rentals, information on actual availabilities and rents, and in-depth data on neighborhoods, including restaurants, nightlife, history, schools and other facts important to renters. To help renters find the information that meets their needs, the sites also offer innovative search tools such as the Polygon™ Search tool, which allows renters to specifically define the area in which they want to find an apartment. Apartments.com and Apartamentos.com also offer Plan Commute tools, which allow renters to search property listings that meet their transportation needs. We completed the acquisition of ForRent, a division of Dominion Enterprises, including the ForRent.com, AFTER55.com, CorporateHousing.com and ForRentUniversity.com apartment marketing sites on February 21, 2018. We also offer complementary services to the apartment industry, including tenant screening services, rental applications and payments processing and lease renewals. On November 8, 2018, we acquired Cozy Services, Ltd. ("Cozy"), a leading provider of online rental solutions that provides a broad spectrum of services to both landlords and tenants, including property listings, rent estimates, rental applications, tenant screening, online rent payments and expense tracking.

Our BizBuySell services, which include BizQuest®, provide an online marketplace for businesses for sale. Our LandsofAmerica services, which include LandAndFarm and LandWatch®, provide an online marketplace for rural lands for sale that is also accessible via our Land.com domain.

We also provide real estate and lease management solutions, including lease administration and abstraction services, through our CoStar Real Estate Manager service offerings, as well as, market research, consulting and analysis, portfolio and debt analysis, management and reporting capabilities through our CoStar Investment Analysis and CoStar Risk Analytics service offerings. We have created and are continually improving our standardized platform of information, analytics and online marketplaces where members of the commercial real estate and related business community can continuously interact and facilitate transactions by efficiently accessing and exchanging accurate and standardized commercial real estate information.

Our services are typically distributed to our clients under subscription-based license agreements that renew automatically, a majority of which have a term of one year. Upon renewal, many of the subscription contract rates may change in accordance with contract provisions or as a result of contract renegotiations. To encourage clients to use our services regularly, we generally charge a fixed monthly amount for our subscription-based services rather than charging fees based on actual system usage or number of paid clicks. Depending on the type of service, contract rates

are generally based on the number of sites, number of users, organization size, the client's business focus, geography, the number and types of services to which a client subscribes, the number of properties a client advertises and the prominence and placement of a client's advertised properties in the search results. Our subscription clients generally pay contract fees on a monthly basis, but in some cases may pay us on a quarterly or annual basis.

## Expansion and Growth

### Acquisitions

We have continually expanded the geographical coverage of our existing information services and developed new information, analytics and online marketplace services. In addition to organic growth, we have grown our business through strategic acquisitions. On February 21, 2018, we completed the acquisition of ForRent, a division of Dominion Enterprises. ForRent's primary service is digital advertising through a network of four multifamily websites, which includes ForRent.com, AFTER55.com, CorporateHousing.com and ForRentUniversity.com. On October 12, 2018, we acquired Realla Ltd., the operator of a commercial property listings and data management platform in the U.K., including a free-to-list search engine for commercial property listings. On November 8, 2018, we acquired Cozy, a leading provider in the U.S. of online rental solutions that provides a broad spectrum



of services to both landlords and tenants, including property listings, rent estimates, rental applications, tenant screening, online rent payments, and expense tracking.

#### Development, Investments and Expansion

We are committed to supporting, improving and enhancing our information, analytics and online marketplace solutions, including expanding and improving our offerings for property managers and renters. We expect to continue our software development efforts to improve existing services, introduce new services, integrate and cross-sell services, and expand and develop supporting technologies for our research, sales and marketing organizations.

We evaluate potential changes to our service offerings from time to time in order to better align the services we offer with customers' needs. Further, in some cases, when integrating and coordinating our services and assessing industry and client needs, we may decide to combine, shift focus from, de-emphasize, phase out, or eliminate a service that, among other things, overlaps or is redundant with other services we offer. In the event that we eliminate or phase out particular service offerings, we may experience reduced revenues and earnings. The decision to eliminate or phase out a service offering may also ultimately result in increased revenues and earnings from sales of other services we offer in lieu of the eliminated or phased out services. However, we cannot predict with certainty the amount or timing of any reductions in revenues and earnings or subsequent increases in revenues and earnings, if any, resulting from the elimination or phasing out of any service offering.

In 2018, we completed the integration of ForRent, including the ForRent sales team and the services offered by ForRent and have worked to maintain ForRent's relationships with its customers that existed prior to the acquisition. ForRent.com is expected to remain a distinct, complementary brand to Apartments.com, giving property managers and owners more exposure for their listings.

We are also continuing to develop new, and improve existing, online rental property service offerings for the apartments industry. We plan to integrate the Cozy suite technology into the Apartments.com platform, creating an integrated online rental solution. In particular, we expect to implement the ability for renters to apply for leases online, for landlords to run tenant credit and background checks online and, eventually, for landlords and tenants to generate and enter into leases and to make and process payments online.

We are expanding the geographic reach of our services. We plan to integrate Realla with our CoStar UK operations, including development of a single point of data entry to allow our clients to display their commercial real estate listings through the CoStar Suite service offering and to make them visible to prospective tenants and investors through Realla's marketing portal.

We believe that our integration efforts and continued investments in our services, including expansion of our existing service offerings, have created a platform for long-term revenue growth. We expect these investments to result in further penetration of our subscription-based services and the successful cross-selling of our services to customers in existing markets.

We have invested in the expansion and development of our field sales force to support the growth and expansion of our company and our service offerings. We plan to continue to invest in, evaluate and strategically position our sales force as the Company continues to develop and grow. We also continue to invest in our research operations to support continued growth of our information and analytics offerings to meet the growing content needs of our clients. While we believe investments we make in our business create a platform for growth, those investments may reduce our profitability and adversely affect our financial position. We introduced new enhancements on the CoStar homepage, including a Listing Manager feature that we believe will increase the quantity and quality of the listing information available by enabling brokers and other industry participants to load information directly into the integrated system.

Over time, we expect this feature will reduce the time and costs associated with researching and maintaining our comprehensive database of commercial real estate information.

#### Industry Overview

The market for commercial real estate information and analysis is vast based on the variety, volume and value of transactions related to commercial real estate. Each transaction has multiple participants and multiple information requirements, and in order to facilitate transactions, industry participants must have extensive, accurate and current information and analysis. Members of the commercial real estate and related business community require daily access to current data such as space availability, properties for sale, rental units available, rental rates, vacancy rates, tenant movements, sales comparables, supply, new construction, absorption rates and other important market developments to carry out their businesses effectively. Market research (including historical and forecast conditions) and applied analytics are instrumental to the success of commercial real estate industry participants operating in the current economic environment. There is a strong need for an efficient marketplace, where commercial

real estate professionals can exchange information, evaluate opportunities using standardized data and interpretive analyses, and interact with each other on a continuous basis.

A large number of parties involved in the commercial real estate and related business community make use of the services we provide in order to obtain information they need to conduct their businesses, including:

Sales and leasing brokers	Government agencies
Property owners	Mortgage-backed security issuers
Property managers	Appraisers
Design and construction professionals	Pension fund managers
Real estate developers	Reporters
Real estate investment trust managers	Tenant vendors
Investment bankers	Building services vendors
Commercial bankers	Communications providers
Mortgage bankers	Insurance companies' managers
Mortgage brokers	Institutional advisors
Retailers	Investors and asset managers

The commercial real estate and related business community historically operated in an inefficient marketplace because of the fragmented approach to gathering and exchanging information within the marketplace. Various organizations, including hundreds of brokerage firms, directory publishers and local research companies, collected data on specific markets and developed software to analyze the information they independently gathered. This highly fragmented methodology resulted in duplication of effort in the collection and analysis of information, excessive internal cost and the creation of non-standardized data containing varying degrees of accuracy and comprehensiveness, resulting in a formidable information gap.

The creation and maintenance of a standardized information platform for commercial real estate requires infrastructure including a standardized database, accurate and comprehensive research capabilities, experienced analysts, easy to use technology and intensive participant interaction. By combining our extensive database, researchers, our experienced team of analysts and economists, technological expertise and broad customer base, we believe that we have created such a platform.

The apartment rental advertising industry serves property managers and owners who are tasked with finding renters to occupy vacant apartments and renters who are searching for their next home. Property managers have several options at their disposal, including their own websites, drive-by and outdoor advertising, traditional classified ads, free online listing services and internet listings services ("ILS"), like Apartments.com and the network of apartment listing websites we own and operate. Many apartment ILS websites feature only the rental availabilities that larger property owners pay to advertise, resulting in a poor user experience in which the renter's search criteria return either limited or no results, irrelevant results or stale results that do not represent actual availabilities.

We believe that consumers expect accurate, actionable and comprehensive apartment rental information. Our apartment ILS websites include renter-focused features like the ability to filter search results according to various criteria (e.g., commute time to work); professional images of the properties, including immersive videos and 3-D interactive models; custom neighborhood profiles; and tenant reviews. Our network of apartment listing websites draws on our multifamily database and includes researched and verified information. We proactively gather information on available rentals to improve the accuracy of the listings on our apartment ILS websites, including real time unit-level availability, current pricing, and rent specials. We have continually invested in our network to improve the features and services offered to property managers and website users. Recent additions include: dynamic lead forms that provide more information about prospective residents, a reporting suite that provides customers with rent comparables, making rent trends information publicly available and free digital ad retargeting. We believe that we

have created and maintain easily searchable apartment ILS websites with a comprehensive selection of rentals, information on actual rental availabilities and rents, and in-depth data on neighborhoods.

#### CoStar's Comprehensive Database

CoStar has spent more than 30 years building and acquiring a database of commercial real estate information, which includes information on leasing, sales, comparable sales, tenants, and demand statistics, as well as digital images. This highly complex database is comprised of hundreds of data fields, tracking such categories as location, site and zoning information, building characteristics, space and unit availability, tax assessments, ownership, sales and lease comparables, space requirements, number

of retail stores, number of listings, mortgage and deed information, for-sale and for-lease listings, income and expense histories, tenant names, lease expirations, contact information, historical trends, demographic information and retail sales per square foot. The database also includes building photographs, aerial photographs, 3D virtual apartment tours, plat maps and floor plans.

#### CoStar Research

Research Department. Our research professionals undergo an extensive training program so that we can maintain consistent research methods and processes throughout our research department. Our researchers collect and analyze commercial real estate information through phone calls, e-mails and Internet updates, in addition to field inspections, public records review, news monitoring and direct mail. We have also set up direct feeds from larger apartment sites and have put in place an automated system that compiles information sourced from the Internet in order to provide the most up-to-date information on rental availabilities.

Our researchers are responsible for maintaining the accuracy and reliability of our database information. As part of their update process, researchers develop cooperative relationships with industry professionals that allow them to gather useful information. Because of the importance commercial real estate professionals place on our data and our prominent position in the industry, many of these professionals routinely take the initiative and proactively report available space and transactions to our researchers.

CoStar's field research effort includes physical inspection of properties in order to research new availabilities, find additional property inventory, photograph properties, collect tenant information, and verify existing information. CoStar's field research effort includes creating high quality videos of interior spaces (including walk-through videos and 3D virtual tours), amenities and exterior features of properties. CoStar utilizes high-tech, field research vehicles across the U.S., Canada, the U.K., Spain and Germany. A significant majority of these vehicles are customized, energy efficient hybrid cars that are equipped with computers, Global Positioning System tracking software, high resolution digital cameras and handheld laser instruments to precisely measure buildings and geo-code and position them on digital maps. Each CoStar vehicle uses wireless technology to track and transmit field data. A typical site inspection consists of photographing the building, measuring the building, geo-coding the building, capturing "For Sale" or "For Lease" sign information, counting parking spaces, assessing property condition and construction, and gathering tenant information. Field researchers also canvass properties, collecting tenant data suite by suite. We also utilize a low-flying airplane and a fleet of drones to conduct aerial research of commercial real estate. We place researchers on the low-flying aircraft to scout additional commercial developments and take aerial photographs and videos. Our U.S. drone operators are Federal Aviation Administration certified and trained to capture aerial photographs and videos of commercial real estate. Our drone operators in the U.K. are certified and trained to Civil Aviation Authority standards with a permission for commercial operations pending.

Data and Image Providers. We license a small portion of our data and images from public record providers and third-party data sources. Licensing agreements with these entities allow us to use a variety of commercial real estate information, including property ownership, tenant information, demographic information, maps, aerial photographs and 3D virtual apartment tours of apartment communities, all of which enhance various CoStar services. These license agreements generally grant us a non-exclusive license to use the data and images in the creation and supplementation of our information, analytics and online marketplaces.

Management and Quality Control Systems. Our research processes include automated and non-automated controls to ensure the integrity of the data collection process. A large number of automated data quality tests check for potential errors, including occupancy date conflicts, available square footage greater than building area, typical floor space greater than land area and expired leases. We also monitor changes to critical fields of information to ensure all information is kept in compliance with our standard definitions and methodology. Our non-automated quality control

procedures include:

- calling our information sources on recently updated properties to re-verify information;
- performing periodic research audits and field checks to determine if we correctly canvassed buildings;
- providing training and retraining to our research professionals to ensure accurate and standardized data compilation; and
- compiling measurable performance metrics for research teams and managers for feedback on data quality.

Finally, one of the most important and effective quality control measures we rely on is feedback provided by the commercial real estate professionals using our data every day.

#### Proprietary Technology

CoStar's information technology professionals focus on developing new services and features for our customers, improving and maintaining existing services, integrating our current services, securing our comprehensive database of commercial real estate

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information and delivering research automation tools that improve the quality of our data and increase the efficiency of our research analysts.

Our information technology team is responsible for developing, improving and maintaining CoStar's information, analytics and online marketplace services. Our information technology team is also responsible for developing the infrastructure necessary to support CoStar's business processes, our comprehensive database of commercial real estate information, analytics and online marketplaces and our extensive image library. The team implements technologies and systems that introduce efficient workflows and controls designed to increase the production capacity of our research teams and improve the quality of our data. Over the years, the team has developed data collection and quality control mechanisms that we believe are unique within the commercial real estate industry. The team continues to develop and modify our enterprise information management system that integrates CoStar's sales, research, field research, customer support and accounting information. We use this system to maintain our commercial real estate research information, manage contacts with the commercial real estate community, provide research workflow automation and conduct daily automated quality assurance checks. In addition, our information technology team has also developed fraud-detection technology to detect and prevent unauthorized access to our services. To supplement the measures we take to prevent misuse of our information, we recently added state of the art adaptive authentication technology to the login process of our CoStar Suite product.

Our information technology professionals maintain the servers and network components necessary to support CoStar services and research systems. CoStar's core services are served from multiple data centers to support uninterrupted service for our customers. CoStar's services are continually monitored in an effort to ensure our customers fast and reliable access.

CoStar's comprehensive data protection policy provides for use of secure networks, strong passwords, encrypted data fields, off-site storage and other protective measures in an effort to ensure the availability and security of all core systems.

## Services

Our suite of information, analytics and online marketplaces is branded and marketed to our customers. Our services are primarily derived from a database of building-specific information and offer customers specialized tools for accessing, analyzing and using our information. Over time, we have enhanced and expect to continue to enhance our existing information, analytics and online marketplaces and we have developed and expect to continue to develop additional services that make use of our comprehensive database to meet the needs of our existing customers as well as potential new categories of customers.

Our principal information, analytics and online marketplace services, are described in the following paragraphs:

### Information and analytics

#### CoStar Suite®

CoStar Suite® is our platform of service offerings consisting of CoStar Property Professional®, CoStar COMPS Professional® and CoStar Tenant® and is accessible via the Internet and through our mobile applications, CoStar Mobile App and CoStar Go.

CoStar Property Professional® CoStar Property Professional, or "CoStar Property," is the Company's flagship service. It provides subscribers a comprehensive inventory of office, industrial, retail and multifamily properties and land in markets throughout the U.S., the U.K. and parts of Canada, including for-lease and for-sale listings, historical data,

building photographs, maps and floor plans. Commercial real estate professionals use CoStar Property to identify available space for lease, evaluate leasing and sale opportunities, value assets and position properties in the marketplace. Our clients also use CoStar Property to analyze market conditions by calculating current vacancy rates, absorption rates or average rental rates, and forecasting future trends based on user selected variables. CoStar Property provides subscribers with powerful map-based search capabilities as well as a user controlled, password protected extranet (or electronic “file cabinet”) where brokers may share space surveys and transaction-related documents online, in real time, with team members. When used together with CoStar Connect®, CoStar Property enables subscribers to share space surveys and transaction-related documents with their clients, accessed through their corporate website. CoStar Property, along with all of CoStar’s other core information, analytics and online marketplaces, is delivered to desktop, mobile and other Internet-connected devices.

CoStar COMPS Professional® CoStar COMPS Professional, or “CoStar COMPS,” provides comprehensive coverage of comparable commercial real estate sales information in the U.S., the U.K. and parts of Canada. It is the industry’s most comprehensive database of comparable sales transactions and is designed for professionals who need to research property comparables, identify market trends, expedite the appraisal process and support property valuations. CoStar COMPS offers subscribers numerous fields of property information, access to support documents (e.g., deeds of trust) for new comparables,



demographics and the ability to view for-sale properties alongside sold properties in three formats – plotted on a map, aerial image or in a table.

**CoStar Tenant®** CoStar Tenant is a detailed online business-to-business prospecting and analytical tool providing commercial real estate professionals with the most comprehensive commercial real estate-related tenant information available in the U.S., the U.K. and parts of Canada. CoStar Tenant profiles tenants occupying space in commercial buildings and provides updates on lease expirations - one of the service's key features - as well as occupancy levels, growth rates and numerous other facts. Delivering this information via the Internet allows users to target prospective clients quickly through a searchable database that identifies only those tenants meeting certain criteria.

**CoStar Lease Comps®** CoStar Lease Comps, included as part of CoStar Suite® services, provides subscribers an integrated solution that captures, manages and maintains their lease data together with data from CoStar researched lease comparables. CoStar Lease Comps also provides the ability to analyze this combined lease dataset from an aggregate analytic perspective.

**CoStar Lease Analysis®** CoStar Lease Analysis is a workflow tool that is part of CoStar Suite and allows subscribers to incorporate CoStar data with their own data to perform in-depth lease analyses. CoStar Lease Analysis can be used to produce an understandable cash flow analysis as well as key metrics about any proposed or existing lease. It combines financial modeling with CoStar's comprehensive property information, enabling the subscriber to compare lease alternatives.

**CoStar Advertising®** CoStar Advertising offers property owners and brokers a highly targeted and cost effective way to market a space for lease or a property for sale directly to CoStar subscribers looking for that type of space through interactive advertising. Our advertising model is based on varying levels of exposure, enabling the advertiser to target as narrowly or broadly as its budget permits. With the CoStar Advertising program, when the advertiser's listings appear in a results set, they receive priority positioning and are enhanced to stand out. The advertiser can also purchase exposure in additional submarkets, or the entire market area so that their ad will appear even when the listing would not be returned in a results set.

**CoStar Private Sale Network®** CoStar Private Sale Network provides clients with custom-designed and branded websites to market their listings directly to investors. CoStar Private Sale Network allows investors to customize a commercial real estate website and build and send email communications to announce listings, calls for offers and bid deadlines.

**CoStar Mobile App and CoStar Go** CoStar Mobile App is an iOS and Android application that provides CoStar subscribers mobile access to their CoStar subscription. CoStar Go is an iPad app that provides CoStar Suite subscribers a single, location-centric mobile interface that allows users to access and display comprehensive information on millions of properties and gain instant access to analytic data and demographic information from the field.

#### Information services

**CoStar Real Estate Manager®** CoStar Real Estate Manager is a real estate and asset management and lease accounting software solution designed for corporate real estate managers, company executives, financial accounting directors, business unit directors, brokers and project managers. CoStar Real Estate Manager helps users connect real estate initiatives with company strategic goals, streamline portfolio operations, automate the process for collecting and managing space requests, reduce occupancy costs with analytics that track location performance against targets and maximize location performance through proactive portfolio management. Additionally, the software is used to help companies manage their lease accounting and reporting requirements.

CoStar Risk Analytics® COMPASS CoStar Risk Analytics COMPASS is a commercial real estate risk management tool. It allows users to calculate probability of default, loss given default, expected loss and unexpected loss at various confidence levels for a loan or a portfolio. It provides direct comparisons of credit risk and refinance risk across time, market, property type and loan structure for all macroeconomic forecast (including federal stress testing / comprehensive capital analysis and review) scenarios. CoStar Risk Analytics COMPASS is used by lenders, issuers, servicers, ratings agencies and regulators to estimate required loss reserves, economic capital and regulatory capital, target lending opportunities, set pricing strategy, objectively compare/price loans, more effectively allocate capital, manage refinance risk and conduct stress testing. Clients for CoStar Risk Analytics COMPASS services or data include most of the Systemically Important Financial Institutions as well as a large number of other top-500 banks, insurance companies, hedge funds and government financial regulators.

CoStar Brokerage Applications® CoStar Brokerage Applications provides commercial real estate brokerage firms the latest tools to effectively manage and optimize business operations, marketing, and research efforts. This Enterprise Resource Planning platform allows users to manage their transactions, broker commissions, and customer information, and to track critical dates as well as employee or organization-wide results and current and prospective projects.

CoStar Investment Analysis® Request CoStar Investment Analysis Request is the first business intelligence software solution built specifically for managing commercial real estate investments. CoStar Investment Analysis Request helps users eliminate some of the difficulties of consolidating real estate investment data from disparate sources and facilitates standardization of information presentation and reporting across an organization. CoStar Investment Analysis Request also provides a platform for users to develop business intelligence and reporting capabilities.

CoStar Investment Analysis® Portfolio Maximizer CoStar Investment Analysis Portfolio Maximizer is an industry leading real estate portfolio management software solution. CoStar Investment Analysis Portfolio Maximizer allows users to model partnership structures, calculate waterfall distributions and fees, model and analyze debt obligations and create multiple “what if” scenarios for alternative investment decisions.

Online marketplaces

Multifamily

Apartments.com™ Apartments.com, part of our network of apartment marketing sites, provides a variety of ad packages and enhancements that allow property managers and owners to fully showcase their apartment community through increased exposure and interactions that allow renters to view, engage and connect with the community, including featured community listings, customized flyers and brochures, and special offer coupons.

ApartmentFinder.com™ ApartmentFinder.com, part of our network of apartment marketing sites, provides lead generation, advertising and Internet marketing solutions to property managers and owners through its main service, ApartmentFinder.com.

ForRent.com® ForRent.com, part of our network of apartment marketing sites, provides digital advertising through a network of four multifamily websites - which includes ForRent.com, AFTER55.com, CorporateHousing.com and ForRentUniversity.com

ApartmentHomeLiving.com™ ApartmentHomeLiving.com, part of our network of apartment marketing sites, provides renters with another national online apartment rentals resource that showcases apartments for rent with official prices, pictures, floor plans and detailed information on each apartment.

Apartamentos.com™ Apartamentos.com, part of our network of apartment marketing sites, provides Spanish speaking renters with a national online apartment rentals resource offered exclusively in Spanish, with the same primary features found on Apartments.com.

WestsideRentals.com® WestsideRentals.com, part of our network of apartment marketing sites, specializes in Southern California real estate rentals.

Cozy.co Cozy provides online rental solutions to both landlords and tenants, including property listings, rent estimates, rental applications, tenant screening, online rent payments, and expense tracking.

Commercial property and land

LoopNet Premium Lister® LoopNet Premium Lister is designed for commercial real estate professionals and other customers who seek the broadest possible exposure for their listings, access to leads lists, and advanced marketing and searching tools. LoopNet Premium Lister provides subscribers with the ability to market their listings to all LoopNet.com visitors, as well as numerous other features. LoopNet Premium Lister is available for a quarterly or annual subscription.

**LoopNet Power Listings** LoopNet Power Listings is designed for commercial real estate professionals and other customers who seek the broadest possible exposure for their listings, access to leads lists, and advanced marketing and searching tools. LoopNet Power Listings provides subscribers with full access to three of the industry's top commercial real estate marketplaces: LoopNet, Cityfeet and Showcase, as well as 200+ online newspaper websites including the Wall Street Journal. LoopNet Power Listings is available for a quarterly or annual subscription.

**LoopLink®** LoopLink is an online real estate marketing and database services suite that enables commercial real estate firms to showcase their available properties both on the LoopNet marketplace and on the brokerage firm's own website using hosted search software. Within LoopNet, each LoopLink listing is branded with the client's logo and is hyperlinked to the client's website. Additionally, the LoopLink service provides customizable, branded property search and results screens that can be integrated into the client's website. The LoopNet import service offers the opportunity to simplify the process of submitting listings to LoopNet

from the client's internal databases, and features advanced data matching and data integrity rules and file conversion capabilities. LoopNet charges a monthly subscription fee to commercial real estate firms for the LoopLink service. Key features of LoopLink include comprehensive reporting and listing administration tools, property mapping for geographic and feasibility analysis, thumbnail photos and expanded property descriptions in search results.

**Listing Manager™** Listing Manager is an online tool that allows users to add and manage their listings on CoStar and LoopNet, all in one place. Among other features, LoopNet users can monitor listing performance, access lead and prospect reports and upgrade exposure for listings on LoopNet.

Realla Realla is a commercial property listings and data management platform in the U.K., including a free-to-list search engine for commercial property listings.

**LandsOfAmerica™, LandAndFarm™, and LandWatch®** LandsOfAmerica.com, LandAndFarm.com, and LandWatch.com are leading online marketplaces for rural land for sale. Sellers pay a fee to list their land for sale, and interested buyers can search the respective sites' listings for free. The LandsOfAmerica.com and LandAndFarm.com websites are also accessible via our Land.com domain.

**BizBuySell® and BizQuest®** BizBuySell.com and BizQuest.com are leading online marketplaces for operating businesses for sale. Business sellers pay a fee to list their operating businesses for sale, and interested buyers can search the respective sites' listings for free. The BizBuySell and BizQuest Franchise Directories allow interested business buyers to search hundreds of franchise opportunities, and franchisors can list their availabilities in the directory on a cost per lead basis.

## Clients

We draw clients from across the commercial real estate and related business community, including commercial real estate brokers, owners, developers, landlords, property managers, financial institutions, retailers, vendors, appraisers, investment banks, government agencies and other parties involved in commercial real estate. For the years ended December 31, 2016, 2017 and 2018, no single client accounted for more than 5% of our revenues.

## Sales and Marketing

Our sales teams are primarily located in field sales offices throughout the U.S. and in offices outside of the U.S., including, among others, Canada, London, England; Madrid, Spain; and Freiburg, Germany. Our inside sales teams are primarily located in our Washington, DC office. These teams prospect for new clients and perform product and service demonstrations exclusively by telephone and over the Internet to support the direct sales force.

Our local offices typically serve as the platform for our in-market sales, customer support and field research operations for their respective regions. The sales force is responsible for selling to new prospects, training new and existing clients, providing ongoing customer support, renewing existing client contracts and identifying cross-selling opportunities. In addition, the sales force has primary front line responsibility for customer care. Our customer service and support staff is charged with ensuring high client satisfaction by providing ongoing customer support. In 2016, we formed a customer relationship team consisting of client relationship managers in the sales organization, to drive even greater usage of our products and services. The client relationship managers are responsible for training existing users, sharing market specific research with clients, ensuring accurate and timely listings and ensuring client driven product enhancement ideas are shared with our product development team.

Our sales strategy is to aggressively attract new clients, while providing ongoing incentives for existing clients to subscribe to additional products and services in order to achieve high renewal rates. We actively manage client

accounts in order to retain clients by providing frequent service demonstrations as well as company-client contact and communication. In January 2018, we launched a two-week, 30-city road show to showcase CoStar's technologies to customers and prospective users. The presentations focused on how technological change is impacting the commercial real estate industry, including presentations on tools such as 3D cameras, infrared drones and augmented reality. We place a premium on training new and existing client personnel on the use of our services so as to promote maximum client utilization and satisfaction with our services. In the fall of 2018, we launched a customer service initiative across the U.K. to ensure client satisfaction with our product and to train customers on new features and services. Our sales strategy also involves entering into multi-year, multi-market license agreements with our larger clients.

We seek to make our services essential to our clients' businesses. To encourage clients to use our services regularly, we generally charge a fixed monthly amount for our subscription-based information services rather than fees based on actual system usage. Contract rates for subscription-based services are generally based on the number of sites, number of users, organization size, the client's business focus, geography, the number and types of services to which a client subscribes, the number of properties

a client advertises and the prominence and placement of a client's advertised properties in the search results. Our subscription clients generally pay contract fees on a monthly basis, but in some cases may pay us on a quarterly or annual basis.

Our primary marketing methods include: service demonstrations; face-to-face networking; web-based marketing; direct marketing; communication via our corporate website and news services; participation in trade show and industry events; Company-sponsored events; print advertising in trade magazines and other business publications; client referrals; and CoStar Today™, LoopNews™ and other company newsletters distributed via email to our clients and prospects. In 2017, we integrated the CoStar and LoopNet databases in order to enhance CoStar information services as information tools and LoopNet marketplace services as marketing tools. This integration provides clients the ability to enter listings into our Listing Manager tool, and to subsequently update their listings in CoStar and LoopNet simultaneously. To familiarize clients with the integration and benefits of the tool, we provided video tutorials and hosted numerous webinars, in addition to web-based marketing and direct marketing efforts. In 2018, over one hundred thousand commercial real estate professionals and other users successfully made millions of updates to their listings using Listing Manager.

To generate brand awareness and site traffic for the Apartments.com network of rental websites, we utilize a multi-channel marketing campaign featuring television and radio ads, online and digital advertising impressions, social media, public relations, out-of-home and paid search marketing, all of which are reinforced with Search Engine Marketing efforts. We plan to continue to utilize these marketing methods and will continue to work to determine the optimal level of marketing investment for our services for future periods.

Web-based marketing and direct marketing are effective means for us to find prospective clients. Our web-based marketing efforts include search engine optimization, paid advertising with major search engines, social media and display advertising on commercial real estate news and business websites and mobile applications, and our direct marketing efforts include television, radio, out-of-home ads, direct mail, email and telemarketing, and, when applicable, make extensive use of our unique, proprietary database. Once we have identified a prospective client, our most effective sales method is a service demonstration. We use various forms of advertising to build brand identity and reinforce the value and benefits of our services. We also sponsor and attend local association activities and events, including industry-leading events for commercial real estate brokers, owner/investors and retail and financial services institutions, and attend and/or exhibit at industry trade shows and conferences to reinforce our relationships with our core user groups.

News has always been a valuable part of CoStar's core subscription offering. CoStar's news teams report on the latest deals and developments across our markets, keeping subscribers informed and driving higher usage in our core product. In 2018, we hired veteran journalists to guide our news efforts and expanded our team to deliver more robust coverage. We launched a daily newsletter for U.S. subscribers and delivered curated content to our largest markets. We plan to offer even more personalized information in 2019. In 2018, we also upgraded our technology to make our service more relevant for subscribers, giving us the capability to deliver specific news based on their individual preferences.

We believe the ability to customize and personalize news for the user's specific interests should make our news service even more relevant and valuable to subscribers. In addition to encouraging more engagement through logins and time on site, we believe a more robust news operation will also provide more options and formats for advertising to the commercial real estate audience.

We currently offer dozens of webinars each year aimed at helping customers learn more about the commercial real estate industry and how to use our services. The webinars are available both as live presentations and as on-demand programs hosted on our website. On a monthly basis, we issue the CoStar Commercial Repeat Sales Index ("CCRSI"),

a comprehensive set of benchmarks that investors and other market participants can use to better understand commercial real estate price movements. CCRSI is produced using our underlying data and is publicly distributed by CoStar through the news media and made available online.

Our sales and marketing efforts have focused and will continue to focus on cross-selling and marketing our services. We continue to develop and cross-sell the services offered by our Apartments.com network of rental websites and the other services we offer, including, but not limited to CoStar Suite. We will also continue to focus on identifying opportunities for customers to benefit from CoStar's Real Estate Manager offering.

#### Competition

The market for information, analytics and online marketplaces generally is competitive and rapidly changing. In the commercial real estate and apartment rentals industries, we believe the principal competitive factors affecting these services and providers are:



- quality and depth of the underlying databases;
- ease of use, flexibility and functionality of the software;
- intuitiveness and appeal of the user interface;
- timeliness of the data, including listings;
- breadth of geographic coverage and services offered;
- completeness and accuracy of content;
- client service and support;
- perception that the service offered is the industry standard;
- price;
- effectiveness of marketing and sales efforts;
- proprietary nature of methodologies, databases and technical resources;
- vendor reputation;
- brand loyalty among customers; and
- capital resources.

We compete directly and indirectly for customers with the following categories of companies:

online marketing services, websites or data exchanges targeted to commercial real estate brokers, buyers and sellers of commercial real estate properties, insurance companies, mortgage brokers and lenders, such as Reed Business Information Limited and its Estates Gazette and Radius Data Exchange products, RealMassive, officespace.com, 42floors, RealNex MarketPlace, TenantWise, www.propertyshark.com, Rofo, BuildingSearch.com, CIMLS, CompStak, Rightmove, CommercialCafe, CREXi, Truss, TotalCommercial.com and DebtX;

publishers and distributors of information, analytics and marketing services, including regional providers and national print publications, such as CBRE Economic Advisors, Marshall & Swift, Yale Robbins, REIS Network (part of the Moody's Analytics Accelerator), Real Capital Analytics, Real Capital Markets, Reonomy, The Smith Guide, Yardi Matrix, RealPage and its Axiometrics business and ReScour, Inc.;

Internet listing services featuring apartments for rent, such as ApartmentGuide.com, Rent.com, Rentals.com, Zillow Rentals, Trulia Rentals, StreetEasy, NakedApartments.com, HotPads.com, MyNewPlace.com, Zumper, PadMapper, Craigslist, ApartmentList.com, Move.com, Realtor.com, Adobo, RadPad, RentJungle and RentCafe.com;

locally controlled real estate boards, exchanges or associations sponsoring property listing services and the companies with whom they partner, such as Catylist, the National Association of Realtors, CCIM Institute, Society of Industrial and Office Realtors, the Commercial Association of Realtors Data Services and AIR CRE;

real estate portfolio management software solutions, such as Cougar Software, MRI Software, Altus, Intuit and SiteCompli;

real estate lease management and administration software solutions, such as Accruent, Tririga, Manhattan Software, Lucemex and AMT;

in-house research departments operated by commercial real estate brokers; and

public record providers.

As the market for information, analytics and online marketplaces develops, additional competitors (including companies which could have greater access to data, financial, product development, technical, analytic or marketing resources than we do) may enter the market and competition may intensify. For example, a company like Bloomberg

L.P. has the resources, and has previously announced an intention, to move into the commercial real estate information business. Further, a company like Google, which has a far-reaching web presence and substantial data aggregation capabilities, could enter the commercial real estate marketing arena. A company like Zillow, which already has a presence in residential real estate and the apartment rentals industry, could use its resources to further expand in the online apartment rentals industry creating greater competition among Internet listing services for the marketing budgets of property managers and property owners. While we believe that we have successfully differentiated ourselves from existing competitors, current or future competitors could materially harm our business.

## Proprietary Rights

To protect our proprietary rights in our methodologies, database, software, trademarks and other intellectual property, we depend upon a combination of:

- trade secret, misappropriation, unfair competition, copyright, trademark, computer fraud, database protection and other laws;
- registration of copyrights and trademarks;
- nondisclosure, noncompetition and other contractual provisions with employees and consultants;
- license agreements with customers;
- patent protection; and
- technical measures.

We seek to protect our software's source code, our database and our photography as trade secrets and under copyright law. Although copyright registration is not a prerequisite for copyright protection, we have filed for copyright registration for many of our databases, photographs, software and other materials. Under current U.S. copyright law, the arrangement and selection of data may be protected, but the actual data itself may not be. Certain U.K. database protection laws provide additional protections for our U.K. databases. We license our services under license agreements that grant our clients non-exclusive, non-transferable rights. These agreements restrict the disclosure and use of our information and prohibit the unauthorized reproduction or transfer of any of our proprietary information, methodologies or analytics.

We also attempt to protect our proprietary databases, our trade secrets and our proprietary information through confidentiality and noncompetition agreements with our employees and consultants. Our services also include technical measures designed to detect, discourage and prevent unauthorized access to and/or copying of our intellectual property. We have established an internal antipiracy team that uses fraud-detection technology to continually monitor use of our services to detect and prevent unauthorized access, and we actively prosecute individuals and firms that engage in this unlawful activity.

We maintain U.S. and international trademark registrations for CoStar's core service names and proactively file U.S. and international trademark applications covering our new and planned service names. Our federally registered trademarks include CoStar®, CoStar Property®, CoStar COMPS Professional®, CoStar Tenant®, CoStar Go, CoStar Lease Analysis®, CoStar Showcase® and LoopNet®, among many others. In the U.S., trademarks are generally valid as long as they are in use and have not been found to be generic. We consider our trademarks in the aggregate to constitute a valuable asset. In addition, we maintain a patent portfolio that protects certain of our systems and methodologies. We currently have one granted patent in the U.K., which expires in 2021, covering, among other things, certain of our field research methodologies, two patents in Canada, which expire in 2021, covering, among other things, certain features of our field research methodologies, and twelve patents in the U.S. which expire in 2020, 2021 (2 patents), 2022 (2 patents), 2025, 2032, 2036, and 2037 (4 patents), respectively, covering, among other things, certain features of our field research technology and mapping tools. We regard the rights protected by our patents as valuable to our business, but do not believe that our business is materially dependent on any single patent or on our portfolio of patents as a whole.

## Employees

As of January 31, 2019, we employed 3,705 employees. None of our employees are represented by a labor union. We have experienced no work stoppages. We believe that our employee relations are excellent. In common with many German companies, employees in our German subsidiary, Thomas Daily GmbH, have elected five fellow employees to form a Works Council, which represents our employees at the location and has certain rights to receive information

from us and engage us in discussions under applicable law.

#### Available Information

Our investor relations Internet website is <http://www.costargroup.com/investors>. The reports we file with or furnish to the Securities and Exchange Commission, including our annual report, quarterly reports and current reports, as well as amendments to those reports, are available free of charge on our Internet website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission. The Securities and Exchange Commission maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the Commission at <http://www.sec.gov>.

## Item 1A. Risk Factors

### Cautionary Statement Concerning Forward-Looking Statements

We have made forward-looking statements in this Report and make forward-looking statements in our press releases and conference calls that are subject to risks and uncertainties. Forward-looking statements include information that is not purely historic fact and include, without limitation, statements concerning our financial outlook for 2019 and beyond, our possible or assumed future results of operations generally, and other statements and information regarding assumptions about our revenues, revenue growth rates, gross margin percentage, net income, net income per share, fully diluted net income per share, EBITDA, adjusted EBITDA, non-generally accepted accounting principles (“GAAP”) net income, non-GAAP net income per share, weighted-average outstanding shares, taxable income (loss), cash flow from operating activities, available cash, operating costs, amortization expense, intangible asset recovery, capital and other expenditures, legal proceedings and claims, legal costs, effective tax rate, equity compensation charges, future taxable income, pending acquisitions, the anticipated benefits of completed or proposed acquisitions, the anticipated timing of acquisition closings, the anticipated benefits of cross-selling efforts, product development and release, planned product enhancements, sales and marketing campaigns, product integrations, elimination and de-emphasizing of services, contract renewal rate, the timing of future payments of principal under our \$750 million credit facility available to us under the amended and restated credit agreement dated October 19, 2017 (the “2017 Credit Agreement”), expectations regarding our compliance with financial and restrictive covenants in the 2017 Credit Agreement, financing plans, geographic expansion, capital structure, contractual obligations, our database, database growth, services and facilities, employee relations, future economic performance, our ability to liquidate or realize our long-term investments, management’s plans, goals and objectives for future operations and growth and markets for our stock. Sections of this Report which contain forward-looking statements include “Business,” “Risk Factors,” “Properties,” “Legal Proceedings,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” “Quantitative and Qualitative Disclosures About Market Risk,” “Controls and Procedures” and the Financial Statements and related Notes.

Our forward-looking statements are also identified by words such as “hope,” “anticipate,” “may,” “believe,” “expect,” “intend,” “will,” “should,” “plan,” “estimate,” “predict,” “continue” and “potential” or the negative of these terms or other comparable terminology. You should understand that these forward-looking statements are estimates reflecting our judgment, beliefs and expectations, not guarantees of future performance. They are subject to a number of assumptions, risks and uncertainties that could cause actual results to differ materially from those expressed or implied in the forward-looking statements. The following important factors, in addition to those discussed or referred to under the heading “Risk Factors,” and other unforeseen events or circumstances, could affect our future results and could cause those results or other outcomes to differ materially from those expressed or implied in our forward-looking statements: commercial real estate market conditions; general economic conditions, both domestic and international; our ability to identify, acquire and integrate acquisition candidates; our ability to realize the expected benefits, cost savings or other synergies from acquisitions, including ForRent, Realla and Cozy, on a timely basis or at all; our ability to combine acquired businesses successfully or in a timely and cost-efficient manner; business disruption relating to integration of acquired businesses or other business initiatives; business disruption relating to acquisitions may be greater than expected; our ability to transition acquired service platforms to our model in a timely manner or at all; changes and developments in business plans; theft of any personally identifiable information we, or the businesses that we acquire, maintain or process; any actual or perceived failure to comply with privacy or data protection laws, regulations or standards; the amount of investment for sales and marketing and our ability to realize a return on investments in sales and marketing; our ability to effectively and strategically combine, eliminate or de-emphasize service offerings; reductions in revenues as a result of service changes; the time and resources required to develop upgraded or new services and to expand service offerings; changes or consolidations within the commercial real estate industry; customer retention; our ability to attract new clients; our ability to sell additional services to existing clients; our ability to integrate our North America and International product offerings; our ability to successfully introduce

and cross-sell new products or upgraded services in U.S. and foreign markets; our ability to attract consumers to our online marketplaces; our ability to increase traffic on our network of sites; the success of our marketing campaigns in generating brand awareness and site traffic; competition; foreign currency fluctuations; global credit market conditions affecting investments; our ability to continue to expand successfully, timely and in a cost-efficient manner, including internationally; our ability to effectively penetrate and gain acceptance in new sectors and geographies; our ability to control costs; our ability to continue to develop and maintain our research operations headquarters in Richmond, Virginia as a technology innovation hub; litigation or government investigations in which we become involved; changes in accounting policies or practices; release of new and upgraded services or entry into new markets by us or our competitors; data quality; expansion, growth, development or reorganization of our sales force; employee retention; technical problems with our services; managerial execution; changes in relationships with real estate brokers, property managers and other strategic partners; legal and regulatory issues; and successful adoption of and training on our services.

Accordingly, you should not place undue reliance on forward-looking statements, which speak only as of, and are based on information available to us on, the date of this Report. All subsequent written and oral forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred

to in this section. We do not undertake any obligation to update any such statements or release publicly any revisions to these forward-looking statements to reflect new information or events or circumstances after the date of this Report or to reflect the occurrence of unanticipated events.

## Risk Factors

Our revenues and financial position will be adversely affected if we are not able to attract and retain clients. Our success and revenues depend on attracting and retaining subscribers to our information, analytics and online marketplaces. Our subscription-based information, analytics and online marketplaces generate the largest portion of our revenues. However, we may be unable to attract new clients, and our existing clients may decide not to add, not to renew or to cancel subscription services. In addition, in order to increase our revenue, we must continue to attract new customers, continue to keep our cancellation rate low and continue to sell new services to our existing customers. We may not be able to continue to grow our customer base, keep the cancellation rate for customers and services low or sell new services to existing customers as a result of several factors, including without limitation: economic pressures; the business failure of a current client or clients; a decision that customers have no need for our services; a decision to use alternative services; customers' and potential customers' pricing and budgetary constraints; consolidation in the real estate and/or financial services industries; data quality; technical problems; or competitive pressures. We compete against many other commercial real estate information, analytics, and marketing service providers for business, including competitors that offer their services through rapidly changing methods of delivering real estate information. If clients cancel services or decide not to renew their subscription agreements, and we do not sell new services to our existing clients or attract new clients, then our renewal rate, net new sales and revenues may decline or fail to meet expectations.

We may not be able to successfully introduce new or upgraded information, analytics and online marketplace services or combine or shift focus from services with less demand, which could decrease our revenues and our profitability. Our future business and financial success will depend on our ability to continue to anticipate the needs of customers and potential customers, and to successfully introduce new and upgraded services into the marketplace. To be successful, we must adapt to changes in the industry, as well as rapid technological changes by continually enhancing our information, analytics and online marketplace services. Developing new services and upgrades to services, as well as integrating and coordinating current services, imposes heavy burdens on our systems department, product development team, management and researchers. The processes are costly, and our efforts to develop, integrate and enhance our services may not be successful. As we continue to combine our operations with those that we have acquired, we must continue to assess the purposes for which various services may be used alone or together, and how we can best address those uses through stand-alone services or combinations of coordinating applications. In addition, successfully launching and selling a new or upgraded service puts additional strain on our sales and marketing resources. If we are unsuccessful in obtaining greater market share, we may not be able to offset the expenses associated with the launch and marketing of the new or upgraded service, which could have a material adverse effect on our financial results. For example, to generate brand awareness and site traffic for our Apartments.com network of rental websites, we utilize a multi-channel marketing campaign. If the marketing campaign does not continue to increase brand awareness, site traffic and/or revenues, it could have an adverse effect on our financial results.

If we are unable to develop new or upgraded services or decide to combine, shift focus from, or phase out a service, then our customers may choose a competitive service over ours and our revenues may decline and our profitability may be reduced. If we incur significant costs in developing new or upgraded services or combining and coordinating existing services, if we are not successful in marketing and selling these new services or upgrades, or if our customers fail to accept these new or combined and coordinating services, then there could be a material adverse effect on our results of operations due to a decrease of our revenues and a reduction of our profitability. In addition, as we integrate acquired businesses, we continue to assess which services we believe will best meet the needs of our customers. If we eliminate or phase out a service and are not able to offer and successfully market and sell an alternative service, our

revenue may decrease, which could have a material adverse effect on our results of operations.

A downturn or consolidation in the commercial real estate industry may decrease customer demand for our services. The commercial real estate market may be adversely impacted by many different factors, including lower than expected job growth or job losses resulting in reduced real estate demand; rising interest rates and slowing transaction volumes that negatively impact investment returns; excessive speculative new construction in localized markets resulting in increased vacancy rates and diminished rent growth; and unanticipated disasters and other adverse events such as slowing of the growth in the working age population resulting in reduced demand for all types of real estate. A reversal of improvements in the commercial real estate industry's leasing activity and absorption rates or a downturn in the commercial real estate market may affect our ability to generate revenues and may lead to more cancellations by our current or future customers, either of which could cause our revenues or our revenue growth rate to decline and reduce our profitability. A depressed commercial real estate market has a negative impact on our core customer base, which could decrease demand for our information, analytics and online marketplaces. Also, companies in this industry may consolidate, often in order to reduce expenses. Consolidation, or other cost-cutting measures by our customers, may lead to



cancellations of our information, analytics and online marketplace services by our customers, reduce the number of our existing clients, reduce the size of our target market or increase our clients' bargaining power, all of which could cause our revenues to decline and reduce our profitability. If cancellations, reductions of services, and failures to pay increase, and we are unable to offset the resulting decrease in revenues by increasing sales to new or existing customers, our revenues may decline or grow at lower rates.

Negative general economic conditions could increase our expenses and reduce our revenues. Our business and the commercial real estate industry are particularly affected by negative trends in the general economy. The success of our business depends on a number of factors relating to general global, national, regional and local economic conditions, including perceived and actual economic conditions, recessions, inflation, deflation, exchange rates, interest rates, taxation policies, availability of credit, employment levels, and wage and salary levels. Negative general economic conditions could adversely affect our business by reducing our revenues and profitability. If we experience greater cancellations or reductions of services and failures to timely pay, and we do not acquire new clients or sell new services to our existing clients, our revenues may decline and our financial position would be adversely affected. Adverse national and global economic events, as well as any significant terrorist attack, are likely to have a dampening effect on the economy in general, which could negatively affect our financial performance and our stock price. Further actions or inactions of the U.S. or other major national governments, including "Brexit", may also impact economic conditions, which could result in financial market disruptions or an economic downturn. Market disruptions may also contribute to extreme price and volume fluctuations in the stock market that may affect our stock price for reasons unrelated to our operating performance. In addition, a significant increase in inflation could increase our expenses more rapidly than expected, the effect of which may not be offset by corresponding increases in revenue. Conversely, deflation resulting in a decline of prices could reduce our revenues. In the current economic environment, it is difficult to predict whether we will experience significant inflation or deflation in the near future. A significant increase in either could have an adverse effect on our results of operations. See the risk factor below titled "The economic effects of "Brexit" may affect relationships with existing and future customers and could have an adverse impact on our business and operating results" for further discussion of risks related to Brexit.

If we are unable to hire qualified persons for, or retain and continue to develop, our sales force, or if our sales force is unproductive, our revenues could be adversely affected. In order to support revenues and future revenue growth, we need to continue to develop, train and retain our sales force. Our ability to build and develop a strong sales force may be affected by a number of factors, including: our ability to attract, integrate and motivate sales personnel; our ability to effectively train our sales force; the ability of our sales force to sell an increased number and different types of services; our ability to manage effectively an outbound telesales group; the length of time it takes new sales personnel to become productive; the competition we face from other companies in hiring and retaining sales personnel; our ability to effectively structure our sales force; and our ability to effectively manage a multi-location sales organization, including field sales personnel. If we are unable to hire qualified sales personnel and develop and retain the members of our sales force, including sales force management, or if our sales force is unproductive, our revenues or growth rate could decline and our expenses could increase.

We may not be able to compete successfully against existing or future competitors in attracting advertisers, which could harm our business, results of operations and financial condition. We compete to attract advertisers. Our competition for advertisers may have significant brand recognition as well as greater numbers of direct sales personnel than we have and may generate more web traffic than we do, which may provide a competitive advantage. To compete successfully for advertisers against future and existing competitors, we must continue to invest resources in developing our advertising platform and proving the effectiveness and relevance of our advertising services. Pressure from competitors seeking to acquire a greater share of our advertisers' overall marketing budget could adversely affect our pricing and margins, lower our revenue, and increase our research and development and marketing expenses. If we are unable to compete successfully against our existing or future competitors, our business, results of operations or financial condition could be adversely affected.

We may be unable to increase awareness of our brands, including CoStar, LoopNet, Apartments.com, BizBuySell and LandsOfAmerica, which could adversely affect our business. We rely heavily on our brands, which we believe are key assets of our company. Awareness and differentiation of our brands are important for attracting and expanding the number of users of, and subscribers to, our online marketplaces, such as LoopNet, the Apartments.com network of rental websites, CoStar Showcase, and the Land.com network of rural lands for sale. We expect to continue to invest in sales and marketing as we seek to grow the numbers of subscribers to, and advertisers on, our marketplaces. Our methods of advertising may not be successful in increasing brand awareness or, ultimately, be cost-effective. If we are unable to maintain or enhance user and advertiser awareness of our brands, or if we are unable to recover our marketing and advertising costs through increased usage of our services and increased advertising on our websites, our business, results of operations and financial condition could be adversely affected.

We rely on Internet search engines to drive traffic to our websites. If search results do not feature our websites prominently, traffic to our websites would decrease and our business could be adversely affected. Google, Bing, Yahoo! and other Internet search websites drive traffic to our websites, including CoStar.com, the Apartments.com network of rental websites, LoopNet.com,

BizBuySell.com and the Land.com network of land for sale websites. For example, when a user types an apartment building address into an Internet search engine, organic search ranking of our Apartments.com webpages will determine how prominently such webpages are displayed in the search results. However, our ability to maintain high organic search result rankings is not entirely within our control. Our competitors' search engine optimization, or SEO, efforts may result in their websites receiving a higher search result page ranking than the rankings our websites receive, or Internet search engines could revise their methodologies in a way that would adversely affect our search result rankings, each of which could slow the growth of our user base. Further, search engine providers could align with our competitors, which could adversely affect traffic to our websites. Our websites have experienced fluctuations in search result rankings in the past, and we anticipate similar fluctuations in the future. If we experience a material reduction in the number of users directed to our websites through Internet search engines, our business, results of operations and financial condition could be adversely affected.

If we are unable to maintain or increase traffic to our marketplaces, our business and operating results could be adversely affected. Our ability to generate revenues from our marketplace businesses depends, in part, on our ability to attract users to our websites. If we fail to maintain or increase traffic to our marketplaces, our ability to acquire additional subscribers or advertisers and deliver leads to and retain existing subscribers and advertisers could be adversely affected. Our marketing expenses may increase in connection with our efforts to maintain or increase traffic to our websites. Our efforts to maintain or generate additional traffic to our marketplaces may not be successful. Even if we are able to attract additional users, increases in our operating expenses could negatively impact our operating results if we are unable to generate more revenues through increased sales of subscriptions to our marketplace products. We face competition to attract users to our marketplace websites. Our existing and potential competitors include companies that could devote greater technical and other resources than we have available to provide services that users might view as superior to our offerings. Any of our future or existing competitors may introduce different solutions that attract users away from our services or provide solutions similar to our own that have the advantage of better branding or marketing resources. If we are unable to increase traffic to our marketplaces, or if we are unable to generate enough additional revenues to offset increases in expenses related to increasing traffic to our marketplaces, our business and operating results could be adversely affected.

If real estate professionals or other advertisers reduce or cancel their advertising spending with us and we are unable to attract new advertisers, our operating results would be harmed. Our marketplace businesses, including LoopNet, the Apartments.com network of rental websites, CoStar Showcase, and the Land.com network of rural lands for sale, depend on advertising revenues generated primarily through sales to persons in the real estate industry, including property managers and owners and other advertisers. Our ability to attract and retain advertisers, and ultimately to generate advertising revenue, depends on a number of factors, including:

- increasing the number of unique visitors to, and users of, our websites and mobile applications;
- the quantity and quality of the leads that we provide to our advertisers;
- the success of any marketing and product development efforts directed at attracting additional users and advertisers to our marketplaces;
- keeping pace with changes in technology and with our competitors; and
- offering an attractive return on investment to our advertisers for their advertising dollars spent with us.

Further, with respect to the Apartments.com network of rental websites, our ability to attract and retain advertisers also depends on the current apartment rental market and apartment vacancy rates. If vacancy rates are too high or too low, advertisers may not need to utilize our marketplace services.

Many of the advertisers who advertise on our marketplaces do not have long-term contracts. These advertisers could choose to modify or discontinue their relationships with us with little or no advance notice. In addition, as existing subscriptions for advertising expire, we may not be successful in renewing these subscriptions or securing new

subscriptions. We may not succeed in retaining existing advertisers' spending or capturing a greater share of such spending if we are unable to convince advertisers of the effectiveness of our services as compared to alternatives. In addition, future changes to our pricing methodology for advertising services may cause advertisers to reduce or discontinue their advertising with us. If current advertisers reduce or end their advertising spending with us and we are unable to attract new advertisers, our advertising revenues and business, results of operations and financial condition could be adversely affected.

If we do not invest in product development and provide services that are attractive to our users and to our advertisers, our business could be adversely affected. Our success depends on our continued improvements to provide services that make our marketplaces useful for users and attractive to our advertisers. As a result, we must continually invest resources in research and development to improve the appeal and comprehensiveness of our services and effectively incorporate new technologies. If we are unable to provide services that users want to use, then users may become dissatisfied and use competitors' websites. If we are

unable to continue offering innovative services, we may be unable to attract additional users and advertisers or retain our current users and advertisers, which could harm our business, results of operations and financial condition.

If we are not able to successfully identify, finance, integrate and/or manage costs related to acquisitions, our business operations and financial position could be adversely affected. We have expanded our markets and services in part through acquisitions of complementary businesses, services, databases and technologies, and expect to continue to do so in the future. Our strategy to acquire complementary companies or assets depends on our ability to identify, and the availability of, suitable acquisition candidates. We may incur costs in connection with an acquisition, but may ultimately be unable or unwilling to consummate the proposed transaction for various reasons. In addition, acquisitions involve numerous risks, including the ability to realize or capitalize on synergies created through combinations; managing the integration of personnel and products or services; managing the integration of acquired infrastructure and controls; potential increases in operating costs; managing geographically remote operations; the diversion of management's attention from other business concerns and potential disruptions in ongoing operations during integration; the inherent risks in entering markets and sectors in which we have either limited or no direct experience; and the potential loss of key employees, clients or vendors and other business partners of the acquired companies. We may not successfully integrate acquired businesses or assets and may not achieve anticipated benefits of an acquisition, including expected synergies. For example, we may be unable to fully integrate Cozy technology into the Apartments.com platform when and as expected or fully utilize and realize the benefits of Realla's expertise in capturing listings data to facilitate our expansion strategy in other European markets.

We have incurred severance costs and expect to incur additional costs to integrate prior acquisitions, such as IT integration expenses and costs related to the renegotiation of redundant vendor agreements. Costs in connection with acquisitions and integrations may be higher than expected, and we may also incur unanticipated acquisition-related costs. These costs could adversely affect our financial condition, results of operation or prospects of the combined business.

External factors, such as compliance with laws and regulations, and shifting market preferences, may also impact the successful integration of an acquired business. An acquired business could strain our system of internal controls and diminish its effectiveness. Acquisitions could result in dilutive issuances of equity securities, the incurrence of debt, one-time write-offs of goodwill and substantial amortization expenses of other intangible assets. We may be unable to obtain financing on favorable terms, or at all, if necessary to finance future acquisitions, making it impossible or more costly to complete future acquisitions. If we are able to obtain financing, the terms may be onerous and restrict our operations. Further, certain acquisitions may be subject to regulatory approval, which can be time consuming and costly to obtain or may be denied, and if obtained, the terms of such regulatory approvals may impose limitations on our ongoing operations or require us to divest assets or lines of business.

Our actual or perceived failure to comply with privacy laws and standards could adversely affect our business, financial condition and results of operations. We depend on information technology networks and systems to process, transmit and store electronic information and to communicate between our locations around the world and with our clients and vendors. We collect, use and disclose personally identifiable information, including among other things names, addresses, phone numbers and email addresses. We collect, store and use biometric data and sensitive or confidential transaction and account information. In addition, we collect personal information from tenants and landlords, including social security numbers, state or federal issued identification numbers, dates of birth, financial information and documents, employment information, background checks and credit scores, to facilitate the apartment rental application process between a renter and property manager. As a result, we are subject to a variety of state, national, and international laws and regulations that apply to the collection, use, retention, protection, disclosure, transfer and other processing of personal data, including the Fair Credit Reporting Act. Laws and regulations related to privacy and data protection are evolving, with new or modified laws and regulations proposed and implemented frequently and existing laws and regulations subject to new or different interpretations. For example, in 2016, the EU

formally adopted the General Data Protection Regulation, or GDPR, which was implemented in all EU member states effective May 25, 2018 and replaced the EU Data Protection Directive. The GDPR introduced new data protection requirements in the EU and imposes substantial fines for breaches of the data protection rules. The GDPR increased our responsibility and liability in relation to personal data that we process. We continue to assess our compliance with GDPR in light of guidance from data protection authorities, evolving best practices and evolving regulations and we may need to put in place additional mechanisms to ensure compliance with the new EU data protection rules. Any failure to comply with the rules arising from the EU Data Protection Directive, the GDPR, and related national laws of EU member states, could lead to government enforcement actions and significant penalties against us, and could adversely affect our business, financial condition, cash flows and results of operations. Compliance with any of the foregoing laws and regulations can be costly and can delay or impede the development of new products. We may incur substantial fines if we violate any laws or regulations relating to the collection or use of personal information.

Our actual or alleged failure to comply with applicable privacy or data security laws, regulations and policies, or to protect personal data, could result in enforcement actions and significant penalties against us, which could result in negative publicity,

increase our operating costs, subject us to claims or other remedies and have a material adverse effect on our business, financial condition and results of operations.

Because the interpretation and application of many privacy and data protection laws are uncertain, it is possible that these laws may be interpreted and applied in a manner that is inconsistent with our existing data management practices or the features of our products. If so, in addition to the possibility of fines, lawsuits and other claims and penalties, we could be required to fundamentally change our business activities and practices or modify our products, which could harm our business.

We expect that there will continue to be new proposed laws, regulations and industry standards concerning privacy, data protection and information security in the United States and other jurisdictions, and we cannot determine the impact such future laws, regulations and standards may have on our business. Our policies concerning the collection, use and disclosure of personally identifiable information are described on our websites. While we believe that our policies are appropriate and that we are in compliance with our policies, we could be subject to legal claims, government action, harm to our reputation or incur significant remediation costs if we experience a security breach or our practices fail, or are seen as failing, to comply with our policies or with applicable laws concerning personally identifiable information.

Concern regarding our use of the personal information collected on our websites or collected when performing our services could keep prospective customers from subscribing to our services. Industry-wide incidents or incidents with respect to our websites, including misappropriation of third-party information, security breaches or changes in industry standards, regulations or laws, could deter people from using the Internet or our websites to conduct transactions that involve the transmission of confidential information, which could harm our business.

Cyberattacks and security vulnerabilities could result in serious harm to our reputation, business, and financial condition. As stated above, our business involves the collection, storage, processing and transmission of customers' personal data. We also collect, store and process employee personal data. An increasing number of organizations, including large merchants, businesses, technology companies and financial institutions, as well as government institutions, have disclosed breaches of their information security systems, some of which have involved sophisticated and highly targeted attacks, including on their websites, mobile applications, and infrastructure.

The techniques used to obtain unauthorized, improper or illegal access to a target's systems, data or customers' data, disable or degrade services, or sabotage systems are constantly evolving and have become increasingly complex and sophisticated, may be difficult to detect quickly and often are not recognized or detected until after they have been launched against a target. We expect that unauthorized parties will continue to attempt to gain access to our systems or facilities through various means, including hacking into our systems or facilities or those of our customers or vendors, or attempting to fraudulently induce (for example, through spear phishing attacks or social engineering) our employees, customers, vendors or other users of our systems into disclosing user names, passwords, or other sensitive information, which may in turn be used to access our information technology systems. Numerous and evolving cybersecurity threats, including advanced and persisting cyberattacks, phishing and social engineering schemes, could compromise the confidentiality, availability, and integrity of the data in our systems. Our cybersecurity programs and efforts to protect our systems and data, and to prevent, detect and respond to data security incidents, may not prevent these threats or provide security. Further, the security measures and procedures our customers, vendors and other users of our systems have in place to protect sensitive consumer data and other information may not be successful or sufficient to counter all data breaches, cyberattacks or system failures.

Our information technology and infrastructure may be vulnerable to cyberattacks or security breaches, and third parties may be able to access our customers' or employees' personal or proprietary information that is stored on or accessible through those systems. We have experienced from time to time, and may experience in the future, breaches

of our security measures due to human error, malfeasance, system errors or vulnerabilities or other irregularities. Actual or perceived breaches of our security could, among other things:

- interrupt our operations,
- result in our systems or services being unavailable,
- result in improper disclosures of data,
- materially harm our reputation and brands,
- result in significant regulatory scrutiny and legal and financial exposure,
- cause us to incur significant remediation costs,
- lead to loss of customer confidence in, or decreased use of, our products and services,
- divert the attention of management from the operation of our business,
- result in significant contractual penalties or other payments as a result of third party losses or claims, and
- adversely affect our business and result of operations.



In addition, any cyberattacks or data security breaches affecting companies that we acquire or our customers or vendors (including data center and cloud computing providers) could have similar negative effects on our business. The coverage under our insurance policies may not be adequate to reimburse us for losses caused by security breaches.

We are subject to a number of risks related to acceptance of credit cards and debit cards for customer payments. We accept payments for our services through credit and debit card transactions. For credit and debit card payments, we pay interchange and other fees, which may increase over time. An increase in those fees may require us to increase the prices we charge and would increase our cost of revenues, either of which could harm our business, financial condition or results of operations.

We depend on processing vendors to complete credit and debit card transactions. If we or our processing vendors fail to maintain adequate systems for the authorization and processing of credit card transactions, it could cause one or more of the major credit card companies to disallow our continued use of their payment products. We could lose customers if we are not able to continue to use payment products of the major credit card companies. In addition, if the systems for the authorization and processing of credit card transactions fail to work properly and, as a result, we do not charge our customers' credit cards on a timely basis or at all, our business, revenue, results of operations and financial condition could be harmed.

We are also subject to payment card association operating rules, certification requirements and rules governing electronic funds transfers, which could change or be reinterpreted in ways that make it more difficult for us to comply. We are required to comply with payment card industry security standards. Failing to comply with those standards may violate payment card association operating rules, federal and state laws and regulations, and the terms of our contracts with payment processors. Any failure to comply also may subject us to fines, penalties, damages and civil liability, and may result in the loss of our ability to accept credit and debit card payments. Further, there is no guarantee that such compliance will prevent illegal or improper use of our payment systems or the theft, loss, or misuse of data pertaining to credit and debit cards, cardholders and transactions. If we fail to adequately control fraudulent credit card transactions, we may face civil liability, diminished public perception of our security measures and significantly higher credit card-related costs, each of which could harm our business, results of operations and financial condition.

If we are unable to maintain our chargeback rate or refund rates at acceptable levels, our processing vendors may increase our transaction fees or terminate their relationships with us. Any increases in our credit and debit card fees could harm our results of operations, particularly if we elect not to raise our rates for our services to offset the increase. The termination of our ability to process payments on any major credit or debit card would significantly impair our ability to operate our business.

Technical problems or disruptions that affect either our customers' ability to access our services, or the software, internal applications, database and network systems underlying our services, could damage our reputation and brands and lead to reduced demand for our information, analytics and online marketplace services, lower revenues and increased costs. Our business, brands and reputation depend upon the satisfactory performance, reliability and availability of our websites, the Internet and our service providers. Interruptions in these systems, whether due to system failures, computer viruses, software errors, physical or electronic break-ins, or malicious hacks or attacks on our systems (such as denial of service attacks), could affect the security and availability of our services on our mobile applications and our websites and prevent or inhibit the ability of users to access our services. Our operations also depend on our ability to protect our databases, computers and software, telecommunications equipment and facilities against damage from potential dangers such as fire, flood, power loss, security breaches, computer viruses, telecommunications failures, terrorist attacks, acts of war, electronic and physical break-ins, computer viruses, earthquakes and similar events. Our users rely on our services when conducting their own businesses. Disruptions in,

or reductions in ability to access, our services for whatever reason could damage our users' businesses, harm our reputation, result in additional costs or result in reduced demand for our information, analytics and online marketplace services, any of which could harm our business, results of operations and financial condition.

In addition, the software, internal applications and systems underlying our services are complex and may not be error-free. Our careful development and testing may not be sufficient to ensure that we will not encounter technical problems when we attempt to enhance our software, internal applications and systems. Any inefficiencies, errors or technical problems with our software, internal applications and systems could reduce the quality of our services or interfere with our customers' access to our information, analytics and online marketplaces, which could reduce the demand for our services, lower our revenues and increase our costs.

The majority of the communications, network and computer hardware used to operate our mobile applications and websites are located at facilities in Virginia and California. We do not own or control the operation of certain of these facilities. Our systems and operations are vulnerable to damage or interruption from fire, flood, power loss, security breaches, computer viruses, telecommunications failure, terrorist attacks, acts of war, electronic and physical break-ins, earthquakes and similar events. These risks may be increased with respect to operations housed at facilities we do not own or control. The occurrence of any of the

foregoing events could result in damage to our systems and hardware or could cause them to fail completely, and our insurance may not cover such events or may be insufficient to compensate us for losses that may occur.

A failure of our systems at any site could result in reduced functionality for our users, and a total failure of our systems could cause our mobile applications or websites to be inaccessible. Problems faced or caused by our information technology service providers, including content distribution service providers, private network providers, Internet providers and third-party web-hosting providers, or with the systems by which they allocate capacity among their customers (as applicable), could adversely affect the experience of our users. Any financial difficulties, such as bankruptcy reorganization, faced by these third-party service providers or any of the service providers with whom they contract may have negative effects on our business, the nature and extent of which are difficult to predict. If our third-party service providers are unable to keep up with our growing needs for capacity, our business could be harmed. In addition, if distribution channels for our mobile applications experience disruptions, such disruptions could adversely affect the ability of users and potential users to access or update our mobile applications, which could harm our business.

Our business interruption insurance may not cover certain events or may be insufficient to compensate us for the potentially significant losses, including the potential harm to the future growth of our business, which may result from interruptions in our service as a result of system failures or malicious attacks. Any errors, defects, disruptions or other performance problems with our services could harm our reputation, business, results of operations and financial condition.

If we are not able to obtain and maintain accurate, comprehensive or reliable data, we could experience reduced demand for our information, analytics and online marketplace services. Our success depends on our clients' confidence in the comprehensiveness, accuracy and reliability of the data and analysis we provide. The task of establishing and maintaining accurate and reliable data and analysis is challenging. If our data, including the data we obtain from third parties or directly from brokers through the Listing Manager feature on CoStar, or analysis is not current, accurate, comprehensive or reliable, we could experience reduced demand for our services or legal claims by our customers, which could result in lower revenues and higher expenses.

Market volatility may have an adverse effect on our stock price. The trading price of our common stock has fluctuated widely in the past, and we expect that it will continue to fluctuate in the future. The price could fluctuate widely based on numerous factors, including: economic factors or conditions; quarter-to-quarter variations in our operating results; changes in analysts' estimates of our earnings; announcements by us or our competitors of technological innovations, new services, or other significant or strategic information; general conditions in the commercial real estate industry; general conditions of local, national or global economies; developments or disputes concerning copyrights or proprietary rights or other legal proceedings; and regulatory developments. In addition, the stock market in general, and the shares of Internet-related and other technology companies in particular, have historically experienced extreme price fluctuations. This volatility has had a substantial effect on the market prices of securities issued by many companies for reasons unrelated to the operating performance of the specific companies and may have the same effect on the market price of our common stock.

Competition could render our services uncompetitive and reduce our profitability. The markets for information systems and services and for online marketplaces in general is highly competitive and rapidly changing. Competition in these markets may increase further if economic conditions or other circumstances cause customer bases and customer spending to decrease and service providers to compete for fewer customer resources. Our existing competitors, or future competitors, may have greater name recognition, larger customer bases, better technology or data, lower prices, easier access to data, greater user traffic or greater financial, technical or marketing resources than we have. Our competitors may be able to undertake more effective marketing campaigns, obtain more data, adopt more aggressive pricing policies, make more attractive offers to potential employees, subscribers, advertisers,

distribution partners and content providers or may be able to respond more quickly to new or emerging technologies or changes in user requirements. If we are unable to retain customers or obtain new customers, our revenues could decline. Increased competition could result in lower revenues and higher expenses, which would reduce our profitability.

Our focus on internal and external investments may place downward pressure on our operating margins. We continue to invest in our business, including internal investments in product development to expand the breadth and depth of services we provide to our customers and investments in sales and marketing to generate brand awareness. Our investment strategy is intended to increase our revenue growth in the future. Our operating margins may experience downward pressure in the short term as a result of investments. Furthermore, our investments may not have their intended effect or produce the expected results. In addition, our external investments may lose value and we may incur impairment charges with respect to such investments. Such impairment charges may negatively impact our profitability. If we are unable to successfully execute our investment strategy or if we fail to adequately anticipate and address potential problems, we may experience decreases in our revenues and operating margins.

If we are unable to enforce or defend our ownership and use of intellectual property, our business, brands, competitive position and operating results could be harmed. The success of our business depends in large part on our intellectual property, including

intellectual property involved in our methodologies, database, services and software. We rely on a combination of trademark, trade secret, patent, copyright and other laws, nondisclosure and noncompetition provisions, license agreements and other contractual provisions and technical measures to protect our intellectual property rights. However, current law may not provide for adequate protection of our databases and the actual data. In addition, legal standards relating to the validity, enforceability and scope of protection of proprietary rights in Internet-related businesses are uncertain and evolving, and changes in these standards may adversely impact the viability or value of our proprietary rights. If we are not successful in protecting our intellectual property, including our content, our brands and our business, results of operations and financial condition could be harmed. The same would be true if a court found that our services infringe other persons' intellectual property rights. Any intellectual property lawsuits or threatened lawsuits in which we are involved, either as a plaintiff or as a defendant, could cost us a significant amount of time and money and distract management's attention from operating our business. In addition, if we do not prevail on an intellectual property claim, this could result in a change to our methodology or information, analytics and online marketplace services and could reduce our profitability.

Effective trademark, trade secret, patent, and copyright protection may not be available in every country in which our services may be provided. The laws of certain countries do not protect proprietary rights to the same extent as the laws of the United States and, therefore, in certain jurisdictions, we may be unable to protect our intellectual property and our proprietary technology adequately against unauthorized third-party copying or use, which could harm our competitive position.

We seek to enforce our rights against people and entities that infringe our intellectual property, including through legal action. Taking such action may be costly, and we cannot ensure that such actions will be successful. Any increase in the unauthorized use of our intellectual property could make it more expensive for us to do business and harm our results of operations or financial condition.

We may not be able to successfully halt the operation of websites that aggregate our data, as well as data from other companies, such as copycat websites that may misappropriate our data. Third parties may misappropriate our data through website scraping, robots or other means and aggregate this data on their websites with data from other companies. In addition, "copycat" websites may misappropriate data on our website and attempt to imitate our brands or the functionality of our website. We may not be able to detect all such websites in a timely manner and, even if we could, technological and legal measures may be insufficient to stop their operations. In some cases, particularly in the case of websites operating outside of the U.S., our available remedies may not be adequate to protect us against the misappropriation of our data. Regardless of whether we can successfully enforce our rights against the operators of these websites, any measures that we may take could require us to expend significant financial or other resources.

Third party claims, litigation or government investigations to which we are subject or in which we become involved may significantly increase our expenses and adversely affect our stock price. Currently and from time to time, we are a party to various third party claims, lawsuits, or government investigations. Any lawsuits, threatened lawsuits or government investigations in which we are involved, whether as plaintiff or defendant, could cost us a significant amount of time and money, could distract management's attention away from operating our business, could result in negative publicity and could adversely affect our stock price. In addition, if any claims are determined against us or if a settlement requires us to pay a large monetary amount or take other action that materially restricts or impedes our operations, our profitability could be significantly reduced and our financial position could be adversely affected. Our insurance may not be sufficient to cover any losses we incur in connection with litigation claims.

We may be subject to legal liability for collecting, displaying or distributing information. Because the content in our database is collected from various sources and distributed to others, we may be subject to claims for breach of contract, defamation, negligence, unfair competition or copyright or trademark infringement or claims based on other theories. We could also be subject to claims based upon the content that is accessible from our website through links

to other websites or information on our website supplied by third parties. We could also be subject to claims that the collection or provision of certain information breached laws and regulations relating to privacy and data protection. Even if these claims do not result in liability to us, we could incur significant costs in investigating and defending against any claims and we could be subject to public notice requirements that may affect our reputation in the marketplace. Our potential liability for information distributed by us to others could require us to implement measures to reduce our exposure to such liability, which may require us to expend substantial resources and limit the attractiveness of our information, analytics and online marketplaces to users.

Our business depends on retaining and attracting highly capable management and operating personnel. Our success depends in large part on our ability to retain and attract management and operating personnel, including our President and Chief Executive Officer, Andrew Florance, and our other officers and key employees. Our business requires highly skilled technical, sales, management, web product and development, marketing and research personnel, who are in high demand and are often subject to competing offers. To retain and attract key personnel, we use various measures, including employment agreements, awards under

a stock incentive plan and incentive bonuses for key employees. These measures may not be enough to retain and attract the personnel we need or to offset the impact on our business of the loss of the services of Mr. Florance or other key officers or employees.

An impairment in the carrying value of goodwill could negatively impact our consolidated results of operations and net worth. Goodwill and identifiable intangible assets not subject to amortization are tested annually by each reporting unit on October 1 of each year for impairment and are tested for impairment more frequently based upon the existence of one or more indicators. We assess the impairment of long-lived assets, identifiable intangibles and goodwill whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Judgments made by management relate to the expected useful lives of long-lived assets and our ability to realize undiscounted cash flows of the carrying amounts of such assets. The accuracy of these judgments may be adversely affected by several factors, including the factors listed below:

- § Significant underperformance relative to historical or projected future operating results;
- § Significant changes in the manner of our use of acquired assets or the strategy for our overall business;
- § Significant negative industry or economic trends; or
- § Significant decline in our market capitalization relative to net book value for a sustained period.

These types of events or indicators and the resulting impairment analysis could result in goodwill impairment charges in the future, which would reduce our profitability. Impairment charges could negatively affect our financial results in the periods of such charges, which may reduce our profitability. As of December 31, 2018, we had approximately \$1.6 billion of goodwill, including \$1.6 billion in our North America operating segment and \$38 million in our International operating segment.

If we are unable to obtain or retain listings from commercial real estate brokers, agents, property owners and apartment property managers, our commercial real estate ("CRE") marketplace services, including but not limited to LoopNet, the Apartments.com network of rental websites, CoStar Showcase, LandandFarm.com and LandsofAmerica.com, could be less attractive to current or potential customers, which could reduce our revenues. The value of our CRE marketplace services to our customers depends on our ability to increase the number of property listings provided and searches conducted. The success of our CRE marketplace services depends substantially on the number of property listings submitted by brokers, agents, property owners and, in the case of apartment rentals, property managers. This is because an increase in the number of listings increases the utility of the online service and of its associated search, listing and marketing services. If agents marketing large numbers of property listings, such as large brokers in key real estate markets, choose not to continue their listings with us, or choose to list them with a competitor, our CRE marketplace services could be less attractive to other real estate industry transaction participants, resulting in reduced revenue. Similarly, the value and utility of our other marketplaces, including BizBuySell and BizQuest, are also dependent on attracting and retaining listings.

If we are unable to convince commercial real estate professionals that our CRE marketplace services are superior to traditional methods of listing, searching and marketing commercial real estate, they could choose not to use those services, which could reduce our revenues or increase our expenses. The primary source of new customers for our CRE marketplace services is participants in the commercial real estate community. Many commercial real estate professionals are accustomed to listing, searching and marketing real estate in traditional and off-line ways, such as by distributing print brochures, sharing written lists, placing signs on properties, word-of-mouth and newspaper advertisements. Commercial real estate and investment professionals may prefer to continue to use traditional methods or may be slow to adopt and accept our online products and services. If we are not able to persuade commercial real estate participants of the efficacy of our online products and services, they may choose not to use our CRE marketplace services, which could negatively impact our business. Similarly, if we are unable to convince the business and investment community to utilize our online business for sale marketplaces rather than traditional methods of

listing and marketing businesses for sale, our revenues could be negatively affected.

If we are unable to increase our revenues or our operating costs are higher than expected, our profitability may decline and our operating results may fluctuate significantly. We may not be able to accurately forecast our revenues or future revenue growth rate. Many of our expenses, particularly personnel costs and occupancy costs, are relatively fixed. As a result, we may not be able to adjust spending quickly enough to offset any unexpected increase in expenses or revenue shortfall. We may experience higher than expected operating costs, including increased personnel costs, occupancy costs, selling and marketing costs, investments in geographic expansion, acquisition costs, communications costs, travel costs, software development costs, professional fees and other costs. If operating costs exceed our expectations and cannot be adjusted accordingly, our profitability may be reduced and our results of operations and financial position will be adversely affected. Additionally, we may not be able to sustain our revenue growth rates, and our percentage revenue growth rates may decline. Our ability to increase our revenues and operating profit will depend on increased demand for our services. Our sales are affected by, among other things, general economic and commercial real estate conditions. Reduced demand, whether due to changes in customer preference, a weakening of the U.S. or global economy, competition or other reasons, may result in decreased revenues and growth, adversely affecting our operating results.



Our current or future geographic expansion plans may not result in increased revenues, which may negatively impact our business, results of operations and financial position. Expanding into new markets and investing resources towards increasing the depth of our coverage within existing markets imposes additional burdens on our research, systems development, sales, marketing and general managerial resources. If we are unable to manage our expansion efforts effectively, if our expansion efforts take longer than planned or if our costs for these efforts exceed our expectations, our financial position could be adversely affected. In addition, if we incur significant costs to improve data quality within existing markets, or are not successful in marketing and selling our services in these markets or in new markets, our expansion may have a material adverse effect on our financial position by increasing our expenses without increasing our revenues, adversely affecting our profitability.

International operations expose us to additional business risks, which may reduce our profitability. Our international operations and expansion subject us to additional business risks, including: currency exchange rate fluctuations; adapting to the differing business practices and laws in foreign countries; including differing laws regarding privacy and data protection; difficulties in managing foreign operations; limited protection for intellectual property rights in some countries; difficulty in collecting accounts receivable and longer collection periods; costs of enforcing contractual obligations; impact of recessions in economies outside the U.S.; and potentially adverse tax consequences. In addition, international expansion imposes additional burdens on our executive and administrative personnel, systems development, research and sales departments, and general managerial resources. If we are not able to manage our international operations successfully, we may incur higher expenses and our profitability may be reduced. Finally, the investment required for additional international expansion could exceed the profit generated from such expansion, which would reduce our profitability and adversely affect our financial position.

Fluctuating foreign currencies may negatively impact our business, results of operations and financial position. Due to our acquisitions of CoStar U.K. Limited (formerly FOCUS Information Limited), Property and Portfolio Research Ltd., Grecom S.A.S., Realla Ltd., the assets of Belbex Corporate, S.L., Thomas Daily, as well as our expansion into Canada, a portion of our business is denominated in the British Pound, Euro and Canadian dollar. As a result, fluctuations in foreign currencies may have an impact on our business, results of operations and financial position. Foreign currency exchange rates have fluctuated and may continue to fluctuate. Significant foreign currency exchange rate fluctuations may negatively impact our international revenue, which in turn affects our consolidated revenue. Currencies may be affected by internal factors, general economic conditions and external developments in other countries, all of which can have an adverse impact on a country's currency. Currently, we are not party to any hedging transactions intended to reduce our exposure to exchange rate fluctuations. We may seek to enter into hedging transactions in the future, but we may be unable to enter into these transactions successfully, on acceptable terms or at all. We cannot predict whether we will incur foreign exchange losses in the future. Further, significant foreign exchange fluctuations resulting in a decline in the respective local currency may decrease the value of our foreign assets, as well as decrease our revenues and earnings from our foreign subsidiaries, which would reduce our profitability and adversely affect our financial position.

The economic effects of "Brexit" may affect relationships with existing and future customers and could have an adverse impact on our business and operating results. On June 23, 2016, the U.K. held a referendum in which British citizens approved an exit from the European Union ("E.U."), commonly referred to as "Brexit." On March 29, 2017, the United Kingdom provided its official notice to the European Council that it intends to leave the European Union, commencing a period of up to two years for the U.K. and the other E.U. member states to negotiate the terms of the withdrawal. Uncertainty over the terms of the U.K.'s withdrawal from the E.U. could cause political and economic uncertainty in the U.K. and the rest of Europe, which could harm our business and financial results. In particular, Brexit could result in significant volatility in global equity markets, currency exchange rates and other asset prices, including those related to real property. The impact to us from Brexit will depend, in part, on the outcome of tariff, trade, regulatory and other negotiations, the results of which are currently uncertain. This impact may affect not only

our U.K. operations but operations in other parts of the E.U. Any transitional or permanent agreements resulting from such negotiations could potentially disrupt the markets we serve and the tax jurisdictions in which we operate.

A potential devaluation of the local currencies of our international customers relative to the U.S. dollar may impair the purchasing power of our international customers and could cause international customers to decrease or cancel orders, or terminate or fail to renew subscriptions for our services.

We translate sales and other results denominated in foreign currency into U.S. dollars for our financial statements. During periods of a strengthening U.S. dollar, our reported international sales and earnings could be reduced because foreign currencies may translate into fewer U.S. dollars. Resulting asset price volatility that could follow the withdrawal of the U.K. from the E.U. may create global economic uncertainty, which may cause our customers to closely monitor their costs and reduce their spending budgets on our products and services. In addition, Brexit could lead to legal uncertainty and potentially divergent national laws and regulations as the U.K determines which E.U. laws to replace or replicate, and those laws and regulations may be cumbersome, difficult or costly in terms of compliance. Further, Brexit may lead other E.U. member countries to consider referendums regarding

their E.U. membership. Any of these effects of Brexit, among others, could adversely affect our business, financial condition, operating results and cash flows.

Changes in laws, regulations or fiscal and tax policies or the manner of their interpretation or enforcement could adversely impact our financial performance. New laws or regulations, or changes in existing laws or regulations, or the manner of their interpretation or enforcement, could increase our cost of doing business. In particular, there may be significant changes in U.S. laws and regulations by the current U.S. presidential administration that could affect a wide variety of industries and businesses, including our business. The current U.S. presidential administration has called for substantial change to fiscal and tax policies, and recently adopted tax reform legislation. If the current U.S. presidential administration materially modifies U.S. laws and regulations or fiscal and other tax policies, our business, financial condition, and results of operations could be adversely affected.

In December 2017, the United States enacted The Tax Cuts and Jobs Act (the "Tax Act"), and various provisions of the new law may adversely affect us. Certain aspects of Tax Reform are unclear and may not be clarified for some time. During 2018, the Department of the Treasury issued certain guidance in the form of notices and proposed regulations with respect to several provisions of the new legislation. We expect that additional regulations or other guidance may be issued with respect to the Tax Act in 2019 and subsequent years. We continue to examine the impact this tax reform legislation may have on our business. In addition, if federal, state, local or foreign tax authorities change applicable tax laws or issue new guidance, including in response to the Tax Act, our overall taxes could increase, and our business, financial condition or results of operations may be adversely impacted.

Our indebtedness could adversely affect us, including by decreasing our business flexibility and increasing our costs. The 2017 Credit Agreement provides for a \$750 million revolving credit facility with a term of five years from a syndicate of financial institutions as lenders and issuing banks. The 2017 Credit Agreement contains customary restrictive covenants imposing operating and financial restrictions on us, including restrictions that may limit our ability to engage in acts that we believe may be in our long-term best interests. These covenants restrict our ability and the ability of our subsidiaries to, among other things, (i) incur additional indebtedness, (ii) create, incur, assume or permit to exist any liens, (iii) enter into mergers, consolidations or similar transactions, (iv) make investments and acquisitions, (v) make certain dispositions of assets, (vi) make dividends, distributions and prepayments of certain indebtedness and (vii) enter into certain transactions with affiliates.

The operating restrictions and financial covenants in the 2017 Credit Agreement and any future financing agreements may limit our ability to finance future operations or capital needs, to engage in other business activities or to respond to changes in market conditions. Our ability to comply with any financial covenants could be affected materially by events beyond our control, and we may be unable to satisfy any such requirements. If we fail to comply with these covenants, we may need to seek waivers or amendments of such covenants, seek alternative or additional sources of financing or reduce our expenditures. We may be unable to obtain such waivers, amendments or alternative or additional financing on a timely basis or at all, or on favorable terms.

We are required to make periodic principal and interest payments pursuant to the terms of the 2017 Credit Agreement. If an event of default occurs, the interest rate on overdue amounts will increase and the lenders under the 2017 Credit Agreement may declare all outstanding borrowings, together with accrued interest and other fees, to be immediately due and payable and may exercise remedies in respect of the collateral. We may not be able to repay all amounts due under the 2017 Credit Agreement in the event these amounts are declared due upon an event of default.

Negative conditions in the global credit markets may affect the liquidity of a portion of our long-term investments. Currently, our long-term investments include mostly AAA-rated auction rate securities ("ARS"), which are primarily student loan securities supported by guarantees from the Federal Family Education Loan Program ("FFELP") of the U.S. Department of Education. Continuing negative conditions in the global credit markets have

prevented some investors from liquidating their holdings of auction rate securities because the amount of securities submitted for sale has exceeded the amount of purchase orders for such securities. As of December 31, 2018, we held \$11 million par value of ARS, all of which failed to settle at auctions. When an auction fails for ARS in which we have invested, we may be unable to liquidate some or all of these securities at par. In the event we need or desire to immediately access these funds, we will not be able to do so until a future auction on these investments is successful, a buyer is found outside the auction process or an alternative action is determined. If a buyer is found but is unwilling to purchase the investments at par, we may incur a loss, which would reduce our profitability and adversely affect our financial position.

Our operating results and revenues are subject to fluctuations and our quarterly financial results may be subject to seasonality and market cyclicity, each of which could cause our stock price to be negatively affected. The commercial real estate market may be influenced by general economic conditions, economic cycles, annual seasonality factors and many other factors, which in turn may impact our financial results. The market is large and fragmented. The different sectors of the industry, such as office, industrial, retail, multifamily, and others, are influenced differently by different factors, and have historically moved through economic cycles with different timing. As such, it is difficult to estimate the potential impact of economic cycles and conditions

or seasonality from year-to-year on our overall operating results. In addition, our results may be impacted by seasonality. The timing of widely observed holidays and vacation periods, particularly slowdowns during the end-of-year holiday period, and availability of real estate agents and related service providers during these periods, could significantly affect our quarterly operating results during that period. If we are unable to adequately respond to economic, seasonal or cyclical conditions, our revenues, expenses and operating results may fluctuate from quarter to quarter. Our operating results, revenues and expenses may fluctuate for many reasons, including those described below and elsewhere in this Annual Report on Form 10-K:

- Rates of subscriber adoption and retention;
- Timing of our sales conference or significant marketing events;
- A slow-down during the end-of-year holiday period;
- Changes in our pricing strategy and timing of changes;
- The timing and success of new service introductions and enhancements;
- The shift of focus from, or phase out of services that overlap or are redundant with other services we offer;
- The amount and timing of our operating expenses and capital expenditures;
- Our ability to control expenses;
- The amount and timing of non-cash stock-based charges;
- Costs related to acquisitions of businesses or technologies or impairment charges associated with such investments and acquisitions;
- Competition;
- Changes or consolidation in the real estate industry;
- Our investments in geographic expansion and to increase coverage in existing markets;
- Interest rate fluctuations;
- Successful execution of our expansion and integration plans;
- The development of our sales force;
- Foreign currency and exchange rate fluctuations;
- Inflation; and
- Changes in client budgets.

These fluctuations or seasonality effects could negatively affect our results of operations during the period in question and/or future periods or cause our stock price to decline. In addition, changes in accounting policies or practices may affect our level of net income. Fluctuations in our financial results, revenues and expenses may cause the market price of our common stock to decline.

The consent order approved by the Federal Trade Commission in connection with the LoopNet merger imposes conditions that could have an adverse effect on us and our business, and failure to comply with the terms of the consent order may result in adverse consequences for the combined company. On April 26, 2012, the FTC accepted the consent order in connection with the LoopNet merger that was previously agreed to among the FTC staff, CoStar, and LoopNet on April 17, 2012. The consent order was subject to a 30-day public comment period, and on August 29, 2012, the FTC issued its final acceptance of the consent order.

The consent order, which is publicly available on the FTC's website at <http://www.ftc.gov/>, requires us to maintain certain business practices that the FTC believes are pro-competitive. For example, the consent order requires us to license our products to customers who have bought its competitors' products on a non-discriminatory basis. In addition, we are required to provide the FTC with advance written notification of certain acquisitions for which notification would not otherwise be required under the Hart-Scott-Rodino Premerger Notification Act. This provision of the consent order requiring CoStar to provide the FTC with advance written notification of certain acquisitions could prevent us from closing certain acquisitions or add significant time and cost to these potential acquisitions, ultimately making an acquisition prohibitive or preventing us from realizing anticipated benefits of an acquisition. In

the event that we fail or are unable to comply with the terms of the consent order, we could be subject to an enforcement proceeding that could result in substantial fines and/or injunctive relief.

Changes in accounting and reporting policies or practices may affect our financial results or presentation of results, which may affect our stock price. Changes in accounting and reporting policies or practices could reduce our net income, which reductions may be independent of changes in our operations. These reductions in reported net income could cause our stock price to decline.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

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Our headquarters is located at 1331 L Street, NW, in downtown Washington, DC, where we occupy approximately 157,494 square feet of office space, with a lease that expires May 31, 2025 (with two 5-year renewal options). Our headquarters is used primarily by our North America operating segment. Our principal facility in the U.K. is located in London, where we occupy 23,064 square feet of office space. Our lease for this facility has a term ending August 31, 2025. This facility is used by our International operating segment.

We also operate our research functions out of leased office spaces in Richmond, Virginia, San Diego, California and Atlanta, Georgia. Additionally, we lease office space in a variety of other metropolitan areas. These locations include, among others, the following: Austin, Texas; Boston, Massachusetts; Chicago, Illinois; Irvine, California; Los Angeles, California; and San Francisco, California.

We believe these facilities are suitable and appropriately support our business needs.

### Item 3. Legal Proceedings

Currently, and from time to time, we are involved in litigation incidental to the conduct of our business. We are not currently a party to any lawsuit or proceeding that, in the opinion of our management based on consultations with legal counsel, is likely to have a material adverse effect on our financial position or results of operations.

### Item 4. Mine Safety Disclosures

Not Applicable.

## PART II

## Item 5. Market for the Registrant's Common Stock, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our common stock is traded on the Nasdaq Global Select Market under the symbol "CSGP." As of February 1, 2019, there were 1,422 holders of record of our common stock.

**Dividend Policy.** We have never declared or paid any dividends on our common stock. We do not anticipate paying any dividends on our common stock during the foreseeable future, but intend to retain any earnings for future growth of our business.

**Recent Issues of Unregistered Securities.** We did not issue any unregistered securities during the years ended December 31, 2017 and 2018 other than as disclosed in our Current Report on Form 8-K filed with the SEC on February 21, 2018.

**Issuer Purchases of Equity Securities.** The following table is a summary of our repurchases of common stock during each of the three months in the quarter ended December 31, 2018:

## ISSUER PURCHASES OF EQUITY SECURITIES

Month, 2018	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs
October 1 through 31	397	\$412.01	—	—
November 1 through 30	—	—	—	—
December 1 through 31	1,420	348.49	—	—
Total	1,817	<sup>(1)</sup> \$362.37	—	—

<sup>(1)</sup> The number of shares purchased consists of shares of common stock tendered by employees to the Company to satisfy the employees' minimum tax withholding obligations arising as a result of vesting of restricted stock grants under the Company's 2007 Stock Incentive Plan, as amended (the "2007 Plan"), and the Company's 2016 Stock Incentive Plan, as amended, which shares were purchased by the Company based on their fair market value on the trading day immediately preceding the vesting date. None of these share purchases were part of a publicly announced program to purchase common stock of the Company.



Stock Price Performance Graph

The stock performance graph below shows how an initial investment of \$100 in our common stock would have compared to:

- An equal investment in the Standards & Poor's Stock 500 ("S&P 500") Index;  
and

• An equal investment in the S&P 500 Internet Software & Services Index.

The comparison covers the period beginning December 31, 2013, and ending on December 31, 2018, and assumes the reinvestment of any dividends. Note that this performance is historical and is not necessarily indicative of future price performance.

Company / Index	12/31/13	12/31/14	12/31/15	12/31/16	12/31/17	12/31/18
CoStar Group, Inc.	\$ 100.00	\$ 99.49	\$ 111.98	\$ 102.12	\$ 160.88	\$ 182.76
S&P 500 Index	100.00	113.69	115.26	129.05	157.22	150.33
S&P 500 Internet Software & Services Index	100.00	106.60	142.11	149.47	210.38	192.59

## Item 6. Selected Consolidated Financial and Operating Data

Selected Consolidated Financial and Operating Data  
(in thousands, except per share data)

The following table provides selected consolidated financial and other operating data for the five years ended December 31, 2018. The consolidated statements of operations data shown below for each of the three years ended December 31, 2018, 2017 and 2016 and the consolidated balance sheet data as of December 31, 2018 and 2017 are derived from audited consolidated financial statements that are included in this report. The consolidated statements of operations data for each of the years ended 2015 and 2014 and the consolidated balance sheet data as of December 31, 2016, 2015 and 2014 shown below are derived from audited consolidated financial statements for those years that are not included in this report. Information about prior period acquisitions and the adoption of recent accounting pronouncements that may affect the comparability of the selected financial information presented below are included in "Item 1. Business" and Note 2 to the Notes to the Consolidated Financial Statements included in Part IV of this Annual Report on Form 10-K. The total assets and total long-term liabilities reported in the consolidated balance sheet data have been reclassified to conform to our current presentation as a result of the retrospective application of the authoritative guidance to simplify the presentation of debt issuance costs.

The following data should be read in conjunction with "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations," "Item 8. Financial Statements and Supplementary Data," and the other information contained elsewhere in this Annual Report on Form 10-K.

Consolidated Statements of Operations Data:	Year Ended December 31,				
	2014	2015	2016	2017	2018
Revenues	\$575,936	\$711,764	\$837,630	\$965,230	\$1,191,832
Cost of revenues	156,979	188,885	173,814	220,403	269,933
Gross profit	418,957	522,879	663,816	744,827	921,899
Operating expenses	338,079	511,424	518,911	571,011	648,335
Income from operations	80,878	11,455	144,905	173,816	273,564
Interest and other income	516	537	1,773	4,044	13,281
Interest and other expense	(10,481 )	(9,411 )	(10,016 )	(9,014 )	(2,830 )
Loss on debt extinguishment	—	—	—	(3,788 )	—
Income before income taxes	70,913	2,581	136,662	165,058	284,015
Income tax expense	26,044	6,046	51,591	42,363	45,681
Net income (loss)	\$44,869	\$(3,465 )	\$85,071	\$122,695	\$238,334
Net income (loss) per share — basic	\$1.48	\$(0.11 )	\$2.64	\$3.70	\$6.61
Net income (loss) per share — diluted	\$1.46	\$(0.11 )	\$2.62	\$3.66	\$6.54
Weighted average shares outstanding — basic	30,215	31,950	32,167	33,200	36,058
Weighted average shares outstanding — diluted	30,641	31,950	32,436	33,559	36,448

Consolidated Balance Sheet Data:	As of December 31,				
	2014	2015	2016	2017	2018
Cash, cash equivalents and long-term investments	\$544,163	\$437,325	\$577,175	\$1,221,533	\$1,110,486
Working capital	480,521	337,452	472,545	1,141,269	1,059,139
Total assets	2,070,483	2,079,571	2,185,063	2,873,441	3,312,957
Total long-term liabilities	440,982	400,510	375,904	75,525	136,856
Stockholders' equity	1,513,546	1,543,780	1,654,213	2,651,250	3,021,942



## Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following Management's Discussion and Analysis of Financial Condition and Results of Operations contains "forward-looking statements," including statements about our beliefs and expectations. There are many risks and uncertainties that could cause actual results to differ materially from those discussed in the forward-looking statements. Potential factors that could cause actual results to differ materially from those discussed in any forward-looking statements include, but are not limited to, those stated above in Item 1A. under the headings "Risk Factors - Cautionary Statement Concerning Forward-Looking Statements" and "Risk Factors," as well as those described from time to time in our filings with the Securities and Exchange Commission.

All forward-looking statements are based on information available to us on the date of this filing and we assume no obligation to update such statements, whether as a result of new information, future events or otherwise. The following discussion should be read in conjunction with our Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and other filings with the Securities and Exchange Commission and the consolidated financial statements and related notes included in this Annual Report on Form 10-K.

### Overview

We are the number one provider of information, analytics and online marketplaces to the commercial real estate industry in the U.S. and the U.K. based on the fact that we offer the most comprehensive commercial real estate database available; have the largest research department in the industry; own and operate leading online marketplaces for commercial real estate and apartment listings in the U.S. based on the numbers of unique visitors and site visits per month; provide more information, analytics and marketing services than any of our competitors. We created and compiled our standardized platform of information, analytics and online marketplace services where industry professionals and consumers of commercial real estate, including apartments, and the related business communities, can continuously interact and facilitate transactions by efficiently accessing and exchanging accurate and standardized real estate-related information.

Our subscription-based services consist primarily of information, analytics and online marketplace services offered over the internet to commercial real estate industry and related professionals. Our services are typically distributed to our clients under subscription-based license agreements that renew automatically, a majority of which have a term of one year. Upon renewal, subscription contract rates may change in accordance with contract provisions or as a result of contract renegotiations. To encourage clients to use our services regularly, we generally charge a fixed monthly amount for our subscription-based services rather than charging fees based on actual system usage or number of paid clicks. Our service offerings span all commercial property types, including office, retail, industrial, multifamily, commercial land, mixed-use and hospitality. Depending on the type of service, contract rates are generally based on the number of sites, number of users, organization size, the client's business focus, geography, the number and types of services to which a client subscribes, the number of properties a client advertises and the prominence and placement of a client's advertised properties in the search results, as applicable. Our subscription clients generally pay contract fees in advance on a monthly basis, but in some cases may pay us in advance on a quarterly or annual basis.

We also provide market research, portfolio and debt analysis, management and reporting capabilities, and real estate and lease management solutions, including lease administration and abstraction services, to commercial customers, real estate investors and lenders via our other service offerings.

Our principal information, analytics and online marketplace services are described in the following paragraphs by type of service:

### Information and Analytics

CoStar Suite®. Our subscription-based information services consist primarily of CoStar Suite services. CoStar Suite is sold as a platform of service offerings consisting of CoStar Property Professional®, CoStar COMPS Professional® and CoStar Tenant® and through our mobile applications, CoStar Mobile App and CoStar Go. Our integrated suite of online service offerings includes information about space available for lease, comparable sales information, information about properties for sale, tenant information, internet marketing services, analytical capabilities, information for clients' websites, information about industry professionals and their business relationships and industry news.

Information services. We provide real estate and lease management solutions, including lease administration and abstraction services, through our CoStar Real Estate Manager service offerings, as well as, portfolio and debt analysis, management and reporting capabilities through our CoStar Investment Analysis and CoStar Risk Analytics service offerings. We also provide information services internationally, through our Grecam, Belbex and Thomas Daily businesses in France, Spain and Germany, respectively.

## Online Marketplaces

Multifamily. Apartments.com<sup>TM</sup> is part of our network of apartment marketing sites, which also includes ApartmentFinder.com<sup>TM</sup>, ForRent.com®, ApartmentHomeLiving.com<sup>TM</sup>, WestsideRentals.com®, AFTER55.com®, CorporateHousing.com<sup>TM</sup>, ForRentUniversity.com® and Apartamentos.com<sup>TM</sup>, our apartment-listing site offered exclusively in Spanish. Our apartment marketing network of subscription-based services offers renters a searchable database of apartment listings and provides professional property management companies and landlords with an advertising destination. On February 21, 2018, we completed the acquisition of ForRent, a division of Dominion Enterprises, including the ForRent.com, AFTER55.com, CorporateHousing.com and ForRentUniversity.com apartment marketing sites. We continue to integrate, develop and cross-sell the services offered by ForRent. On November 8, 2018, we acquired Cozy Services, Ltd. ("Cozy"), a leading provider of online rental solutions that provides a broad spectrum of services to both landlords and tenants, including property listings, rent estimates, rental applications, tenant screening, online rent payments and expense tracking. See Note 4 to the Notes to the Consolidated Financial Statements included in Part IV of this Annual Report on Form 10-K for further discussion of the acquisition of Cozy.

Commercial property and land. Our LoopNet subscription-based, online marketplace services enable commercial property owners, landlords and real estate agents working on their behalf to list properties for sale or for lease and to submit detailed information about property listings. Commercial real estate agents, buyers and tenants use LoopNet's online marketplace services to search for available property listings that meet their criteria. On October 12, 2018, we acquired all of the issued share capital of Realla Ltd. ("Realla"), the operator of a commercial property listings and data management platform in the U.K., including a free-to-list search engine for commercial property listings. See Note 4 to the Notes to the Consolidated Financial Statements included in Part IV of this Annual Report on Form 10-K for further discussion of the acquisition of Realla. Our BizBuySell services, which include BizQuest®, provide an online marketplace for businesses for sale. Our Land.com network of sites, which provide online marketplaces for rural lands for sale, includes LandsOfAmerica, LandAndFarm and LandWatch®

As of December 31, 2018, 2017 and 2016 our annualized net bookings of subscription-based services on all contracts were approximately \$50 million, \$43 million and \$29 million, respectively, calculated based on the annualized amount of change in our sales resulting from all new subscription-based contracts or upsales on all existing subscription-based contracts, less write downs and cancellations, for the period reported. We recognize subscription revenues on a straight-line basis over the life of the contract. Net bookings is considered a key indicator of future subscription revenue growth and is also used as a metric of salesforce productivity by management and investors.

For the years ended December 31, 2018, 2017 and 2016, our contract renewal rate for existing CoStar subscription-based services on annual contracts was approximately 90%, 91% and 90% respectively, and, therefore, our cancellation rate for those services was approximately 10%, 9%, and 10%, respectively. Our contract renewal rate is a quantitative measurement that is typically closely correlated with our revenue results. As a result, management also believes that the rate may be a reliable indicator of short-term and long-term performance. Our trailing twelve-month contract renewal rate may decline if, among other reasons, negative economic conditions lead to greater business failures and/or consolidations among our clients, reductions in customer spending, or decreases in our customer base.

## Development, Investments and Expansion

We are committed to supporting, improving and enhancing our information, news, analytics and online marketplace solutions, including expanding and improving our offerings for property managers and renters. We expect to continue our software development efforts to improve existing services, introduce new services, integrate and cross-sell

services, and expand and develop supporting technologies for our research, sales and marketing organizations. We have been, and plan to continue, integrating, further developing and cross-selling our services. To generate brand awareness and site traffic for our listing sites, we utilize a multi-channel marketing campaign, including television and radio advertising, online/digital advertising, social media and out-of-home ads, and search engine marketing. We expect to continue to invest in sales and marketing, consistent with historical levels, to promote our sites in 2019. As we continue to assess the success and effectiveness of our marketing campaign, we will continue to work to determine the optimal level of marketing investment for our services for future periods.

Our key priorities for 2019 include:

Continuing to develop new, and improve existing, online rental property service offerings for the apartments industry. We plan to utilize acquired platforms, including Cozy, along with our previously developed and newly developed technologies, to create a complete digital rental experience that enables renters to apply for leases, for landlords to run tenant credit and background checks and for landlords and tenants to generate and enter into leases and to make and process payments, all online through a single platform.

Continuing to develop and enhance CoStar Suite by making additional investments in analytical capabilities and developing products offerings with new capabilities focused on owners and lenders of commercial real estate. We also plan to invest in integrating the technology and infrastructure from other existing products into the CoStar Suite platform, including CoStar Real Estate Manager, in order to leverage data across our platforms and provide customers with additional functionality. We plan to invest further in our daily newsletter for U.S. subscribers, including providing curated content to our largest markets, and more personalized information.

Continuing to invest in the LoopNet marketplace by enhancing the content on the site, including high-quality imagery, seeking targeted advertisements and adding more content for premium listings, to better meet the needs of a broader cross section of the commercial real estate industry. Continuing to invest in our research operations to support continued growth of our information and analytics offerings. In furtherance of both of these priorities, we plan to continue to generate awareness and promote usage of Listing Manager, an online tool that allows customers with CoStar or LoopNet listings to update and manage their listings directly online. LoopNet users can also monitor listing performance, access lead and prospect reports, and upgrade exposure of their listings. We expect the use of this tool to result in more updates made directly by brokers and owners entering data directly into the self-service tool, which we believe will result in significant long-term cost savings and better quality data.

Continuing to invest in the growth of our international business. We plan to integrate Realla with our CoStar U.K. operations, including development of a single point of data entry to allow our clients to simultaneously arrange to display their commercial real estate listings through the CoStar Suite service offering and to also make them visible to prospective tenants and investors through Realla's marketing portal.

We intend to continue to assess the need for additional investments in our business, in addition to the investments discussed above, in order to develop and distribute new services and functionality within our current platform or expand the reach of our current service offerings. Any future product development or expansion of services, combination and coordination of services or elimination of services or corporate expansion, development or restructuring efforts could reduce our profitability and increase our capital expenditures. Any new investments, changes to our service offerings or other unforeseen events could cause us to experience reduced revenues or generate losses and negative cash flow from operations in the future. Any development efforts must comply with our credit facility, which contains restrictive covenants that restrict our operations and use of our cash flow and may prevent us from taking certain actions that we believe could increase our profitability or otherwise enhance our business.

For further discussion of our Company, strategy and products, see our business overview set forth in "Item 1. Business" in this Annual Report on Form 10-K.

#### Non-GAAP Financial Measures

We prepare and publicly release quarterly unaudited financial statements prepared in accordance with generally accepted accounting principles ("GAAP"). We also disclose and discuss certain non-GAAP financial measures in our public releases, investor conference calls and filings with the Securities and Exchange Commission. The non-GAAP financial measures that we may disclose include net income before interest and other income (expense), loss on debt extinguishment, income taxes, depreciation and amortization ("EBITDA"), adjusted EBITDA, adjusted EBITDA margin, non-GAAP net income and non-GAAP net income per diluted share (also referred to as "non-GAAP EPS"). EBITDA is our net income before interest and other income (expense), loss on debt extinguishment, income taxes, depreciation and amortization. We typically disclose EBITDA on a consolidated and an operating segment basis in our earnings releases, investor conference calls and filings with the Securities and Exchange Commission. Adjusted EBITDA is different from EBITDA because we further adjust EBITDA for stock-based compensation expense, acquisition- and integration-related costs, restructuring costs and settlements and impairments incurred outside our



ordinary course of business. Non-GAAP net income and non-GAAP net income per diluted share are similarly adjusted for stock-based compensation expense, acquisition- and integration-related costs, restructuring costs, settlement and impairment costs incurred outside our ordinary course of business and loss on debt extinguishment as well as amortization of acquired intangible assets and other related costs. From this figure, we then subtract an assumed provision for income taxes to arrive at non-GAAP net income. We may disclose adjusted EBITDA, adjusted EBITDA margin, non-GAAP net income and non-GAAP net income per diluted share on a consolidated basis in our earnings releases, investor conference calls and filings with the Securities and Exchange Commission. The non-GAAP financial measures that we use may not be comparable to similarly titled measures reported by other companies. Also, in the future, we may disclose different non-GAAP financial measures in order to help our investors meaningfully evaluate and compare our results of operations to our previously reported results of operations or to those of other companies in our industry.

We view EBITDA, adjusted EBITDA, non-GAAP net income and non-GAAP net income per diluted share as operating performance measures and as such we believe that the most directly comparable GAAP financial measure is net income. In calculating EBITDA, adjusted EBITDA, non-GAAP net income and non-GAAP net income per diluted share, we exclude from net income the financial items that we believe should be separately identified to provide additional analysis of the financial components of the day-to-day operation of our business. We have outlined below the type and scope of these exclusions and the material limitations on the use of these non-GAAP financial measures as a result of these exclusions. EBITDA, adjusted EBITDA, non-GAAP net income and non-GAAP net income per diluted share are not measurements of financial performance under GAAP and should not be considered as a measure of liquidity, as an alternative to net income or as an indicator of any other measure of performance derived in accordance with GAAP. Investors and potential investors in our securities should not rely on EBITDA, adjusted EBITDA, non-GAAP net income and non-GAAP net income per diluted share as a substitute for any GAAP financial measure, including net income. In addition, we urge investors and potential investors in our securities to carefully review the GAAP financial information included as part of our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q that are filed with the Securities and Exchange Commission, as well as our quarterly earnings releases, and compare the GAAP financial information with our EBITDA, adjusted EBITDA, non-GAAP net income and non-GAAP net income per diluted share.

EBITDA, adjusted EBITDA, adjusted EBITDA margin, non-GAAP net income and non-GAAP net income per diluted share may be used by management to internally measure our operating and management performance and may be used by investors as supplemental financial measures to evaluate the performance of our business. We believe that these non-GAAP measures, when viewed with our GAAP results and accompanying reconciliations, provide additional information that is useful to understand the factors and trends affecting our business. We have spent more than 30 years building our database of commercial real estate information and expanding our markets and services partially through acquisitions of complementary businesses. Due to the expansion of our information, analytics and online marketplace services, which has included acquisitions, our net income has included significant charges for amortization of acquired intangible assets, depreciation and other amortization, acquisition- and integration-related costs, restructuring costs, and loss on debt extinguishment. Adjusted EBITDA, non-GAAP net income and non-GAAP net income per diluted share exclude these charges and provide meaningful information about the operating performance of our business, apart from charges for amortization of acquired intangible assets, depreciation and other amortization, acquisition- and integration-related costs, restructuring costs; settlement and impairment costs incurred outside our ordinary course of business. We believe the disclosure of non-GAAP measures can help investors meaningfully evaluate and compare our performance from quarter to quarter and from year to year. We also believe the non-GAAP measures we disclose are measures of our ongoing operating performance because the isolation of non-cash charges, such as amortization and depreciation, and other items, such as interest, income taxes, stock-based compensation expenses, acquisition- and integration-related costs, restructuring costs; loss on debt extinguishment and settlement and impairment costs incurred outside our ordinary course of business, provides additional information about our cost structure, and, over time, helps track our operating progress. In addition, investors, securities analysts and others have regularly relied on EBITDA and may rely on adjusted EBITDA, adjusted EBITDA margin, non-GAAP net income or non-GAAP net income per diluted share to provide a financial measure by which to compare our operating performance against that of other companies in our industry.

Set forth below are descriptions of financial items that have been excluded from net income to calculate EBITDA and the material limitations associated with using this non-GAAP financial measure as compared to net income:

Amortization of acquired intangible assets in cost of revenues may be useful for investors to consider because it represents the diminishing value of any acquired trade names and other intangible assets and the use of our acquired technology, which is one of the sources of information for our database of commercial real estate information. We do not believe these charges necessarily reflect the current and ongoing cash charges related to our operating cost structure.

Amortization of acquired intangible assets in operating expenses may be useful for investors to consider because it represents the estimated attrition of our acquired customer base. We do not believe these charges necessarily reflect the current and ongoing cash charges related to our operating cost structure.

Depreciation and other amortization may be useful for investors to consider because they generally represent the wear and tear on our property and equipment used in our operations. We do not believe these charges necessarily reflect the current and ongoing cash charges related to our operating cost structure.

The amount of interest and other income and expense we generate may be useful for investors to consider and may result in current cash inflows. However, we do not consider the amount of interest and other income and expense to be a representative component of the day-to-day operating performance of our business.

The amount of loss on our debt extinguishment may be useful for investors to consider because it generally represents losses from the early extinguishment of debt. However, we do not consider the amount of the loss on debt extinguishment to be a representative component of the day-to-day operating performance of our business.

Income tax expense may be useful for investors to consider because it generally represents the taxes which may be payable for the period and the change in deferred income taxes during the period and may reduce the amount of funds otherwise available for use in our business. However, we do not consider the amount of income tax expense to be a representative component of the day-to-day operating performance of our business.

Set forth below are descriptions of additional financial items that have been excluded from EBITDA to calculate adjusted EBITDA and the material limitations associated with using this non-GAAP financial measure as compared to net income:

Stock-based compensation expense may be useful for investors to consider because it represents a portion of the compensation of our employees and executives. Determining the fair value of the stock-based instruments involves a high degree of judgment and estimation and the expenses recorded may bear little resemblance to the actual value realized upon the future exercise or termination of the related stock-based awards. Therefore, we believe it is useful to exclude stock-based compensation in order to better understand the long-term performance of our core business.

The amount of acquisition- and integration- related costs incurred may be useful for investors to consider because they generally represent professional service fees and direct expenses related to acquisitions. Because we do not acquire businesses on a predictable cycle we do not consider the amount of acquisition- and integration- related costs to be a representative component of the day-to-day operating performance of our business.

- The amount of settlement and impairment costs incurred outside of our ordinary course of business may be useful for investors to consider because they generally represent gains or losses from the settlement of litigation matters or impairments on acquired intangible assets. We do not believe these charges necessarily reflect the current and ongoing cash charges related to our operating cost structure.

The amount of restructuring costs incurred may be useful for investors to consider because they generally represent costs incurred in connection with a change in a contract or a change in the makeup of our properties or personnel. We do not consider the amount of restructuring related costs to be a representative component of the day-to-day operating performance of our business.

The financial items that have been excluded from our net income to calculate non-GAAP net income and non-GAAP net income per diluted share are amortization of acquired intangible assets and other related costs, stock-based compensation, acquisition- and integration- related costs, restructuring and related costs and settlement and impairment costs incurred outside our ordinary course of business. These items are discussed above with respect to the calculation of adjusted EBITDA together with the material limitations associated with using this non-GAAP financial measure as compared to net income. We subtract an assumed provision for income taxes to calculate non-GAAP net income. In 2017 and 2016, we assumed a 38% tax rate, which approximated our historical long-term statutory corporate tax rate, excluding the impact of discrete items. In 2018 we assumed a 25% tax rate which reflects our full year 2018 statutory tax rate. The decrease in our tax rate in 2018 is mainly due to the Tax Act which reduced the U.S. federal corporate income tax rate from 35% to 21% effective January 1, 2018.

Adjusted EBITDA margin represents adjusted EBITDA divided by revenues for the period.

Non-GAAP net income per diluted share is a non-GAAP financial measure that represents non-GAAP net income divided by the number of diluted shares outstanding for the period used in the calculation of GAAP net income per

diluted share.

Management compensates for the above-described limitations of using non-GAAP measures by using a non-GAAP measure only to supplement our GAAP results and to provide additional information that is useful to understand the factors and trends affecting our business.

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The following table shows our net income reconciled to our EBITDA and our net cash flows from operating, investing and financing activities for the indicated periods (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Net income	\$238,334	\$122,695	\$85,071
Amortization of acquired intangible assets in cost of revenues	20,586	19,707	22,819
Amortization of acquired intangible assets in operating expenses	30,881	17,684	22,731
Depreciation and other amortization	26,276	26,252	24,615
Interest and other income	(13,281 )	(4,044 )	(1,773 )
Interest and other expense	2,830	9,014	10,016
Loss on debt extinguishment	—	3,788	—
Income tax expense	45,681	42,363	51,591
EBITDA	\$351,307	\$237,459	\$215,070
Net cash flows provided by (used in)			
Operating activities	\$335,458	\$234,703	\$200,642
Investing activities	\$(448,001)	\$(72,267 )	\$(23,259 )
Financing activities	\$2,744	\$480,430	\$(30,563 )

## Consolidated Results of Operations

The following table provides our selected consolidated results of operations for the indicated periods (in thousands of dollars and as a percentage of total revenue):

	Year Ended December 31,					
	2018		2017		2016	
Revenues	\$1,191,832	100 %	\$965,230	100 %	\$837,630	100 %
Cost of revenues	269,933	23	220,403	23	173,814	21
Gross profit	921,899	77	744,827	77	663,816	79
Operating expenses:						
Selling and marketing (excluding customer base amortization)	359,858	30	318,362	33	296,483	35
Software development	100,937	8	88,850	9	76,400	9
General and administrative	156,659	13	146,128	15	123,297	15
Customer base amortization	30,881	3	17,671	2	22,731	3
Total operating expenses	648,335	54	571,011	59	518,911	62
Income from operations	273,564	23	173,816	18	144,905	17
Interest and other income	13,281	1	4,044	—	1,773	—
Interest and other expense	(2,830)	) —	(9,014)	) (1 )	(10,016)	) (1 )
Loss on debt extinguishment	—	—	(3,788)	) —	—	—
Income before income taxes	284,015	24	165,058	17	136,662	16
Income tax expense	45,681	4	42,363	4	51,591	6
Net income	\$238,334	20 %	\$122,695	13 %	\$85,071	10 %

The following table provides our revenues by type of service (in thousands of dollars and as a percentage of total revenue):

	Year Ended December 31,					
	2018		2017		2016	
Information and analytics						
CoStar Suite <sup>(1)</sup>	\$545,195	46 %	\$463,185	48 %	\$408,456	49 %
Information services <sup>(1)</sup>	67,624	6	72,618	8	77,178	9
Online marketplaces						
Multifamily <sup>(1)</sup>	405,795	34	279,855	29	224,835	27
Commercial property and land <sup>(1)</sup>	173,218	14	149,572	15	127,161	15
Total revenues	\$1,191,832	100 %	\$965,230	100 %	\$837,630	100 %

<sup>(1)</sup> For further discussion of our Company, strategy and products, see our business overview set forth in "Item 1. Business" in this Annual Report on Form 10-K.

## Comparison of Year Ended December 31, 2018 and Year Ended December 31, 2017

The following table provides a comparison of our selected consolidated results of operations for the year ended December 31, 2018 and 2017 (in thousands of dollars):

	2018	2017	Increase (Decrease) (\$)	Increase (Decrease) (%)	
Revenues					
CoStar Suite	\$545,195	\$463,185	\$82,010	18	%
Information services	67,624	72,618	(4,994)	(7)	)
Multifamily	405,795	279,855	125,940	45	
Commercial property and land	173,218	149,572	23,646	16	
Total revenues	1,191,832	965,230	226,602	23	
Cost of revenues	269,933	220,403	49,530	22	
Gross profit	921,899	744,827	177,072	24	
Operating expenses:					
Selling and marketing (excluding customer base amortization)	359,858	318,362	41,496	13	
Software development	100,937	88,850	12,087	14	
General and administrative	156,659	146,128	10,531	7	
Customer base amortization	30,881	17,671	13,210	75	
Total operating expenses	648,335	571,011	77,324	14	
Income from operations	273,564	173,816	99,748	57	
Interest and other income	13,281	4,044	9,237	228	
Interest and other expense	(2,830)	(9,014)	(6,184)	(69)	)
Loss on extinguishment	—	(3,788)	(3,788)	NM	)
Income before income taxes	284,015	165,058	118,957	72	
Income tax expense	45,681	42,363	3,318	8	
Net income	\$238,334	\$122,695	\$115,639	94	%

NM - Not meaningful

**Revenues.** Revenues increased to \$1,192 million in 2018, from \$965 million in 2017. The \$227 million increase was primarily attributable to increased revenues of approximately \$82 million or 18% from continued organic growth of CoStar Suite, as well as, conversion of our LoopNet customers to our CoStar platform as a result of integration of the LoopNet and CoStar databases. Information services revenue decreased \$5 million or 7% primarily due to the continued wind down of LoopNet information services, including Premium Searcher, resulting in a loss of \$29 million of revenues, partially offset by a \$22 million increase in revenues from the continued growth of our CoStar Real Estate Manager offering. Multifamily revenue increased \$126 million or 45%, driven by incremental revenues related to the acquisition of ForRent. Commercial property and land revenue increased \$24 million or 16%, due to growth in our LoopNet online marketplace services of \$12 million, as well as, growth in our land and businesses for sale services of \$12 million.

**Gross Profit.** Gross profit increased to \$922 million in 2018, from \$745 million in 2017. The gross margin percentage remained relatively consistent as a percentage of revenues at 77% for both 2018 and 2017. Investment in research to further support our products and services led to an increase in cost of revenues of \$50 million. The increase was primarily due to additional research personnel costs of \$32 million, an increase of \$7 million in direct costs partially due to the ForRent and Cozy acquisitions and our Westside Rentals services, an increase in software licensing expense of \$3 million and \$2 million in occupancy related costs in connection with our research office in Richmond, Virginia.



**Selling and Marketing Expenses.** Selling and marketing expenses increased to \$360 million in 2018, from \$318 million in 2017, and decreased as a percentage of revenues to 30%, compared to 33% in 2017. The increase in the amount of selling and marketing expenses was due to a \$14 million increase in sales personnel costs, partially related to the acquisition of ForRent, which included additional salaries and retention costs. In addition, marketing related expenses increased \$21 million, primarily

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due to increased search engine marketing costs due to the acquisition of ForRent. Sales conference and travel related costs also increased \$4 million.

**Software Development Expenses.** Software development expenses increased to \$101 million in 2018, from \$89 million in 2017, and decreased as a percentage of revenues to 8% in 2018, compared to 9% in 2017. The increase in the amount of software development expense was primarily due to a \$16 million increase in personnel costs, of which \$6 million was due to the acquisition of ForRent. These increases were partially offset by a \$4 million decrease in professional services and recruiting costs in 2018.

**General and Administrative Expenses.** General and administrative expenses increased to \$157 million in 2018, from \$146 million in 2017, and decreased as a percentage of revenues to 13% in 2018, compared to 15% 2017. The increase in the amount of general and administrative expenses was primarily due to an increase in administrative personnel costs of \$9 million to support the ongoing growth of the business and a \$6 million increase in software licensing costs, partially offset by a \$6 million decrease in professional services, primarily due to a reduction in legal costs of \$9 million.

**Customer Base Amortization Expense.** Customer base amortization expense increased to \$31 million in 2018, from \$18 million in 2017, and increased as a percentage of revenues to 3% in 2018, compared to 2% in 2017. The increase was primarily due to the ForRent acquisition, partially offset by lower amortization of existing customer base intangible assets acquired in prior years due to applying an accelerated amortization methodology for a majority of those assets.

**Interest and Other Income.** Interest and other income increased to \$13 million in 2018, from \$4 million in 2017. The increase was primarily due to our higher average cash and cash equivalent balance and interest rates in 2018 than in 2017.

**Interest and Other Expense.** Interest and other expense decreased to \$3 million in 2018, from \$9 million in 2017. The decrease was primarily due to the repayment of outstanding debt in connection with entering into the amended and restated credit agreement (the “2017 Credit Agreement”) in October 2017.

**Loss on Extinguishment.** The loss on extinguishment recognized in 2017 was due to entering into the 2017 Credit Agreement, which amended and restated in its entirety the existing credit agreement dated April 1, 2014, and resulted in a loss on debt extinguishment of approximately \$4 million.

**Income Tax Expense.** Income tax expense increased to \$46 million in 2018, from \$42 million in 2017. The effective tax rate was 16% in 2018 compared to 26% in 2017. This decrease was primarily due to the Tax Act, which reduced the federal corporate income tax rate effective January 1, 2018, from 35% to 21% and excess tax benefits on share payments and state research and development tax credits.

#### Comparison of Business Segment Results for Year Ended December 31, 2018 and Year Ended December 31, 2017

We manage our business geographically in two operating segments, with the primary areas of measurement and decision-making being North America, which includes the U.S. and Canada, and International, which includes the U.K., Spain, Germany and France. Management relies on an internal management reporting process that provides revenue and operating segment net income before interest and other income (expense), loss on debt extinguishment, income taxes, depreciation and amortization (“EBITDA”). Management believes that operating segment EBITDA is an appropriate measure for evaluating the operational performance of our operating segments. EBITDA is used by management to internally measure operating and management performance and to evaluate the performance of the business. However, this measure should be considered in addition to, not as a substitute for or superior to, income

from operations or other measures of financial performance prepared in accordance with GAAP.

Segment Revenues. North America revenues increased to \$1,157 million for the year ended December 31, 2018, from \$934 million for the year ended December 31, 2017. The increase in North America revenues was primarily due to a \$126 million increase in Multifamily revenues driven by incremental revenues related to the acquisition of ForRent, continued organic growth in CoStar Suite revenues of \$79 million and an increase of \$24 million in Commercial property and land revenue due to growth in our LoopNet online marketplace services of \$12 million, as well as, growth in our land and businesses for sale services of \$12 million. International revenues increased to \$35 million for the year ended December 31, 2018, from \$31 million for the year ended December 31, 2017. The increase in International revenues was primarily due to an increase in revenues from the further penetration of our subscription-based services, and to a lesser extent, a positive impact from foreign currency fluctuations in 2018.

Segment EBITDA. North America EBITDA increased to \$358 million for the year ended December 31, 2018, from \$237 million for the year ended December 31, 2017. The increase in North America EBITDA was due primarily to an increase in revenues, partially offset by increases in personnel related costs due to the ForRent acquisition and ongoing support of the business.

International EBITDA decreased to a loss of \$7 million for the year ended December 31, 2018, from \$1 million profit for the year ended December 31, 2017. The decrease in International EBITDA was primarily due to the continued investment in our International research operations in the U.K., along with higher occupancy related costs, additional travel and professional services costs.

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## Comparison of Year Ended December 31, 2017 and Year Ended December 31, 2016

The following table provides a comparison of our selected consolidated results of operations for the year ended December 31, 2017 and 2016 (in thousands of dollars):

	2017	2016	Increase (Decrease) (\$)	Increase (Decrease) (%)	
Revenues					
CoStar Suite	\$463,185	\$408,456	\$ 54,729	13	%
Information services	72,618	77,178	(4,560)	(6)	)
Multifamily	279,855	224,835	55,020	24	
Commercial property and land	149,572	127,161	22,411	18	
Total revenues	965,230	837,630	127,600	15	
Cost of revenues	220,403	173,814	46,589	27	
Gross profit	744,827	663,816	81,011	12	
Operating expenses:					
Selling and marketing (excluding customer base amortization)	318,362	296,483	21,879	7	
Software development	88,850	76,400	12,450	16	
General and administrative	146,128	123,297	22,831	19	
Customer base amortization	17,671	22,731	(5,060)	(22)	)
Total operating expenses	571,011	518,911	52,100	10	
Income from operations	173,816	144,905	28,911	20	
Interest and other income	4,044	1,773	2,271	NM	
Interest and other expense	(9,014)	(10,016)	(1,002)	(10)	)
Loss on extinguishment	(3,788)	—	(3,788)	NM	)
Income before income taxes	165,058	136,662	28,396	21	
Income tax expense	42,363	51,591	(9,228)	(18)	)
Net income	\$122,695	\$85,071	\$ 37,624	44	%

NM - Not meaningful

**Revenues.** Revenues increased to \$965 million in 2017, from \$838 million in 2016. The \$127 million increase was primarily attributable to increased revenues of approximately \$55 million or 13% from continued organic growth in CoStar Suite as well as a movement of our LoopNet customers onto our CoStar platform as a result of the LoopNet integration. Information services decreased \$5 million or 6% primarily due to continued wind down of LoopNet Information products including Premium Searcher partially offset by increases in our CoStar Real Estate Manager offering. Multifamily year over year increases of \$55 million or 24% was primarily attributable to organic growth as well as some smaller increases for several acquisitions. Commercial property and land revenue increased \$22 million or 18% over 2016 primarily due to organic growth as well as an increase due to the Landwatch acquisition.

**Gross Profit.** Gross profit increased to \$745 million in 2017, from \$664 million in 2016. The gross margin percentage decreased to 77% in 2017, from 79% in 2016. Revenue growth led to an increase in costs of revenues of \$38 million for additional research personnel costs, \$5 million in occupancy related costs from our new research office in Richmond, partially offset by a decrease in the amortization of intangible assets of \$4 million. Gross margins are impacted by the amortization of certain intangible assets acquired through acquisitions.

**Selling and Marketing Expenses.** Selling and marketing expenses increased to \$318 million in 2017, from \$296 million in 2016, and decreased as a percentage of revenues to 33% from 35%. The increase in the amount of selling and marketing expenses was primarily due to a \$25 million increase in sales personnel costs related to increased commission expense from higher sales in 2017, partially offset by a \$2 million decrease in digital marketing costs.

**Software Development Expenses.** Software development expenses increased to \$89 million in 2017, from \$76 million in 2016, and remained relatively consistent as a percentage of revenues at 9% for both 2017 and 2016. The increase in the amount of software development expense was primarily due to a \$14 million increase in personnel costs to support enhancements and upgrades to our services and integration of the backend systems of the LoopNet and CoStar databases.

**General and Administrative Expenses.** General and administrative expenses increased 19% to \$146 million in 2017, from \$123 million in 2016, and remained relatively consistent as a percentage of revenues at 15% in 2017 and 2016. The increase in the amount of general and administrative expenses was primarily due to legal costs related to litigation of approximately \$13 million, an increase in administrative personnel costs of \$5 million to support the ongoing growth of the business, and a \$3 million increase in charitable donations.

**Customer Base Amortization Expense.** Customer base amortization expense decreased to approximately \$18 million in 2017, from \$23 million in 2016, and decreased as a percentage of revenues to 2% in 2017, compared to 3% in 2016. The decrease in the amount and percentage of customer base amortization expense was primarily due to the accelerated amortization of acquired customer bases in 2016 as compared to 2017.

**Interest and Other Income.** Interest and other income increased to approximately \$4 million in 2017, compared to approximately \$2 million in 2016. The increase was primarily due to increased short term investments on a larger cash balance in 2017 than in 2016 mainly due to net proceeds of \$834 million from the equity offering in October 2017.

**Interest and Other Expense.** Interest and other expense remained relatively consistent at \$9 million in 2017 compared to \$10 million in 2016. The decrease was primarily due to the repayment of outstanding debt in October 2017 in connection with the 2017 Credit Agreement, partially offset by higher interest rates on outstanding debt in 2017 compared to 2016.

**Loss on Extinguishment.** The loss on extinguishment was due to the restatement and amendment of the 2014 Credit Agreement as the 2017 Credit Agreement, which resulted in a loss on debt extinguishment of approximately \$4 million.

**Income Tax Expense.** Income tax expense decreased to \$42 million in 2017 compared to \$52 million in 2016. Without the effect of discrete items, income tax expense would have increased by approximately \$12 million. Discrete items resulted in a reduction in tax expense of approximately \$22 million including the revaluation of the deferred tax liability at the lower federal statutory tax rate resulting in a \$7 million benefit. We also recognized approximately \$8 million benefit in net research and development tax benefits related to the periods 2013-2017. Finally, we recognized \$7 million benefit from the impact of the accounting rule change in ASU 2016-09 that provided for recognizing excess tax benefits in income tax expense as compared to additional paid in capital, which was the treatment prior to 2017.

#### Comparison of Business Segment Results for Year Ended December 31, 2017 and Year Ended December 31, 2016

We manage our business geographically in two operating segments, with the primary areas of measurement and decision-making being North America, which includes the U.S. and Canada, and International, which includes the U.K., Spain, Germany and France. Management relies on an internal management reporting process that provides revenue and operating segment EBITDA. Management believes that operating segment EBITDA is an appropriate measure for evaluating the operational performance of our operating segments. EBITDA is used by management to internally measure operating and management performance and to evaluate the performance of the business. However, this measure should be considered in addition to, not as a substitute for or superior to, income from operations or other measures of financial performance prepared in accordance with GAAP.

Segment Revenues. North America revenues increased to \$934 million for the year ended December 31, 2017, compared to \$809 million for the year ended December 31, 2016. This increase in North America revenues was primarily due to increased revenues of approximately \$55 million from our Multifamily products, and an increase of \$55 million in CoStar Suite from the continued growth of our subscription-based services due to successful cross-selling of our services to our customers in existing markets, combined with continued high renewal rates. International revenues increased to \$31 million for the year ended December 31, 2017, compared to \$28 million for the year ended December 31, 2016. This increase was primarily due to continued growth of our subscription-based information services resulting from sales of CoStar Suite.

Segment EBITDA. North America EBITDA increased to \$237 million for the year ended December 31, 2017, compared to \$211 million for the year ended December 31, 2016. The increase in North America EBITDA was due primarily to an increase in revenues of \$125 million primarily offset by increased personnel costs from additional investments in our research operations and the opening of our Richmond research headquarters, as well as increased legal costs. International EBITDA decreased to \$1 million for the year ended December 31, 2017, compared to \$4 million for the year ended December 31, 2016. This decrease in International



EBITDA was primarily due to an increase in personnel costs from the relocation of our European research headquarters from Glasgow, Scotland to London, England and as a result of increased headcount from investments in our International research operations in Madrid, Spain and the U.K.

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## Consolidated Quarterly Results of Operations

The following tables present our unaudited consolidated results of operations on a quarterly basis for the indicated periods (in thousands, except per share amounts, and as a percentage of total revenues). These tables should be read in conjunction with the consolidated financial statements and related notes included in this Annual Report on Form 10-K. The quarterly results of historical periods are not necessarily indicative of quarterly results for any future period.

	2018				2017			
	Mar. 31	Jun. 30	Sep. 30	Dec. 31	Mar. 31	Jun. 30	Sep. 30	Dec. 31
Revenues	\$273,718	\$297,018	\$305,525	\$315,571	\$226,553	\$237,153	\$243,883	\$243,883
Cost of revenues	62,477	67,136	72,072	68,248	51,346	55,273	55,273	55,273
Gross profit	211,241	229,882	233,453	247,323	175,207	181,880	188,610	188,610
Operating expenses	157,796	186,108	162,765	141,666	137,545	153,997	134,000	134,000
Income from operations	53,445	43,774	70,688	105,657	37,662	27,883	54,610	54,610
Interest and other income	2,987	2,652	3,035	4,607	429	605	555	555
Interest and other expense	(690)	(728)	(717)	(695)	(2,686)	(2,693)	(2,900)	(2,900)
Loss on debt extinguishment	—	—	—	—	—	—	—	—
Income before income taxes	55,742	45,698	73,006	109,569	35,405	25,795	55,165	55,165
Income tax expense	3,511	1,863	14,247	26,060	13,275	3,611	20,900	20,900
Net income	\$52,231	\$43,835	\$58,759	\$83,509	\$22,130	\$22,184	\$34,265	\$34,265
Net income per share — basic	\$1.46	\$1.22	\$1.63	\$2.31	\$0.69	\$0.68	\$1.00	\$1.00
Net income per share — diluted	\$1.44	\$1.20	\$1.61	\$2.29	\$0.68	\$0.68	\$0.98	\$0.98

	2018				2017			
	Mar. 31	Jun. 30	Sep. 30	Dec. 31	Mar. 31	Jun. 30	Sep. 30	Dec. 31
Revenues	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Cost of revenues	23	23	24	22	23	23	22	23
Gross profit	77	77	76	78	77	77	78	77
Operating expenses	57	63	54	46	60	65	55	58
Income from operations	20	14	22	32	17	12	23	19
Interest and other income	1	1	1	1	—	—	—	1
Interest and other expense	—	—	—	—	(1)	(1)	(1)	—
Loss on debt extinguishment	—	—	—	—	—	—	—	(1)
Income before income taxes	21	15	23	33	16	11	22	19
Income tax expense	1	1	5	8	6	2	8	2
Net income	20 %	14 %	18 %	25 %	10 %	9 %	14 %	17 %

## Liquidity and Capital Resources

Our principal sources of liquidity are cash and cash equivalents, cash from operations and the availability of funds from our revolving credit facility. Total cash and cash equivalents decreased to \$1.1 billion at December 31, 2018 compared to cash and cash equivalents of \$1.2 billion at December 31, 2017. The decrease in cash and cash equivalents for the year ended December 31, 2018 was primarily due to the cash paid, net of cash acquired in connection with the acquisitions of ForRent, Cozy and Realla of an aggregate of \$418 million, as well as cash paid for purchases of property and equipment of \$30 million and repurchases of restricted stock to satisfy employee tax

withholding obligations upon vesting of restricted stock awards valued at approximately \$24 million. These decreases were partially offset by proceeds from the exercise of employee stock options of approximately \$27 million and cash generated from operations of \$335 million.

Net cash provided by operating activities for the year ended December 31, 2018 was \$335 million compared to \$235 million for the year ended December 31, 2017 and \$201 million for the year ended December 31, 2016. The \$100 million and \$34 million

increases from December 31, 2017 to December 31, 2018 and from December 31, 2016 to December 31, 2017, respectively, are primarily due to higher income from operations in both periods. Income from operations was partially offset by fluctuations in working capital.

Net cash used in investing activities for the year ended December 31, 2018 was \$448 million compared to \$72 million for the year ended December 31, 2017. The \$376 million increase in investing activities in 2018 compared to 2017 was primarily due to approximately \$418 million cash paid, net of cash acquired, to acquire ForRent, Cozy and Realla during 2018, compared to \$48 million cash paid to acquire Westside Rentals, LandWatch and The Screening Pros during 2017. During 2018, we incurred capital expenditures of approximately \$30 million compared to approximately \$24 million during 2017.

Net cash used in investing activities for the year ended December 31, 2017 was \$72 million compared to \$23 million for the year ended December 31, 2016. The \$49 million increase in investing activities in 2017 compared to 2016 was primarily due to \$48 million cash paid to acquire Westside Rentals, LandWatch and The Screening Pros during 2017. During 2017, we incurred capital expenditures of approximately \$24 million primarily related to computer equipment and leasehold improvements for build out of sales office space.

Net cash provided by financing activities for the year ended December 31, 2018 was \$3 million compared to net cash provided by financing activities of \$480 million for the year ended December 31, 2017 and \$31 million in December 31, 2016. This \$477 million decrease in financing activities in 2018 compared to 2017 and \$449 million increase in financing activities in 2017 compared to 2016 was primarily due to \$834 million in net proceeds from our equity offering, partially offset by an increase in debt repayments of \$325 million in 2017.

Our future capital requirements will depend on many factors, including, among others, our operating results, expansion and integration efforts, and our level of acquisition activity or other strategic transactions. To date, we have grown in part by acquiring other companies, and we expect to continue to make acquisitions. Any future acquisitions may vary in size and could be material to our current operations. We may use cash, stock, debt or other means of funding to make any future acquisitions.

Based on current plans, we believe that our available cash combined with positive cash flow provided by operating activities should be sufficient to fund our operations for at least the next 12 months.

Contractual Obligations. The following table summarizes our principal contractual obligations at December 31, 2018 and the effect such obligations are expected to have on our liquidity and cash flows in future periods (in thousands):

	Total	2019	2020-2021	2022-2023	Thereafter
Operating leases	\$169,078	\$30,485	\$56,676	\$50,149	\$31,768
Purchase obligations <sup>(1)</sup>	12,690	7,178	5,477	35	—
Total contractual principal cash obligations	\$181,768	\$37,663	\$62,153	\$50,184	\$31,768

<sup>(1)</sup>Amounts do not include (i) contracts with terms of twelve months or less, (ii) multi-year contracts that may be terminated by a third-party or us, or (iii) employment agreements. Amounts do not include income taxes payable of \$17 million due to uncertainty regarding the timing of future cash payments.

## Critical Accounting Policies

The preparation of financial statements and related disclosures in conformity with U.S. generally accepted accounting principles (“GAAP”) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and revenues and expenses during the period reported. The following accounting policies involve a “critical accounting estimate” because they are particularly dependent on estimates and assumptions made by management about matters that are highly uncertain at the time the accounting estimates are made. In addition, while we have used our best estimates based on facts and circumstances available to us at the time, different acceptable assumptions would yield different results. Changes in the accounting estimates are reasonably likely to occur from period to period, which may have a material impact on the presentation of our financial condition and results of operations. We review these estimates and assumptions periodically and reflect the effects of revisions in the period that they are determined to be necessary. We consider policies relating to the following matters to be critical accounting policies:

- Long-lived assets, intangible assets and goodwill
- Revenue recognition
- Income taxes
- Business combinations

With respect to our accounting policy for long-lived assets, intangible assets and goodwill, we further supplement in Note 2 of the Notes to the Consolidated Financial Statements included in this Annual Report on Form 10-K with the following:

We assess the impairment of long-lived assets, identifiable intangibles and goodwill whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Judgments made by management relate to the expected useful lives of long-lived assets and our ability to recover the carrying value of such assets. The accuracy of these judgments may be adversely affected by several factors, including the factors listed below:

- Significant underperformance relative to historical or projected future operating results;
- Significant changes in the manner of our use of the acquired assets or the strategy for our overall business;
- Significant negative industry or economic trends; or
- Significant decline in our market capitalization relative to net book value for a sustained period.

When we determine that the carrying value of long-lived and identifiable intangible assets may not be recovered based upon the existence of one or more of the above indicators, we test for impairment.

Goodwill and identifiable intangible assets that are not subject to amortization are tested annually for impairment by each reporting unit on October 1 of each year and are also tested for impairment more frequently based upon the existence of one or more of the above indicators.

Goodwill represents the excess of costs over the fair value of assets of acquired businesses. Goodwill is not amortized, but instead tested for impairment at least annually by each reporting unit. The Company may first assess qualitative factors to evaluate whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount or elect to bypass such assessment. If it is determined that it is more likely than not that the fair value of a reporting unit is less than its carrying value, or the Company elects to bypass such assessment, the Company then determines the fair value of each reporting unit. We estimate the fair value of each reporting unit based on a projected discounted cash flow model that includes significant assumptions and estimates including our discount rate, growth rate and future financial performance. Assumptions about the discount rate are based on a weighted average cost of capital for comparable companies. Assumptions about the growth rate and future financial performance of a reporting

unit are based on our forecasts, business plans, economic projections and anticipated future cash flows. These assumptions are subject to change from period to period and could be adversely impacted by the uncertainty surrounding global market conditions, commercial real estate conditions and the competitive environment in which we operate. Changes in these or other factors could negatively affect our reporting units' fair value and potentially result in impairment charges. Such impairment charges could have an adverse effect on our results of operations.

The fair value of each reporting unit is compared to the carrying amount of the reporting unit. If the carrying value of the reporting unit exceeds the fair value, then an impairment loss is recognized for the difference. We estimate the fair value of our reporting units based on a projected discounted cash flow method using a discount rate determined by our management to be commensurate with the risk in our current business model. As of October 1, 2017, the date of our most recent impairment analysis, the estimated fair value of each of our reporting units substantially exceeded the carrying value of our reporting units. There have been no events or changes in circumstances as a result of our qualitative impairment analysis on October 1, 2018, that would indicate that the carrying value of each reporting unit may not be recoverable.

For an in depth discussion of each of our significant accounting policies, including our critical accounting policies and further information regarding estimates and assumptions involved in their application, see Note 2 to the accompanying consolidated financial statements included in "Item 8. Financial Statements and Supplementary Data" in this Annual Report on Form 10-K.

#### Recent Accounting Pronouncements

See Note 2 of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K for information on recent accounting pronouncements, including the expected dates of adoption.

#### Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We provide information, analytics and online marketplace services to the commercial real estate and related business community in the U.S., the U.K., and parts of Canada, Spain, Germany and France. Our functional currency for our operations in the U.K., Canada, Spain, Germany and France is the local currency. As such, fluctuations in the British Pound, Canadian dollar and Euro may have an impact on our business, results of operations and financial position. For the year ended December 31, 2018, revenues denominated in foreign currencies was approximately 3% of total revenue. For the year ended December 31, 2018, our revenues would have decreased by approximately \$3 million if the U.S. dollar exchange rate used strengthened by 10%. For the year ended December 31, 2018, our revenues would have increased by approximately \$3 million if the U.S. dollar exchange rate used weakened by 10%. In addition, we have assets and liabilities denominated in foreign currencies. We currently do not use financial instruments to hedge our exposure to exchange rate fluctuations with respect to our foreign subsidiaries. We may seek to enter into hedging transactions in the future to reduce our exposure to exchange rate fluctuations, but we may be unable to enter into hedging transactions successfully, on acceptable terms or at all. As of December 31, 2018, accumulated other comprehensive loss included a loss from foreign currency translation adjustments of approximately \$11 million.

We do not have material exposure to market risks associated with changes in interest rates related to cash equivalent securities held as of December 31, 2018. As of December 31, 2018, we had \$1.1 billion of cash and cash equivalents. If there is an increase or decrease in interest rates, there will be a corresponding increase or decrease in the amount of interest earned on our cash and cash equivalents.

Included within our short-term and long-term investments are investments in mostly AAA-rated student loan ARS. These securities are primarily securities supported by guarantees from the FFELP of the U.S. Department of Education. As of December 31, 2018, \$11 million of our investments in ARS failed to settle at auction. As a result, we may not be able to sell these investments at par value until a future auction on these investments is successful. In the event we need to immediately liquidate these investments, we may have to locate a buyer outside the auction process, who may be unwilling to purchase the investments at par, resulting in a loss. If the issuers are unable to successfully close future auctions and/or their credit ratings deteriorate, we may be required to adjust the carrying value of these investments as a temporary impairment and recognize a greater unrealized loss in accumulated other comprehensive loss or as an other-than-temporary impairment charge to earnings. Based on our ability to access our cash and cash equivalents, and our expected operating cash flows, we do not anticipate having to sell these securities below par value in order to operate our business in the foreseeable future. See Notes 5 and 6 to the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K for further discussion.

We had approximately \$2 billion in intangible assets as of December 31, 2018. As of December 31, 2018, we believe our intangible assets will be recoverable, however, changes in the economy, the business in which we operate and our own relative performance could change the assumptions used to evaluate intangible asset recoverability. In the event that we determine that an asset has been impaired, we would recognize an impairment charge equal to the amount by

which the carrying amount of the assets exceeds the fair value of the asset. We continue to monitor these assumptions and their effect on the estimated recoverability of our intangible assets.



## Item 8. Financial Statements and Supplementary Data

Financial Statements meeting the requirements of Regulation S-X are set forth beginning at page F-1. Supplementary data is set forth in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” under the caption “Consolidated Results of Operations” and “Consolidated Quarterly Results of Operations.”

## Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

### Item 9A. Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission’s rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

As of December 31, 2018, we carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and our Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures. Based on the foregoing, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective and were operating at a reasonable assurance level.

During 2018, we continued to implement a new financial system that is designed to improve the efficiency and effectiveness of our operational and financial accounting processes. This implementation is expected to continue through 2019. Consistent with any process change that we implement, the design of the internal controls has and will continue to be evaluated for effectiveness as part of our overall assessment of the effectiveness of our disclosure controls and procedures. We expect that the implementation of this system will improve our internal controls over financial reporting.

Other than the implementation of a new financial system noted above, there have been no changes in our internal control over financial reporting during our most recent fiscal year that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

### Management’s Report on Internal Control over Financial Reporting

Management of CoStar is responsible for establishing and maintaining adequate internal control over financial reporting and for the assessment of the effectiveness of internal control over financial reporting. As defined by the Securities and Exchange Commission, internal control over financial reporting is a process designed by, or supervised by, the Company’s principal executive and principal financial officers, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with GAAP.

The Company’s internal control over financial reporting is supported by written policies and procedures, that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and

dispositions of the Company's assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of the Company are being made only in accordance with authorizations of the Company's management and directors; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In connection with the preparation of the Company's annual financial statements, management of the Company has undertaken an assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2018 based on criteria established in Internal Control – Integrated Framework (2013 framework) issued by the Committee of Sponsoring Organizations of the Treadway Commission (“the COSO Framework”). Management's assessment included an evaluation of the

design of the Company's internal control over financial reporting and testing of the operational effectiveness of the Company's internal control over financial reporting.

Based on this assessment, management has concluded that the Company's internal control over financial reporting was effective as of December 31, 2018.

Ernst & Young LLP, the independent registered public accounting firm that audited the Company's financial statements included in this report, has issued an attestation report on the effectiveness of internal control over financial reporting, a copy of which is included in this Annual Report on Form 10-K.

On February 21, 2018, we completed the acquisition of ForRent. On October 12, 2018, we completed the acquisition of Realla Ltd. On November 8, 2018, we completed the acquisition of Cozy Services, Ltd. As permitted by the Securities and Exchange Commission, we have elected to exclude the internal controls of these acquisitions that have not been integrated into our existing processes and controls from our assessment of the effectiveness of internal control over financial reporting as of December 31, 2018. The excluded aggregate financial position of ForRent, Realla Ltd. and Cozy Ltd. represented less than 1% of our total assets as of December 31, 2018, and less than 4% of our revenues for the year then ended. We will include the internal controls of ForRent, Realla Ltd. and Cozy Services, Ltd. in our assessment of the effectiveness of our internal control over financial reporting as of December 31, 2019.

Item 9B. Other Information.

None.

### PART III

Item 10. Directors, Executive Officers and Corporate Governance

CoStar has adopted a Code of Conduct for its directors. In addition, CoStar has adopted a separate Code of Conduct for its officers and employees, including its principal executive, financial and accounting officers, or persons performing similar functions. Copies of each of these codes may be found in the "Investors" section of the Company's website at <http://www.costargroup.com/investors/governance>. We intend to disclose future amendments to certain provisions of our Codes, or waivers of such provisions granted to executive officers and directors, as required by SEC rules on the website within four business days following the date of such amendment or waiver.

The remaining information required by this Item is incorporated by reference to our Proxy Statement for our 2019 annual meeting of stockholders.

Item 11. Executive Compensation

The information required by this Item is incorporated by reference to our Proxy Statement for our 2019 annual meeting of stockholders.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this Item is incorporated by reference to our Proxy Statement for our 2019 annual meeting of stockholders.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this Item is incorporated by reference to our Proxy Statement for our 2019 annual meeting of stockholders.

Item 14. Principal Accountant Fees and Services

The information required by this Item is incorporated by reference to our Proxy Statement for our 2019 annual meeting of stockholders.

## PART IV

## Item 15. Exhibits and Financial Statement Schedules

(a)(1) The following financial statements are filed as a part of this report: CoStar Group, Inc. Consolidated Financial Statements.

(a)(2) Financial statement schedules:

## Schedule II – Valuation and Qualifying Accounts

The table below details the activity of the allowance for doubtful accounts and sales credits<sup>(1)</sup> for the years ended December 31, 2018, 2017, and 2016 (in thousands):

	Balance at Beginning of Year	Charged to Expense	Reductions	Balance at End of Year
Year ended December 31, 2016	\$ 7,478	\$ 7,358	\$ 8,492	\$ 6,344
Year ended December 31, 2017	\$ 6,344	\$ 5,690	\$ 5,565	\$ 6,469
Year ended December 31, 2018	\$ 6,469	\$ 6,542	\$ 7,302	\$ 5,709

(1) Additions to the allowance for doubtful accounts are charged to bad debt expense. Additions to the allowance for sales credits are charged against revenues.

Additional financial statement schedules are omitted because they are not applicable or not required or because the required information is incorporated herein by reference or included in the financial statements or related notes included elsewhere in this report.

(a)(3) The documents required to be filed as exhibits to this Report under Item 601 of Regulation S-K are listed as follows:

## Exhibits

Exhibit No.	Description
<u>3.1</u>	Third Amended and Restated Certificate of Incorporation (Incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on June 6, 2013).
<u>3.2</u>	Third Amended and Restated By-Laws (Incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on September 24, 2013).
<u>4.1</u>	Specimen Common Stock Certificate (Incorporated by reference to Exhibit 4.1 to the Registration Statement on Form S-4 of the Registrant (Reg. No. 333-174214) filed with the Commission on June 3, 2011).
* <u>10.1</u>	CoStar Group, Inc. 2016 Stock Incentive Plan (Incorporated by reference to Exhibit 4.4 to the Registration Statement on Form S-8 of the Registrant (Reg. No. 333-212278) filed with the Commission on June 28, 2016).
* <u>10.2</u>	First Amendment to the CoStar Group, Inc. 2016 Stock Incentive Plan (Incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed April 25, 2018).
* <u>10.3</u>	CoStar Group, Inc. 2007 Stock Incentive Plan, as amended (Incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed June 8, 2012).
* <u>10.4</u>	

CoStar Group, Inc. 2007 Stock Incentive Plan French Sub-Plan (Incorporated by reference to Exhibit 10.3 to the Registrant's Report on Form 10-K filed February 29, 2008).

\*10.5 Form of CoStar Group, Inc. 2016 Plan Restricted Stock Grant Agreement between the Registrant and certain of its officers, directors and employees (Incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed July 28, 2016).

\*10.6 Form of CoStar Group, Inc. 2016 Plan Restricted Stock Grant Agreement for Service Awards between the Registrant and certain of its officers and employees (Incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q filed July 28, 2016).

\*10.7 Form of CoStar Group, Inc. 2016 Plan Restricted Stock Unit Grant Agreement between the Registrant and certain of its officers and employees (Incorporated by reference to Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q filed July 28, 2016).

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Exhibit No.	Description
* <u>10.8</u>	Form of CoStar Group, Inc. 2016 Plan Incentive Stock Option Grant Agreement between the Registrant and certain of its officers and employees (Incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q filed July 28, 2016).
* <u>10.9</u>	Form of CoStar Group, Inc. 2016 Plan Incentive Stock Option Grant Agreement between the Registrant and Andrew C. Florance (Incorporated by reference to Exhibit 10.7 to the Registrant's Quarterly Report on Form 10-Q filed July 28, 2016).
* <u>10.10</u>	Form of CoStar Group, Inc. 2016 Plan Nonqualified Stock Option Grant Agreement between the Registrant and certain of its officers, directors and employees (Incorporated by reference to Exhibit 10.8 to the Registrant's Quarterly Report on Form 10-Q filed July 28, 2016).
* <u>10.11</u>	Form of CoStar Group, Inc. 2016 Plan Nonqualified Stock Option Grant Agreement between the Registrant and Andrew C. Florance (Incorporated by reference to Exhibit 10.9 to the Registrant's Quarterly Report on Form 10-Q filed July 28, 2016).
* <u>10.12</u>	Form of 2007 Plan Restricted Stock Grant Agreement between the Registrant and certain of its officers, directors and employees (Incorporated by reference to Exhibit 99.1 to the Registrant's Report on Form 8-K filed June 22, 2007).
* <u>10.13</u>	Form of 2007 Plan Restricted Stock Unit Agreement between the Registrant and certain of its officers and employees (Incorporated by reference to Exhibit 10.8 to the Registrant's Report on Form 10-K filed February 20, 2014).
* <u>10.14</u>	Form of 2007 Plan Incentive Stock Option Grant Agreement between the Registrant and certain of its officers and employees (Incorporated by reference to Exhibit 10.8 to the Registrant's Report on Form 10-K filed February 24, 2009).
* <u>10.15</u>	Form of 2007 Plan Incentive Stock Option Grant Agreement between the Registrant and Andrew C. Florance (Incorporated by reference to Exhibit 10.9 to the Registrant's Report on Form 10-K filed February 24, 2009).
* <u>10.16</u>	Form of 2007 Plan Nonqualified Stock Option Grant Agreement between the Registrant and certain of its officers and employees (Incorporated by reference to Exhibit 10.10 to the Registrant's Report on Form 10-K filed February 24, 2009).
* <u>10.17</u>	Form of 2007 Plan Nonqualified Stock Option Grant Agreement between the Registrant and certain of its directors (Incorporated by reference to Exhibit 10.11 to the Registrant's Report on Form 10-K filed February 24, 2009).
* <u>10.18</u>	Form of 2007 Plan Nonqualified Stock Option Grant Agreement between the Registrant and Andrew C. Florance (Incorporated by reference to Exhibit 10.12 to the Registrant's Report on Form 10-K filed February 24, 2009).
* <u>10.19</u>	Form of 2007 Plan French Sub-Plan Restricted Stock Agreement between the Registrant and certain of its employees (Incorporated by reference to Exhibit 10.10 to the Registrant's Report on Form 10-K filed February 29, 2008).
* <u>10.20</u>	CoStar Group, Inc. 2016 Cash Incentive Plan (Incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed July 28, 2016).
* <u>10.21</u>	CoStar Group, Inc. Amended and Restated Employee Stock Purchase Plan (Incorporated by reference to Exhibit 4.4 to the Registrant's Registration Statement on Form S-8 filed with the Commission on September 14, 2015).
* <u>10.22</u>	CoStar Group, Inc. Management Stock Purchase Plan (Incorporated by reference to Exhibit 10.21 to the Registrant's Report on Form 10-K filed February 23, 2018).
* <u>10.23</u>	Summary of Non-Employee Director Compensation (Incorporated by reference to Exhibit 10.1 to the Registrant's Report on Form 10-Q filed on October 24, 2013).
* <u>10.24</u>	Employment Agreement for Andrew C. Florance (Incorporated by reference to Exhibit 10.2 to Amendment No. 1 to the Registration Statement on Form S-1 of the Registrant (Reg. No. 333-47953) filed with the

Commission on April 27, 1998).

\*10.25 First Amendment to Andrew C. Florance Employment Agreement, effective January 1, 2009 (Incorporated by reference to Exhibit 10.16 to the Registrant's Report on Form 10-K filed February 24, 2009).

10.26 Form of Indemnification Agreement between the Registrant and each of its officers and directors (Incorporated by reference to Exhibit 10.1 to the Registrant's Report on Form 10-Q filed on May 7, 2004).

10.27 Deed of Office Lease by and between GLL L-Street 1331, LLC and CoStar Realty Information, Inc., dated February 18, 2011, and made effective as of June 1, 2010 (Incorporated by reference to Exhibit 10.1 to the Registrant's Report on form 10-Q filed on April 29, 2011).

10.28 Securities Purchase Agreement, dated as of September 11, 2017, among CoStar Realty Information, Inc., CoStar Group, Inc., LTM Company Dominion, LLC, Dominion Enterprises, and Landmark Media Enterprises, LLC (Incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on September 13, 2017).



Exhibit No.	Description
<u>10.29</u>	Amendment and Restatement Agreement, dated as of October 19, 2017, by and among CoStar Group, Inc., CoStar Realty Information, Inc., the Lenders party thereto and JPMorgan Chase Bank, N.A., as Administrative Agent (Incorporated by referenced to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on October 25, 2017).
<u>21.1</u>	Subsidiaries of the Registrant (filed herewith).
<u>23.1</u>	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm (filed herewith).
<u>31.1</u>	Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith).
<u>31.2</u>	Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith).
<u>32.1</u>	Certification of Principal Executive Officer pursuant to 18 U.S.C. Sec. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith).
<u>32.2</u>	Certification of Principal Financial Officer pursuant to 18 U.S.C. Sec. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith).
101	The following materials from CoStar Group, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018, formatted in XBRL (eXtensible Business Reporting Language): (i) Consolidated Statements of Operations for the years ended December 31, 2018, 2017 and 2016, respectively; (ii) Consolidated Statements of Comprehensive Income for the years ended December 31, 2018, 2017 and 2016, respectively; (iii) Consolidated Balance Sheets at December 31, 2018 and December 31, 2017, respectively; (iv) Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2018, 2017 and 2016, respectively; (v) Consolidated Statements of Cash Flows for the years ended December 31, 2018, 2017 and 2016, respectively; (vi) Notes to the Consolidated Financial Statements that have been detail tagged; and (vii) Schedule II – Valuation and Qualifying Accounts (submitted electronically with this report).

\* Management Contract or Compensatory Plan or Arrangement.

Item 16. Form 10-K Summary

None.

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SIGNATURES

Pursuant to the requirements of Section 13 of the Securities Act of 1934, as amended, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Washington, District of Columbia, on the 28<sup>th</sup> day of February 2019.

COSTAR GROUP, INC.

By: /s/ Andrew C. Florance  
Andrew C. Florance  
President and Chief Executive Officer

KNOW ALL PERSONS BY THESE PRESENTS, that each individual whose signature appears below constitutes and appoints Andrew C. Florance and Scott T. Wheeler, and each of them individually, as their true and lawful attorneys-in-fact and agents, with full power of substitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this report, and to file the same, with all exhibits thereto and to all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, herein by ratifying and confirming all that said attorneys-in-fact and agents or any of them, or his or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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Pursuant to the requirements of the Securities Act of 1934, as amended, this report has been signed by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Capacity	Date
/s/ Michael R. Klein Michael R. Klein	Chairman of the Board	February 28, 2019
/s/ Andrew C. Florance Andrew C. Florance	Chief Executive Officer and President and a Director (Principal Executive Officer)	February 28, 2019
/s/ Scott T. Wheeler Scott T. Wheeler	Chief Financial Officer (Principal Financial and Accounting Officer)	February 28, 2019
/s/ Michael J. Glosserman Michael J. Glosserman	Director	February 28, 2019
/s/ Warren H. Haber Warren H. Haber	Director	February 26, 2019
/s/ John W. Hill John W. Hill	Director	February 28, 2019
/s/ Laura Cox Kaplan Laura Cox Kaplan	Director	February 28, 2019
/s/ Christopher J. Nassetta Christopher J. Nassetta	Director	February 25, 2019
/s/ David J. Steinberg David J. Steinberg	Director	February 25, 2019

COSTAR GROUP, INC.

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of CoStar Group, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of CoStar Group, Inc. (the Company) as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes and the financial statement schedule listed in the Index at Item 15(a)(2) (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the consolidated financial position of the Company at December 31, 2018 and 2017, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 28, 2019 expressed an unqualified opinion thereon.

Adoption of ASU No. 2014-09

As discussed in Note 2 to the consolidated financial statements, the Company changed its method for recognizing revenue in 2018 due to the adoption of Accounting Standards Update (ASU) No. 2014-09, Revenue from Contracts with Customers (Topic 606), and the related amendments.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 1994.

Tysons, Virginia  
February 28, 2019

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of CoStar Group, Inc.

Opinion on Internal Control over Financial Reporting

We have audited CoStar Group, Inc.'s internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, CoStar Group, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on the COSO criteria.

As indicated in the accompanying Management's Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of ForRent, Realla Ltd. and Cozy Services, Ltd. related to accounts receivable and revenues, which are included in the 2018 consolidated financial statements of CoStar Group, Inc. and constituted less than 1% of total assets as of December 31, 2018 and less than 4% of revenues for the year then ended. Our audit of internal control over financial reporting of CoStar Group, Inc. did not include an evaluation of the internal control over financial reporting of ForRent, Realla Ltd. and Cozy Services, Ltd.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of CoStar Group, Inc. as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2018 and the related notes and the financial statement schedule listed in the Index at Item 15(a)(2) (Collectively referred to as the "financial statements") of CoStar Group, Inc. and our report dated February 28, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB. We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.



#### Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Tysons, Virginia  
February 28, 2019

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COSTAR GROUP, INC.  
CONSOLIDATED STATEMENTS OF OPERATIONS  
(in thousands, except per share data)

	Year Ended December 31,		
	2018	2017	2016
Revenues	\$1,191,832	\$965,230	\$837,630
Cost of revenues	269,933	220,403	173,814
Gross profit	921,899	744,827	663,816
Operating expenses:			
Selling and marketing (excluding customer base amortization)	359,858	318,362	296,483
Software development	100,937	88,850	76,400
General and administrative	156,659	146,128	123,297
Customer base amortization	30,881	17,671	22,731
	648,335	571,011	518,911
Income from operations	273,564	173,816	144,905
Interest and other income	13,281	4,044	1,773
Interest and other expense	(2,830)	(9,014)	(10,016)
Loss on debt extinguishment	—	(3,788)	—
Income before income taxes	284,015	165,058	136,662
Income tax expense	45,681	42,363	51,591
Net income	\$238,334	\$122,695	\$85,071
Net income per share — basic	\$6.61	\$3.70	\$2.64
Net income per share — diluted	\$6.54	\$3.66	\$2.62
Weighted average outstanding shares — basic	36,058	33,200	32,167
Weighted average outstanding shares — diluted	36,448	33,559	32,436

See accompanying notes.

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COSTAR GROUP, INC.  
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME  
(in thousands)

	Year Ended December 31,		
	2018	2017	2016
Net income	\$238,334	\$122,695	\$85,071
Other comprehensive (loss) income, net of tax			
Foreign currency translation adjustment	(2,668 )	3,901	(5,032 )
Net decrease in unrealized loss on investments	—	118	395
Reclassification adjustment for realized gains on investments included in net income	—	—	(808 )
Total other comprehensive (loss) income	(2,668 )	4,019	(5,445 )
Total comprehensive income	\$235,666	\$126,714	\$79,626

See accompanying notes.

COSTAR GROUP, INC.  
CONSOLIDATED BALANCE SHEETS  
(in thousands, except per share data)

	December 31,	
	2018	2017
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$1,100,416	\$1,211,463
Accounts receivable, less allowance of \$5,709 and \$6,469 as of December 31, 2018 and December 31, 2017, respectively	89,192	60,900
Prepaid expenses and other current assets	23,690	15,572
Total current assets	1,213,298	1,287,935
Long-term investments	10,070	10,070
Deferred income taxes, net	7,469	5,431
Property and equipment, net	83,303	84,496
Goodwill	1,611,535	1,283,457
Intangible assets, net	288,911	182,892
Deferred commission costs, net	76,031	—
Deposits and other assets	7,432	6,179
Income tax receivable	14,908	12,981
Total assets	\$3,312,957	\$2,873,441
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Accounts payable	6,327	9,262
Accrued wages and commissions	45,588	54,104
Accrued expenses	29,821	22,193
Deferred gain on the sale of building	2,523	2,523
Income taxes payable	14,288	8,166
Deferred rent	4,153	4,732
Deferred revenue	51,459	45,686
Total current liabilities	154,159	146,666
Deferred gain on the sale of building	13,669	16,192
Deferred rent	31,944	33,909
Deferred income taxes, net	69,857	12,070
Income taxes payable	17,386	13,354
Other long-term liabilities	4,000	—
Total liabilities	291,015	222,191
Commitments and contingencies (Note 12)		
Stockholders' equity:		
Preferred stock, \$0.01 par value; 2,000 shares authorized; none outstanding	—	—
Common stock, \$0.01 par value; 60,000 shares authorized; 36,446 and 36,107 issued and outstanding as of December 31, 2018 and 2017, respectively	364	361
Additional paid-in capital	2,419,812	2,339,253
Accumulated other comprehensive loss	(11,688	) (9,020 )
Retained earnings	613,454	320,656

Total stockholders' equity	3,021,942	2,651,250
Total liabilities and stockholders' equity	\$3,312,957	\$2,873,441

See accompanying notes.

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## COSTAR GROUP, INC.

## CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY

(in thousands)

	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Retained Earnings	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2015	32,509	\$ 325	\$ 1,440,321	\$ (7,594)	\$ 110,728	\$ 1,543,780
Net income	—	—	—	—	85,071	85,071
Other comprehensive loss	—	—	—	(5,445)	—	(5,445)
Exercise of stock options	29	—	3,303	—	—	3,303
Restricted stock grants	195	2	(2)	—	—	—
Restricted stock grants surrendered	(142)	(1)	(16,423)	—	—	(16,424)
Stock-based compensation expense	—	—	36,388	—	—	36,388
Employee stock purchase plan	15	—	2,842	—	—	2,842
Excess tax benefit from stock-based compensation	—	—	4,698	—	—	4,698
Balance at December 31, 2016	32,606	326	1,471,127	(13,039)	195,799	1,654,213
Cumulative effect of adoption of new accounting standard	—	—	—	—	2,162	—
Net income	—	—	—	—	122,695	122,695
Other comprehensive income	—	—	—	4,019	—	4,019
Exercise of stock options	82	1	6,796	—	—	6,797
Restricted stock grants	187	2	(2)	—	—	—
Restricted stock grants surrendered	(99)	(1)	(14,901)	—	—	(14,902)
Stock-based compensation expense	—	—	38,921	—	—	38,921
Stock issued for equity offering	3,317	33	833,878	—	—	833,911
Employee stock purchase plan	14	—	3,434	—	—	3,434
Balance at December 31, 2017	36,107	361	2,339,253	(9,020)	320,656	2,651,250
Cumulative effect of adoption of new accounting standard, net of tax	—	—	—	—	54,464	54,464
Balance at January 1, 2018	36,107	361	2,339,253	(9,020)	375,120	2,705,714
Net income	—	—	—	—	238,334	238,334
Other comprehensive loss	—	—	—	(2,668)	—	(2,668)
Exercise of stock options	177	2	21,991	—	—	21,993
Restricted stock grants	160	1	(1)	—	—	—
Restricted stock grants surrendered	(116)	(1)	(24,326)	—	—	(24,327)
Stock-based compensation expense	—	—	40,889	—	—	40,889
Employee stock purchase plan	15	—	5,641	—	—	5,641
Stock issued for acquisitions	103	1	36,365	—	—	36,366
Balance at December 31, 2018	36,446	\$ 364	\$ 2,419,812	\$ (11,688)	\$ 613,454	\$ 3,021,942

See accompanying notes.

COSTAR GROUP, INC.  
CONSOLIDATED STATEMENTS OF CASH FLOWS  
(in thousands)

	Year Ended December 31,		
	2018	2017	2016
<b>Operating activities:</b>			
Net income	\$238,334	\$122,695	\$85,071
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	77,743	63,643	70,165
Amortization of deferred commissions costs	48,313	—	—
Amortization of debt issuance costs	876	2,303	3,227
Loss on extinguishment of debt	—	3,788	—
Impairment loss	—	—	23
Loss on disposal of property and equipment	73	129	839
Realized gain on investments	—	—	(808 )
Stock-based compensation expense	41,214	39,030	36,349
Deferred income taxes, net	3,666	(2,903 )	15,635
Bad debt expense	6,542	5,690	7,358
Changes in operating assets and liabilities, net of acquisitions:			
Accounts receivable	(27,819 )	(17,524 )	(16,044 )
Prepaid expenses and other current assets	(1,651 )	(3,672 )	(1,157 )
Deferred commissions	(53,497 )	—	—
Income tax receivable	(1,927 )	(12,981 )	—
Accounts payable and other liabilities	(14,132 )	11,525	(1,520 )
Income taxes payable	9,632	16,937	2,816
Deferred revenue	7,879	6,004	(2,070 )
Deposits and other assets	212	39	758
Net cash provided by operating activities	335,458	234,703	200,642
<b>Investing activities:</b>			
Proceeds from sale and settlement of investments	—	—	5,950
Purchases of property and equipment and other assets	(29,632 )	(24,499 )	(18,766 )
Cash paid for acquisitions, net of cash acquired	(418,369 )	(47,768 )	(10,443 )
Net cash used in investing activities	(448,001 )	(72,267 )	(23,259 )
<b>Financing activities:</b>			
Payments of long-term debt	—	(345,000 )	(20,000 )
Payments of debt issuance costs	—	(3,467 )	—
Repurchase of restricted stock to satisfy tax withholding obligations	(24,327 )	(14,902 )	(16,424 )
Proceeds from equity offering, net of transaction costs	—	833,911	—
Proceeds from exercise of stock options and employee stock purchase plan	27,071	9,888	5,861
Net cash provided by (used in) financing activities	2,744	480,430	(30,563 )
Effect of foreign currency exchange rates on cash and cash equivalents	(1,248 )	1,374	(1,415 )
Net (decrease) increase in cash and cash equivalents	(111,047 )	644,240	145,405
Cash and cash equivalents at beginning of year	1,211,463	567,223	421,818
Cash and cash equivalents at end of year	\$1,100,416	\$1,211,463	\$567,223





COSTAR GROUP, INC.  
 CONSOLIDATED STATEMENTS OF CASH FLOWS  
 (in thousands)

Supplemental cash flow disclosures:

Interest paid	\$1,421	\$6,445	\$6,712
Income taxes paid	35,980	41,283	34,132

Supplemental non-cash investing and financing activities:

Stock issued in connection with acquisition - ForRent	\$36,366	\$—	\$—
Consideration owed for acquisitions	1,534	—	—

See accompanying notes.

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COSTAR GROUP, INC.  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

December 31, 2018

## 1. ORGANIZATION

CoStar Group, Inc. (the “Company” or “CoStar”) provides information, analytics and online marketplace services to the commercial real estate and related business community through its comprehensive, proprietary database of commercial real estate information covering the United States (“U.S.”), the United Kingdom (“U.K.”), and parts of Canada, Spain, Germany and France. The Company provides online marketplaces for commercial real estate, apartment rentals, lands for sale and businesses for sale. The Company operates within two operating segments, North America and International, and its services are typically distributed to its clients under subscription-based license agreements that renew automatically, a majority of which have a term of one year.

## 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

### Basis of Presentation

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation. Accounting policies are consistent for each operating segment.

### Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles (“GAAP”) requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. On an ongoing basis, the Company evaluates its estimates and assumptions, including those related to revenue recognition, allowance for doubtful accounts, useful lives of property and equipment and intangible assets, recoverability of long-lived assets and intangible assets with definite lives, goodwill, income taxes, fair value of equity instruments, fair value of auction rate securities (“ARS”), accounting for business combinations, stock-based compensation and contingencies, among others. The Company bases these estimates on historical and anticipated results, trends, and various other assumptions that it believes are reasonable, including assumptions as to future events. These estimates form the basis for making judgments about the carrying values of assets and liabilities and recorded revenues and expenses. Actual results could differ from these estimates.

### Revenue Recognition

Subsequent to the Adoption of Accounting Standards Update (“ASU”) 2014-09, Revenue from Contracts with Customers, later codified as Accounting Standards Codification 606 (“ASC 606”), on January 1, 2018

The Company derives revenues primarily by (i) providing access to its proprietary database of commercial real estate information and (ii) providing online marketplaces for professional property management companies, property owners, brokers, and landlords, in each case typically through a fixed monthly fee for its subscription-based services. The Company's subscription-based services consist primarily of information, analytics and online marketplace services offered over the Internet to commercial real estate industry and related professionals. Subscription contract rates are based on the number of sites, number of users, organization size, the client’s business focus, geography, the number and types of services to which a client subscribes, the number of properties a client advertises and the prominence and placement of a client's advertised properties in the search results. A majority of the subscription-based

license agreements have a term of one year and renew automatically.

The Company analyzes contracts to determine the appropriate revenue recognition using the following steps: (i) identification of contracts with customers, (ii) identification of distinct performance obligations in the contract, (iii) determination of contract transaction price, (iv) allocation of contract transaction price to the performance obligations and (v) determination of revenue recognition based on timing of satisfaction of the performance obligation(s).

The Company recognizes revenues upon the satisfaction of its performance obligation(s) (upon transfer of control of promised services to its customers) in an amount that reflects the consideration to which it expects to be entitled to in exchange for those services. Revenues from subscription-based services are recognized on a straight-line basis over the term of the agreement.

The Company's contracts with customers often include promises to transfer multiple services. For these contracts, the Company accounts for individual performance obligations separately if they are distinct. Determining whether services are considered distinct performance obligations may require significant judgment. Judgment is required to determine the standalone selling price ("SSP")

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COSTAR GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

for each distinct performance obligation. In instances where SSP is not directly observable, such as when the Company does not sell the services separately, the Company determines the SSP using available information, including market conditions and other observable inputs.

Deferred revenue results from amounts billed in advance to customers or cash received from customers in advance of the sale of subscription licenses and is recognized over the term of the license agreement.

Contract assets represent a conditional right to consideration for satisfied performance obligations that become a receivable when the conditions are satisfied. Contract assets are generated when contractual billing schedules differ from revenue recognition timing.

Certain sales commissions are considered incremental and recoverable costs of obtaining a contract with a customer. Sales commissions incurred for obtaining new contracts are deferred and then amortized as selling and marketing expenses on a straight-line basis over a period of benefit that the Company has determined to be three years. The three-year amortization period was determined based on several factors, including the nature of the technology and proprietary data underlying the services being purchased, customer contract renewal rates and industry competition. Certain commission costs are not capitalized as they do not represent incremental costs of obtaining a contract. See Note 3 for further discussion on the impact of the adoption of ASC 606.

For details about the Company's revenue recognition policy prior to the adoption of ASC 606, refer to the Company's Annual Report on Form 10-K for the year ended December 31, 2017, filed with the Securities and Exchange Commission on February 23, 2018.

#### Cost of Revenues

Cost of revenues principally consists of salaries, benefits, bonuses, and stock-based compensation expenses for the Company's researchers who collect and analyze the commercial real estate data that is the basis for the Company's information, analytics and online marketplaces. Additionally, cost of revenues includes the cost of data from third-party data sources, credit card and other transaction fees relating to processing customer transactions, which are expensed as incurred, and the amortization of acquired trade names, technology and other intangible assets.

#### Foreign Currency Translation

The Company's functional currency in its foreign locations is the local currency. Assets and liabilities are translated into U.S. dollars using the exchange rates as of the balance sheet dates. Revenues, expenses, gains and losses are translated at the average exchange rates in effect during each period. Gains and losses resulting from translation are included in accumulated other comprehensive loss. Currency gains and losses on the translation of intercompany loans made to foreign subsidiaries that are of a long-term investment nature are also included in accumulated other comprehensive loss. Net gains or losses resulting from foreign currency exchange transactions are included in the consolidated statements of operations. There were no material gains or losses from foreign currency exchange transactions for the years ended December 31, 2018, 2017, and 2016.

#### Accumulated Other Comprehensive Loss

The components of accumulated other comprehensive loss were as follows (in thousands):

As of December 31,	
2018	2017

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Foreign currency translation adjustment	\$(10,958)	\$(8,290)
Net unrealized loss on investments, net of tax	(730 )	(730 )
Total accumulated other comprehensive loss	\$(11,688)	\$(9,020)

There were no amounts reclassified out of accumulated other comprehensive loss to the consolidated statements of operations for the years ended December 31, 2018 and December 31, 2017. The amount of realized gain from the redemption of available-for-sale securities reclassified out of accumulated other comprehensive loss to the consolidated statement of operations for the year ended December 31, 2016 was approximately \$0.8 million.

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COSTAR GROUP, INC.  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Advertising Costs

The Company expenses advertising costs as incurred. Advertising costs include e-commerce, television, radio, print and other media advertising. Advertising costs were approximately \$124 million, \$104 million and \$109 million for the years ended December 31, 2018, 2017, and 2016, respectively.

Income Taxes

Deferred income taxes result from temporary differences between the tax basis of assets and liabilities and the basis reported in the Company's consolidated financial statements. Deferred tax liabilities and assets are determined based on the difference between the financial statement and the tax basis of assets and liabilities using enacted rates in effect during the year in which the Company expects differences to reverse. Valuation allowances are provided against assets, including net operating losses, if the Company determines it is more likely than not that some portion or all of an asset may not be realized. Interest and penalties related to income tax matters are recognized in income tax expense. See Note 11 for additional information regarding income taxes.

Net Income Per Share

Net income per share is computed by dividing net income by the weighted average number of common shares outstanding during the period on a basic and diluted basis. The Company's potentially dilutive securities include stock options and restricted stock awards. Diluted net income per share considers the impact of potentially dilutive securities except in periods in which there is a net loss, as the inclusion of the potentially dilutive common shares would have an anti-dilutive effect. See Note 15 for additional information on the Company's calculation of net income per share.

Stock-Based Compensation

Equity instruments issued in exchange for services performed by officers, employees, and directors of the Company are accounted for using a fair-value based method and the fair value of such equity instruments is recognized as expense in the consolidated statements of operations.

Stock-based compensation expense is measured at the grant date of the stock-based awards that vest over set time periods based on their fair values, and is recognized on a straight-line basis over the vesting periods of the awards, net of an estimated forfeiture rate. For equity instruments that vest based on performance, the Company assesses the probability of the achievement of the performance conditions at the end of each reporting period, or more frequently based upon the occurrence of events that may change the probability of whether the performance conditions will be met. If the Company's initial estimates of the achievement of the performance conditions change, the related stock-based compensation expense and timing of recognition may fluctuate from period to period based on those estimates. For equity instruments that vest based on a performance condition and a market condition, the Company estimates the fair value of each equity instrument granted on the date of grant using a Monte-Carlo simulation model. This pricing model uses multiple simulations to evaluate the probability of achieving the market condition to calculate the fair value of the awards. Stock-based compensation expense is updated based on the expected achievement of the related performance conditions at the end of each reporting period. If the performance conditions are not met, no stock-based compensation expense will be recognized, and any previously recognized stock-based compensation expense will be reversed.

Stock-based compensation expense for stock options and restricted stock awards issued under equity incentive plans and stock purchases under the Employee Stock Purchase Plan ("ESPP") included in the Company's results of operations were as follows (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Cost of revenues <sup>(1)</sup>	\$7,688	\$4,971	\$5,495
Selling and marketing (excluding customer base amortization)	6,881	7,086	6,634
Software development	7,454	7,071	6,546
General and administrative	20,695	19,902	17,674
Total stock-based compensation	\$42,718	\$39,030	\$36,349

<sup>(1)</sup> Includes \$1.5 million of expense related to the cash settlement of stock options in connection with the acquisition of Cozy Services, Ltd. See Note 4 for details of the acquisition.

COSTAR GROUP, INC.  
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### Cash and Cash Equivalents

The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents. Cash equivalents as of December 31, 2018 and 2017 consisted of money market funds.

### Investments

The Company determines the appropriate classification of debt and equity investments at the time of purchase and re-evaluates such designation as of each balance sheet date. The Company's investments consist of long-term variable rate debt instruments with an auction reset feature, referred to as auction rate securities, and are classified as available-for-sale. The Company's auction rate security investments are carried at fair value and any changes in unrealized holding gains and losses, net of the related tax effect, are excluded from earnings and are reported as a separate component of accumulated other comprehensive loss in stockholders' equity until realized. A decline in market value of any investment below cost that is deemed to be other-than-temporary results in a reduction in carrying amount to fair value. The impairment is charged to earnings and a new cost basis for the security is established. Dividend and interest income are recognized when earned.

### Concentration of Credit Risk and Financial Instruments

The Company performs ongoing assessments of its customers' financial conditions and generally does not require that its customers' obligations to the Company be secured. The Company maintains reserves for doubtful accounts, which have historically been immaterial to the Company's consolidated financial statements. Further, the large size of the Company's customer base creates a lack of dependence on any individual customer that mitigates the risk of nonpayment of the Company's accounts receivable. No single customer accounted for more than 5% of the Company's revenues for each of the years ended December 31, 2018, 2017, and 2016. The carrying amount of the accounts receivable approximates the net realizable value.

The Company holds cash at major financial institutions that often exceed Federal Deposit Insurance Corporation insured limits. The Company manages its credit risk associated with cash concentrations by concentrating its cash deposits in high quality financial institutions and by periodically evaluating the credit quality of the primary financial institutions holding such deposits. The carrying value of cash approximates fair value. Historically, the Company has not experienced any losses due to such cash concentrations.

### Accounts Receivable, Net of Allowance for Doubtful Accounts

Accounts receivable are recorded at the invoiced amount net of credits due. Accounts receivable payment terms vary and amounts due from customers are stated in the financial statements net of an allowance for doubtful accounts. When evaluating the adequacy of the allowance for doubtful accounts, the Company analyzes historical collection experience, changes in customer payment profiles and the aging of receivable balances, as well as current economic conditions, all of which may affect a customer's ability to pay.

### Property and Equipment, Net

Property and equipment are stated at cost, net of accumulated depreciation and amortization. All repairs and maintenance costs are expensed as incurred. Depreciation and amortization are calculated on a straight-line basis over the following estimated useful lives of the assets:

Leasehold improvements	Shorter of lease term or useful life
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Furniture and office equipment	Five to ten years
Vehicles	Five to ten years
Computer hardware and software	Three to five years

Qualifying internal-use software costs incurred during the application development stage, which consist primarily of internal product development costs, outside services and purchased software license costs are capitalized and amortized over the estimated useful life of the asset. All other costs are expensed as incurred.

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COSTAR GROUP, INC.  
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### Goodwill and Intangible Assets

Goodwill represents the future economic benefits arising from a business combination and is calculated as the excess of the purchase consideration paid in a business combination over the fair value of assets acquired. Goodwill is not amortized, but instead is assigned to each of the Company's reporting units and tested for impairment at least annually or when events and circumstances indicate that the fair value of a reporting unit may be below its carrying value. The Company may first assess qualitative factors to evaluate whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount or elect to bypass such assessment. If it is determined that it is more likely than not that the fair value of a reporting unit is less than its carrying value, or the Company elects to bypass such assessment, the Company performs a quantitative test that requires the determination of the fair value of each reporting unit. The estimate of the fair value of each reporting unit is based on a projected discounted cash flow model that includes significant assumptions and estimates including the discount rate, growth rate and future financial performance. Assumptions about the discount rate are based on a weighted average cost of capital for comparable companies. Assumptions about the growth rate and future financial performance of a reporting unit are based on the Company's forecasts, business plans, economic projections and anticipated future cash flows. The fair value of each reporting unit is compared to the carrying amount of the reporting unit. If the carrying value of the reporting unit exceeds the fair value, then an impairment loss is recognized for the difference.

Acquired technology, trade names and other intangible assets, and customer base assets are related to the Company's acquisitions (see Notes 8 and 9). Acquired technology is amortized on a straight-line basis over periods ranging from two years to eight years. Acquired trade names and other intangible assets are amortized on a straight-line basis over periods ranging from one year to fifteen years. Acquired intangible assets characterized as customer base assets consist of acquired customer contracts and the related customer relationships and are amortized over periods ranging from five years to thirteen years. Acquired customer bases are amortized on an accelerated or straight-line basis depending on the expected economic benefit of the intangible asset.

### Long-Lived Assets

Long-lived assets, such as property and equipment, and purchased intangibles subject to amortization, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset or asset group. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized in the amount by which the carrying amount of the asset exceeds the fair value of the asset.

Assets to be disposed of are separately presented in the balance sheet and reported at the lower of the carrying amount or fair value less costs to sell, and are no longer depreciated. The assets and liabilities of a disposal group classified as held for sale are presented separately in the appropriate asset and liability sections of the balance sheet.

### Debt Issuance Costs

Costs incurred in connection with the issuance of long-term debt are deferred and amortized as interest expense over the term of the related debt using the effective interest method for term debt and on a straight-line basis for revolving debt. To the extent that debt is outstanding, these amounts are reflected in the consolidated balance sheets as direct deductions from a combination of the current and long-term portions of debt for term debt and as current and long-term assets for costs related to revolving debt. Upon a refinancing or amendment, previously capitalized debt issuance costs are expensed and included in loss on extinguishment of debt if the Company determines that there has been a substantial modification of the related debt. If the Company determines that there has not been a substantial

modification of the related debt, any previously capitalized debt issuance costs are amortized as interest expense over the term of the new debt instrument. See Note 10 for additional information on the Company's long-term debt and related debt issuance costs.

#### Business Combinations

The Company allocates the purchase consideration to the tangible assets acquired, liabilities assumed and intangible assets acquired based on their estimated fair values. The purchase price is determined based on the fair value of the assets transferred, liabilities incurred and equity interests issued, after considering any transactions that are separate from the business combination. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is recorded as goodwill. Such valuations require management to make significant estimates and assumptions, especially with respect to intangible assets and contingent liabilities. Significant estimates in valuing certain intangible assets include, but are not limited to, future expected cash flows from acquired customer bases, acquired technology and acquired trade names, useful lives, royalty rates and

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COSTAR GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

discount rates. Any adjustments to provisional amounts that are identified during the measurement period are recorded in the reporting period in which the adjustment amounts are determined. Upon the conclusion of the measurement period, any subsequent adjustments are recorded to earnings.

For a given acquisition, the Company may identify certain pre-acquisition contingencies as of the acquisition date and may extend its review and evaluation of these pre-acquisition contingencies throughout the measurement period in order to obtain sufficient information to assess whether the Company includes these contingencies as a part of the fair value estimates of assets acquired and liabilities assumed and, if so, to determine their estimated amounts.

If the Company cannot reasonably determine the fair value of a pre-acquisition contingency (non-income tax related) by the end of the measurement period, which is generally the case given the nature of such matters, the Company will recognize an asset or a liability for such pre-acquisition contingency if: (i) it is probable that an asset existed or a liability had been assumed at the acquisition date and (ii) the amount of the asset or liability can be reasonably estimated. Subsequent to the measurement period, changes in the Company's estimates of such contingencies will affect earnings and could have a material effect on its results of operations and financial position.

In addition, uncertain tax positions and tax related valuation allowances assumed in connection with a business combination are initially estimated as of the acquisition date. The Company reevaluates these items based upon facts and circumstances that existed as of the acquisition date, with any adjustments to its preliminary estimates being recorded to goodwill provided that the Company is within the measurement period. Subsequent to the measurement period, changes to these uncertain tax positions and tax related valuation allowances will affect the Company's provision for income taxes in its consolidated statements of operations and comprehensive income and could have a material impact on its results of operations and financial position.

#### Recent Accounting Pronouncements

#### Recently Adopted Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ("FASB") and International Accounting Standards Board ("IASB") jointly issued a new revenue recognition standard, Accounting Standards Update ("ASU") 2014-09, Revenue from Contracts with Customers, later codified as Accounting Standards Codification ("ASC") 606 ("ASC 606"), that is designed to improve financial reporting by creating common recognition guidance for GAAP and International Financial Reporting Standards ("IFRS"). This guidance provides a robust framework for addressing revenue issues, improves the comparability of revenue recognition practices across industries, provides useful information to users of financial statements through improved disclosure requirements and simplifies the presentation of financial statements. The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those services.

On January 1, 2018, the Company adopted ASC 606, using the modified retrospective method. Results for reporting periods beginning subsequent to December 31, 2017 are presented under ASC 606, while prior period amounts are not adjusted and continue to be reported in accordance with the Company's historical accounting policies prior to adoption. In adopting the guidance, the Company applied the guidance to all customer contracts and used several available practical expedients including assessing contracts with similar terms and conditions on a "portfolio" basis and not including contracts with a duration of one year or less in the unsatisfied performance obligations disclosure.



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The Company recorded a net cumulative increase to beginning retained earnings of \$54 million. The Company adjusted the condensed consolidated financial statements from amounts previously reported due to the adoption of ASC 606. Select condensed consolidated balance sheet line items which were adjusted upon adoption were as follows (in thousands):

	As of December 31, 2017	ASC 606 Adjustments	As of January 1, 2018
<b>Assets</b>			
Accounts receivable, less allowance for doubtful accounts	\$ 60,900	\$ (1,867 )	\$ 59,033
Prepaid expenses and other current assets	15,572	1,867	17,439
Deferred commissions costs, net	—	71,118	71,118
<b>Liabilities</b>			
Deferred revenue	\$ 45,686	\$ (1,716 )	\$ 43,970
Deferred income taxes, net	12,070	18,370	30,440
Retained earnings	320,656	54,464	375,120

The impact of the adoption of ASC 606 on the condensed financial statements for the period ended December 31, 2018 was as follows (in thousands):

	As of December 31, 2018 without adoption of ASC 606	ASC 606 Adjustments	As Reported as of December 31, 2018
<b>Assets</b>			
Accounts receivable, less allowance for doubtful accounts	\$ 91,122	\$ (1,930 )	\$ 89,192
Prepaid expenses and other current assets	21,760	1,930	23,690
Deferred commissions costs, net	—	76,031	76,031
<b>Liabilities</b>			
Deferred revenue	\$ 57,284	\$ (5,825 )	\$ 51,459
Deferred income taxes, net	49,147	20,710	69,857
Retained earnings	552,308	61,146	613,454

If the Company had not adopted ASC 606, revenue recognized would have been \$4 million lower and selling and marketing expense would have been \$5 million higher for the year ended December 31, 2018. The impact on net income and basic and diluted earnings per share for the year ended December 31, 2018 would have been a decrease of approximately \$7 million or \$0.19 per share, respectively.

In August 2016, the FASB issued ASU 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments, which is designed to reduce the existing diversity in how certain cash receipts and cash payments are presented and classified in the consolidated statements of cash flows. This guidance is effective on a retrospective basis for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. On January 1, 2018, the Company adopted this guidance and the adoption did not have a material impact on the Company's consolidated financial statements and related disclosures.

In January 2017, the FASB issued ASU 2017-01, Business Combinations (Topic 805): Clarifying the Definition of a Business, which is designed to clarify the definition of a business to assist entities with evaluating whether

transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The guidance indicates that when substantially all of the fair value of the gross assets acquired (or disposed of) is concentrated in a single identifiable asset or a group of similar identifiable assets, the set of assets is not a business. This guidance is effective on a prospective basis for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. On January 1, 2018, the Company adopted this guidance and the adoption did not have a material impact on the Company's consolidated financial statements and related disclosures.

In May 2017, the FASB issued ASU 2017-09, Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting, which is designed to reduce the existing diversity and complexity in the accounting for changes to terms or conditions

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COSTAR GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

of a share-based payment award. This guidance clarifies that an entity will not apply modification accounting to a share-based payment award if all of the following are the same immediately before and after the change: (i) the fair value of the award, (ii) the vesting conditions of the award, and (iii) the classification of the award as an equity instrument or liability instrument. This guidance is effective on a prospective basis for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. On January 1, 2018, the Company adopted this guidance and the adoption did not have a material impact on the Company's consolidated financial statements and related disclosures.

Recent Accounting Pronouncements Not Yet Adopted

In February 2016, the FASB issued ASU 2016-02, Leases ("ASC 842"), to increase transparency and comparability among organizations' accounting for leases. The guidance requires a company to recognize right-of-use assets and lease liabilities on the balance sheet, as well as to disclose key quantitative and qualitative information about leasing arrangements. This guidance is effective on a modified retrospective basis for reporting periods beginning after December 15, 2018, with early adoption permitted. As permitted by the guidance, the Company will elect to retain the original lease classification and historical accounting for initial direct costs for leases existing prior to the adoption date. Furthermore, the Company will not have to reassess contracts entered into prior to the adoption date for the existence of a lease. The Company will also elect not to restate prior periods for the impact of the adoption of the new standard and will instead recognize a cumulative-effect adjustment to beginning retained earnings as of January 1, 2019 for any prior period income statement effects identified.

The Company assessed the changes required to support the adoption of the new standard, as well as the quantitative impact this guidance will have on its financial statements and related disclosures. As a result, the Company expects that the adoption of this standard will result in the recognition of Right of Use Assets between \$100 million and \$120 million, as well as Lease Liabilities between \$140 million and \$160 million on its consolidated balance sheet, primarily as a result of recognizing assets and liabilities associated with existing office leases. Lastly, the Company expects to recognize a cumulative-effect adjustment to beginning retained earnings of \$12 million, net of tax, as of January 1, 2019 to recognize the remaining gain on the Company's outstanding deferred gain on the sale of building, pursuant to the guidance in ASC 842.

Beginning in 2019, the Company expects significant changes to its disclosed lease recognition policies and practices, as well as to other related financial statement disclosures due to the adoption of this standard. These revised disclosures will be made in the Company's first quarterly report in 2019.

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurements (subsequent to adoption of ASU 2018-13, Fair Value Measurement). The ASU was issued to eliminate certain disclosure requirements for fair value measurements, and add and modify other disclosure requirements, as part of its disclosure framework project, including additional requirements for public companies to disclose certain information about the significant unobservable inputs for Level 3 fair value measurements. This guidance is effective for fiscal years beginning after December 15, 2019 and for interim periods within those fiscal years. The Company is currently evaluating the impact this guidance will have on its financial statements and related disclosures.

In August 2018, the FASB issued ASU 2018-15, Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract. ASU 2018-15 requires a customer in a cloud computing arrangement that is a service contract to follow the internal-use software guidance in Accounting Standards Codification 350-40 to determine which implementation costs to defer and recognize as an asset. For public business entities, the guidance is effective for annual and interim periods beginning after December 15, 2019. The Company is currently evaluating the impact this



guidance will have on its consolidated financial statements and related disclosures.

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3. REVENUE FROM CONTRACTS WITH CUSTOMERS

Disaggregated Revenue

The Company provides information, analytics and online marketplaces to the commercial real estate industry and related professionals. The revenues by operating segment and type of service consist of the following (in thousands):

	Year Ended December 31,			2017		
	2018 North America	International	Total	North America	International	Total
Information and analytics						
CoStar Suite	\$ 519,661	\$ 25,534	\$ 545,195	\$ 440,534	\$ 22,651	\$ 463,185
Information services	58,708	8,916	67,624	64,503	8,115	72,618
Online marketplaces						
Multifamily	405,795	—	405,795	279,855	—	279,855
Commercial property and land	173,137	81	173,218	149,572	—	149,572
Total revenues	\$ 1,157,301	\$ 34,531	\$ 1,191,832	\$ 934,464	\$ 30,766	\$ 965,230

Deferred Revenue

Changes in deferred revenue for the period were as follows (in thousands):

Balance at December 31, 2017	\$ 45,686
Cumulative effect of adoption of ASC 606	(1,716 )
Balance at January 1, 2018	43,970
Revenue recognized in the current period from the amounts in the beginning balance	(43,121 )
New deferrals, net of amounts recognized in the current period	51,000
Effects of foreign currency	(390 )
Balance at December 31, 2018	\$ 51,459

Contract Assets

The Company had contract assets of \$2 million as of December 31, 2018 and January 1, 2018, which are generated when contractual billing schedules differ from revenue recognition timing. Contract assets represent a conditional right to consideration for satisfied performance obligations that becomes a receivable when the conditions are satisfied.

Commissions

The Company recognized \$48 million of amortization of deferred commissions included in selling and marketing expense during the year ended months ended December 31, 2018. The Company determined that no deferred commissions were impaired as of December 31, 2018.

Commissions expense activity for the year ended December 31, 2018 was as follows (in thousands):

	Year Ended December 31, 2018
Commissions incurred	\$ 72,899

Commissions capitalized in the current period	(53,497 )
Amortization of deferred commissions costs	48,313
Total commissions expense	\$ 67,715

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COSTAR GROUP, INC.  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Refer to Note 2 for the Company's policy on accounting for commissions.

#### Unsatisfied Performance Obligations

Remaining contract consideration for which revenue has not been recognized due to unsatisfied performance obligations was approximately \$193 million at December 31, 2018, which the Company expects to recognize over the next three years. This amount does not include contract consideration for contracts with a duration of one year or less.

#### 4. ACQUISITIONS

##### ForRent

On February 21, 2018 (the "Acquisition Date"), the Company acquired all of the issued and outstanding capital stock of DE Holdings, Inc., including its ForRent division ("ForRent"), a wholly owned subsidiary of Dominion Enterprises ("Seller"), for a purchase price of approximately \$376 million. The purchase price was comprised of approximately \$340 million in cash and 103,280 shares of Company common stock, valued at approximately \$36 million. ForRent's primary service is digital advertising provided through a network of four multifamily websites. The acquisition is expected to yield increased revenue, significant cost synergies and an improved competitive position in the industry. The Company applied the acquisition method to account for the ForRent transaction, which requires that assets acquired and liabilities assumed be recorded at their fair values as of the acquisition date.

The following table summarizes the amounts recorded for acquired assets and assumed liabilities recorded at their fair values as of the Acquisition Date (in thousands):

	Preliminary:	Measurement	Final:
	February	Period	February
	21, 2018	Adjustments	21, 2018
Cash and cash equivalents	\$ 59	\$ —	\$ 59
Accounts receivable	8,769	—	8,769
Indemnification asset	5,443	—	5,443
Goodwill	266,720	(125 )	266,595
Intangible assets	141,300	—	141,300
Deferred tax liabilities	(34,032 )	—	(34,032 )
Contingent sales tax liability	(6,260 )	—	(6,260 )
State uncertain income tax position liability	(2,047 )	—	(2,047 )
Other assets and liabilities	(3,453 )	(82 )	(3,535 )
Fair value of identifiable net assets acquired	\$ 376,499	\$ (207 )	\$ 376,292

The net assets of ForRent were recorded at their estimated fair values. In valuing acquired assets and assumed liabilities, fair value estimates were based primarily on future expected cash flows, market rate assumptions for contractual obligations and appropriate discount rates. Measurement period adjustments relate to the determination of working capital as of the Acquisition Date.

The acquired customer base for the acquisition is composed of acquired customer contracts and the related customer relationships, and has a weighted average estimated useful life of ten years. The acquired technology has an estimated useful life of three years. The acquired trade name has a weighted average estimated useful life of ten years. The acquired building photography has an estimated useful life of one year. Amortization of the acquired customer base is recognized on an accelerated basis related to the expected economic benefit of the intangible asset, while amortization of the acquired technology, acquired building photography and acquired trade names and other intangible assets is

recognized on a straight-line basis over their respective estimated useful lives. Goodwill recorded in connection with this acquisition is not amortized, but is subject to an annual impairment test. The \$267 million of goodwill recorded as part of the acquisition is associated with the Company's North America operating segment. \$8 million of the goodwill recognized is expected to be deductible for income tax purposes in future periods.

Goodwill is calculated as the excess of the consideration transferred over the net assets recognized and represents the future economic benefits arising from other assets acquired that could not be individually identified and separately recognized. Specifically, the goodwill recorded as part of the ForRent acquisition includes but is not limited to: (i) the expected synergies and other benefits

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COSTAR GROUP, INC.  
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that the Company believes will result from combining its operations with ForRent's operations; and (ii) any intangible assets that do not qualify for separate recognition, such as the assembled workforce.

Upon acquisition, the Company assessed the (i) probability of a contingent sales tax liability and (ii) a state uncertain income tax position liability due to apportionment factors, and recorded accruals of \$6 million and \$2 million, respectively. The Company could not determine the fair value for the pre-acquisition state sales tax liability and therefore estimated a liability in accordance with ASC 450, using a state-by-state assessment. The uncertain income tax position was determined in accordance with the provisions of ASC 740 and was recorded as part of the purchase price allocation. The Seller has provided an indemnity for tax liabilities related to periods prior to the acquisition. The Seller's indemnification for sales taxes in the state of Texas is limited to approximately \$2 million. The total indemnification asset established as of the acquisition date is \$5 million. \$1 million of the uncertain income tax position liability and related indemnification asset recognized as of the acquisition date were reversed during the year, upon expiration of the statute of limitations applicable to the uncertain income tax position.

As part of the ForRent acquisition, the Company incurred \$3 million of transaction costs. Additionally, the Company paid \$12 million cash into a cash escrow account for retention compensation for certain ForRent employees, payable if they remained employed by the Company for a defined six-month period following the acquisition or were earlier terminated without cause or resigned for good reason. In the event some or all of those employees were not entitled to their retention bonus, those funds would have been remitted to the Seller. The Company expensed the retention compensation as the services were performed in the post-combination period.

#### Other Acquisitions

On October 12, 2018, the Company acquired Realla Ltd. ("Realla"), the operator of a commercial property listings and data management platform in the U.K. for £12 million (\$15 million). The purchase agreement required an initial payment of £10 million (\$13 million), net of cash acquired, at the time of closing, and the remainder is due one year following the acquisition date. In connection with the acquisition, the Company recorded goodwill and intangible assets of £8 million (\$10 million) and £4 million (\$5 million), respectively. The net assets of Realla were recorded at their estimated fair value. The estimated fair values are preliminary, subject to the finalization of the Company's assessment of the fair value of certain acquired intangible assets, the final determination of net working capital as of the acquisition date and completion of the Company's assessment of certain tax matters.

On November 8, 2018, the Company acquired Cozy Services, Ltd. ("Cozy"), a leading provider of online rental solutions that provides a broad spectrum of services to both landlords and tenants, for \$65 million, net of cash acquired. As part of the acquisition, the Company recorded goodwill and intangible assets of \$53 million and \$11 million, respectively. The net assets of Cozy were recorded at their estimated fair value. The estimated fair values are preliminary, subject to the finalization of the Company's assessment of the fair value of certain acquired intangible assets, the final determination of net working capital as of the acquisition date and completion of the Company's assessment of certain tax matters.

#### Pro Forma Financial Information

The unaudited pro forma financial information presented below summarizes the combined results of operations for the Company and ForRent as though the companies were combined as of January 1, 2017. The impact of Realla and Cozy on the pro forma financial information was not material and therefore those acquisitions were not included. The unaudited pro forma financial information for all periods presented includes amortization charges from acquired intangible assets, retention compensation, as referenced above, and the related tax effects, along with certain other accounting effects, but excludes the impacts of any expected operational synergies. The unaudited pro forma financial

information as presented below is for informational purposes only and is not necessarily indicative of the results of operations that would have been achieved if the acquisition had taken place on January 1, 2017.

The unaudited pro forma financial information for the year ended months ended December 31, 2018 and 2017 combine the historical results of the Company for the year ended months ended December 31, 2018 and 2017, the historical results of ForRent for the period prior to the Acquisition Date, and the effects of the pro forma adjustments listed above.

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COSTAR GROUP, INC.  
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The unaudited pro forma financial information was as follows (in thousands, except per share data):

	Year Ended	
	December 31,	
	2018	2017
Revenue	\$1,205,584	\$1,067,742
Net income	\$251,196	\$103,000
Net income per share - basic	\$6.96	\$3.09
Net income per share - diluted	\$6.89	\$3.06

The Company began integrating the ForRent sales force and operations after the closing of the acquisition as part of its efforts to create operating synergies. As a result of these integration activities, it is impracticable to disclose revenue and earnings from ForRent from the Acquisition Date through December 31, 2018.

## 5. INVESTMENTS

The Company's investments consist of long-term variable rate debt instruments with an auction reset feature, referred to as auction rate securities ("ARS"), and are classified as available-for-sale and are carried at fair value.

Scheduled maturities of investments classified as available-for-sale as of December 31, 2018 are as follows (in thousands):

Maturity	Fair Value
Due in:	
2019	\$—
2020 — 2023	—
2024 — 2028	—
2029 and thereafter	10,070
Available-for-sale investments	\$10,070

The Company had no realized gains or losses on its investments during the years ended December 31, 2018, 2017 and 2016. Realized gains and losses from the sale of available-for-sale securities are determined on a specific-identification basis.

As of December 31, 2018, the amortized cost basis and fair value of investments classified as available-for-sale were as follows (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Auction rate securities	\$ 10,800	\$	—\$ (730 )	\$10,070
Available-for-sale investments	\$ 10,800	\$	—\$ (730 )	\$10,070

As of December 31, 2017, the amortized cost basis and fair value of investments classified as available-for-sale were as follows (in thousands):

	Amortized Cost	Gross Unrealized	Gross Unrealized	Fair Value
--	----------------	------------------	------------------	------------



		Gains	Losses	
Auction rate securities	\$ 10,800	\$	—\$ (730 )	\$ 10,070
Available-for-sale investments	\$ 10,800	\$	—\$ (730 )	\$ 10,070

The unrealized losses on the Company's investments as of December 31, 2018 and 2017 were generated primarily from changes in interest rates and ARS that failed to settle at auction, due to adverse conditions in the global credit markets. The losses

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COSTAR GROUP, INC.  
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are considered temporary, as the contractual terms of these investments do not permit the issuer to settle the security at a price less than the amortized cost of the investment. Because the Company does not intend to sell these instruments and it is not more likely than not that the Company will be required to sell these instruments prior to anticipated recovery, which may be at maturity, the Company does not consider these investments to be other-than-temporarily impaired as of December 31, 2018 and 2017. See Note 6 for further discussion of the fair value of the Company's financial assets.

The components of the Company's investments in an unrealized loss position for twelve months or longer were as follows (in thousands):

	December 31, 2018		2017	
	Aggregate Fair Value	Gross Unrealized Losses	Aggregate Fair Value	Gross Unrealized Losses
Auction rate securities	\$10,070	\$ (730 )	\$10,070	\$ (730 )
Investments in an unrealized loss position	\$10,070	\$ (730 )	\$10,070	\$ (730 )

The Company did not have any investments in an unrealized loss position for less than twelve months as of December 31, 2018 and 2017, respectively.

## 6. FAIR VALUE

Fair value is defined as the price that would be received in the sale of an asset or paid to transfer a liability in an orderly transaction between market participants. There is a three-tier fair value hierarchy, which categorizes the inputs used in measuring fair value. These tiers include: Level 1, defined as observable inputs such as quoted prices in active markets for identical assets or liabilities; Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable; and Level 3, defined as unobservable inputs for which little or no market data exists, therefore requiring an entity to develop its own assumptions.

The following table represents the Company's fair value hierarchy for its financial assets (cash equivalents and investments) measured at fair value on a recurring basis as of December 31, 2018 (in thousands):

	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds	\$590,567	\$ —	\$ —	\$590,567
Auction rate securities	—	—	10,070	10,070
Total assets measured at fair value	\$590,567	\$ —	-\$10,070	\$600,637

The following table represents the Company's fair value hierarchy for its financial assets (cash equivalents and investments) measured at fair value on a recurring basis as of December 31, 2017 (in thousands):

	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds	\$586,084	\$ —	\$ —	\$586,084

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Auction rate securities	—	—	10,070	10,070
Total assets measured at fair value	\$586,084	\$	-\$10,070	\$596,154

The carrying value of accounts receivable, accounts payable and accrued expenses approximates fair value.

The Company's Level 3 assets consist of ARS, whose underlying assets are primarily student loan securities supported by guarantees from the Federal Family Education Loan Program ("FFELP") of the U.S. Department of Education.

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The following table summarizes changes in fair value of the Company's Level 3 assets from December 31, 2016 to December 31, 2018 (in thousands):

	Auction Rate Securities
Balance at December 31, 2016	\$ 9,952
Decrease in unrealized loss included in accumulated other comprehensive loss	118
Balance at December 31, 2017	10,070
Decrease in unrealized loss included in accumulated other comprehensive loss	—
Settlements	—
Balance at December 31, 2018	\$ 10,070

ARS are variable rate debt instruments whose interest rates are reset approximately every 28 days. The underlying securities have contractual maturities greater than twenty years. The ARS are recorded at fair value.

As of December 31, 2018, the Company held ARS with \$11 million par value, all of which failed to settle at auction. The majority of these investments are of high credit quality and are primarily student loan securities supported by guarantees from the FFELP of the U.S. Department of Education. The Company may not be able to liquidate and fully recover the carrying value of the ARS in the near term. As a result, these securities are classified as long-term investments in the Company's consolidated balance sheet as of December 31, 2018. See Note 5 for further discussion of the scheduled maturities of investments classified as available-for-sale.

While the Company continues to earn interest on its ARS investments at the contractual rate, these investments are not currently actively trading and therefore do not currently have a readily determinable market value. The estimated fair value of the ARS no longer approximates par value. The Company used a discounted cash flow model to determine the estimated fair value of its investment in ARS as of December 31, 2018. The assumptions used in preparing the discounted cash flow model include estimates for interest rates, credit spreads, timing and amount of contractual cash flows, liquidity risk premiums, expected holding periods and default risk. The Company updates the discounted cash flow model on a quarterly basis to reflect any changes in the assumptions used in the model and settlements of ARS investments that occurred during the period.

The only significant unobservable input in the discounted cash flow model is the discount rate. The discount rate used represents the Company's estimate of the yield expected by a market participant from the ARS investments. The weighted average discount rate used in the discounted cash flow models as of December 31, 2018 and 2017 was approximately 6%. Selecting another discount rate within the range used in the discounted cash flow model would not result in a significant change to the fair value of the ARS.

Based on this assessment of fair value, as of December 31, 2018, the Company determined there was no decline in the fair value of its ARS investments. In addition, the ARS are of high credit quality, if the issuers are unable to successfully close future auctions and/or their credit ratings deteriorate, the Company may be required to record additional unrealized losses in accumulated other comprehensive loss or an other-than-temporary impairment charge to earnings on these investments.

## 7. PROPERTY AND EQUIPMENT

Property and equipment consists of the following (in thousands):

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	December 31,	
	2018	2017
Leasehold improvements	\$65,332	\$59,447
Furniture, office equipment and vehicles	53,020	52,163
Computer hardware and software	74,742	71,281
Property and equipment, gross	193,094	182,891
Accumulated depreciation and amortization	(109,791)	(98,395 )
Property and equipment, net	\$83,303	\$84,496

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Depreciation expense for property and equipment was approximately \$26 million, \$26 million and \$24 million, for the years ended December 31, 2018, 2017 and 2016, respectively.

## 8. GOODWILL

The changes in the carrying amount of goodwill by operating segment consist of the following (in thousands):

	North America	International	Total
Goodwill, December 31, 2016	\$ 1,227,777	\$ 27,089	\$ 1,254,866
Acquisition	25,717	—	25,717
Effect of foreign currency translation	—	2,874	2,874
Goodwill, December 31, 2017	1,253,494	29,963	1,283,457
Acquisitions	319,594	10,344	329,938
Effect of foreign currency translation	—	(1,860)	(1,860)
Goodwill, December 31, 2018	\$ 1,573,088	\$ 38,447	\$ 1,611,535

The Company recorded goodwill of approximately \$8 million in connection with the January 31, 2017 acquisition of Koa Lei, Inc. (doing business as Westside Rentals<sup>®</sup> and now known as Westside Rentals, LLC), an online marketplace specializing in Southern California real estate rentals, and its affiliated entity Westside Credit Services, LLC, a provider of credit checks and tenant screening for landlords in the Southern California real estate rental market. The Company recorded goodwill of approximately \$15 million in connection with the May 10, 2017 acquisition of certain assets and assumption of certain liabilities from Datasphere Technologies, Inc., in each case, related to the LandWatch.com<sup>®</sup> business (collectively referred to as “LandWatch”), a leading listing site dedicated to land and rural properties. The Company recorded goodwill of approximately \$2 million in connection with the July 18, 2017 acquisition of The Screening Pros, LLC, an online apartment leasing platform that includes tenant screening services, rental applications and payments processing and lease renewals.

The Company recorded goodwill of approximately \$267 million in connection with the February 21, 2018 acquisition of ForRent, a digital advertising service provided through a network of four multifamily websites. The Company recorded goodwill of approximately \$10 million in connection with the October 12, 2018 acquisition of Realla, the operator of a commercial property listings and data management platform in the U.K., including a free-to-list search engine for commercial property listings. The company recorded goodwill of approximately \$53 million in connection with the November 8, 2018 acquisition of Cozy, a leading provider of online rental solutions that provides a broad spectrum of services to both landlords and tenants, including property listings, rent estimates, rental applications, tenant screening, online rent payments and expense tracking.

The total amount of goodwill that is expected to be deductible for tax purposes is approximately \$16 million as of December 31, 2018.

No impairments of the Company's goodwill were recognized during the years ended December 31, 2018, 2017 and 2016.

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9. INTANGIBLE ASSETS

Intangible assets consist of the following (in thousands, except amortization period data):

	December 31,		Weighted- Average Amortization Period (in years)
	2018	2017	
Capitalized product development cost	\$2,173	\$2,275	4
Accumulated amortization	(2,173 )	(2,262 )	
Capitalized product development cost, net	—	13	
Building photography	9,035	18,739	2
Accumulated amortization	(8,809 )	(18,212 )	
Building photography, net	226	527	
Acquired technology	103,128	83,469	4
Accumulated amortization	(85,344 )	(79,188 )	
Acquired technology, net	17,784	4,281	
Acquired customer base	339,574	225,879	10
Accumulated amortization	(199,405 )	(169,157 )	
Acquired customer base, net	140,169	56,722	
Acquired trade names and other intangible assets	190,717	167,718	12
Accumulated amortization	(59,985 )	(46,369 )	
Acquired trade names and other intangible assets, net	130,732	121,349	
Intangible assets, net	\$288,911	\$182,892	

Amortization expense for intangible assets was approximately \$52 million, \$37 million and \$46 million for the years ended December 31, 2018, 2017 and 2016, respectively.

In the aggregate, the Company expects the future amortization expense for intangible assets existing as of December 31, 2018 to be approximately \$48 million, \$42 million, \$34 million, \$29 million and \$26 million for the years ending December 31, 2019, 2020, 2021, 2022 and 2023, respectively.

Intangible assets are reviewed for impairment at least annually and more frequently whenever events or changes in circumstances indicate that the carrying value of such assets may not be recoverable. No impairments of the Company's intangible assets were recognized during the years ended December 31, 2018, 2017 and 2016.

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## 10. LONG-TERM DEBT

On October 19, 2017, the Company entered into an amended and restated credit agreement (the “2017 Credit Agreement”), which amended and restated in its entirety the then-existing credit agreement dated April 1, 2014 (the “2014 Credit Agreement”). The 2017 Credit Agreement provides for a \$750 million revolving credit facility with a term of five years from a syndicate of financial institutions as lenders and issuing banks. The 2017 facility may be used for working capital and other general corporate purposes of the Company and its subsidiaries. In connection with the transaction, the Company incurred \$4 million of issuance costs. Those costs along with the \$4 million of unamortized costs related to the prior agreement were allocated between the extinguishment of the 2014 Credit Agreement and the 2017 Credit Agreement. This allocation resulted in the Company recognizing a loss of \$4 million on the extinguishment with the remaining \$4 million being deferred and amortized on a straight-line basis as interest expense over the term of the 2017 Credit Agreement.

Up to \$20 million of the revolving credit facility is available for the issuance of letters of credit. The Company had an irrevocable standby letter of credit outstanding totaling \$0.2 million as of December 31, 2018 and December 31, 2017, which was required to secure its San Francisco office lease. The letter of credit was established in 2014 and automatically renews through January 31, 2025.

The loans under the 2017 Credit Agreement bear interest during any interest period selected by the Company, at either (i) the London interbank offered rate for deposits in U.S. dollars with a maturity comparable to such interest period, adjusted for statutory reserves (“LIBOR”), plus an initial spread of 1.25% per annum, subject to adjustment based on the First Lien Secured Leverage Ratio (as defined in the 2017 Credit Agreement) of the Company, or (ii) at the greatest of (x) the prime rate from time to time announced by JPMorgan Chase Bank, N.A., (y) the federal funds effective rate plus half of 1% and (z) LIBOR for a one-month interest period plus 1.00%, plus an initial spread of 0.25% per annum, subject to adjustment based on the First Lien Secured Leverage Ratio of the Company. If an event of default occurs under the 2017 Credit Agreement, the interest rate on overdue amounts will increase by 2.00% per annum. The obligations under the 2017 Credit Agreement are guaranteed by all material subsidiaries of the Company and are secured by a lien on substantially all of the assets of the Company and its material subsidiaries, in each case subject to certain exceptions, pursuant to security and guarantee agreements entered into on the closing date of the 2017 Credit Agreement.

The 2017 Credit Agreement requires the Company to maintain (i) a First Lien Secured Leverage Ratio not exceeding 3.50 to 1.00 and (ii) after the incurrence of additional indebtedness under certain specified exceptions in the 2017 Credit Agreement, a Total Leverage Ratio (as defined in the 2017 Credit Agreement) not exceeding 4.50 to 1.00. The 2017 Credit Agreement also includes other covenants, including ones that subject to certain exceptions, restrict the ability of the Company and its subsidiaries to (i) incur additional indebtedness, (ii) create, incur, assume or permit to exist any liens, (iii) enter into mergers, consolidations or similar transactions, (iv) make investments and acquisitions, (v) make certain dispositions of assets, (vi) make dividends, distributions and prepayments of certain indebtedness, and (vii) enter into certain transactions with affiliates. The Company was in compliance with the covenants in the 2017 Credit Agreement as of December 31, 2018.

The Company had no outstanding long-term debt at December 31, 2018 and December 31, 2017. For the years ended December 31, 2018, 2017 and 2016, the Company recognized interest expense, including amortization of debt issuance costs and commitment fees, on its revolving credit facility and term loan of approximately \$3 million, \$9 million and \$10 million, respectively. Interest expense included amortized debt issuance costs of approximately \$1 million, \$2 million and \$3 million for the years ended December 31, 2018, 2017 and 2016, respectively. The Company had \$3 million and \$4 million of deferred debt issuance costs included in deposits and other assets at December 31, 2018 and December 31, 2017, respectively.



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COSTAR GROUP, INC.  
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## 11. INCOME TAXES

The components of the provision for income taxes attributable to operations consist of the following (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Current:			
Federal	\$36,167	\$41,453	\$32,198
State	5,140	3,518	3,682
Foreign	708	295	76
Total current	42,015	45,266	35,956
Deferred:			
Federal	6,576	(7,917 )	12,586
State	(2,582 )	4,695	3,014
Foreign	(328 )	319	35
Total deferred	3,666	(2,903 )	15,635
Total provision for income taxes	\$45,681	\$42,363	\$51,591

The components of deferred tax assets and liabilities consist of the following (in thousands):

	December 31,	
	2018	2017
Deferred tax assets:		
Reserve for bad debts	\$1,457	\$1,636
Accrued compensation	4,803	6,706
Stock compensation	10,041	10,568
Net operating losses	26,349	25,899
Accrued reserve and other	1,773	1,578
Deferred rent	5,928	6,533
Deferred gain on the sale of building	4,140	4,741
Research and development credits	6,331	—
Total deferred tax assets, prior to valuation allowance	60,822	57,661
Valuation allowance	(14,246 )	(13,032 )
Total deferred tax assets, net of valuation allowance	46,576	44,629
Deferred tax liabilities:		
Deferred commission costs, net	(19,314 )	—
Prepaid expenses	(2,204 )	(1,239 )
Property and equipment, net	(5,367 )	(6,229 )
Intangible assets, net	(82,079 )	(43,800 )
Total deferred tax liabilities	(108,964 )	(51,268 )
Net deferred tax assets (liabilities)	\$(62,388)	\$(6,639)

As of December 31, 2018 and 2017, a valuation allowance has been established for certain deferred tax assets due to the uncertainty of realization. The valuation allowance as of December 31, 2018 and 2017 includes an allowance for unrealized losses on ARS investments, foreign deferred tax assets and state net operating losses and tax credits. The valuation allowance for the deferred tax asset for unrealized losses on ARS has been recorded as an adjustment to accumulated other comprehensive loss.

The Company established the valuation allowance because it is more likely than not that a portion of the deferred tax asset for certain items will not be realized based on the weight of available evidence. A valuation allowance was established for the

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## COSTAR GROUP, INC.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

unrealized losses on securities as the Company has not historically generated capital gains, and it is uncertain whether the Company will generate sufficient capital gains in the future to absorb the capital losses. A valuation allowance was established for the foreign deferred tax assets due to the cumulative loss in recent years in those jurisdictions. The Company has not had sufficient taxable income historically to utilize the foreign deferred tax assets, and it is uncertain whether the Company will generate sufficient taxable income in the future to utilize the deferred tax assets. Similarly, the Company has established a valuation allowance for net operating losses and tax credits in certain states where it is uncertain whether the Company will generate sufficient taxable income to utilize the net operating losses and tax credits before they expire.

The Company's change in valuation allowance was an increase of approximately \$1 million for the year ended December 31, 2018 and a decrease of approximately \$4 million for the year ended December 31, 2017. The increase for the year ended December 31, 2018 is due to an increase in the valuation allowance for state tax credits related to the D.C. qualified high technology company credit of approximately \$1 million. The increase for the year ended December 31, 2017 is due to an increase in the valuation allowance for foreign deferred tax assets related to foreign net operating losses of approximately \$4 million.

The Company had U.S. income before income taxes of approximately \$294 million, \$167 million and \$135 million for the years ended December 31, 2018, 2017 and 2016, respectively. The Company had foreign losses before income taxes of approximately \$10 million and \$2 million for the years ended December 31, 2018 and December 31, 2017, respectively. The Company had foreign income before income taxes of approximately \$2 million for the year ended December 31, 2016.

The Company's provision for income taxes resulted in effective tax rates that varied from the statutory federal income tax rate as follows (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Expected federal income tax provision at statutory rate	\$59,643	\$57,770	\$47,832
State income taxes, net of federal benefit	10,312	4,776	3,638
Foreign income taxes, net effect	(315 )	(3,540 )	(31 )
Increase (decrease) in valuation allowance	1,214	3,624	(103 )
Tax rate changes	141	(7,340 )	283
Research credits	(15,373 )	(20,547 )	(920 )
Excess tax benefit	(14,227 )	(7,010 )	—
Tax reserves	1,870	12,646	(150 )
Other adjustments	2,416	1,984	1,042
Income tax expense	\$45,681	\$42,363	\$51,591

The Company's U.K. subsidiaries with foreign losses are disregarded entities for U.S. income tax purposes. Accordingly, the losses from these disregarded entities are included in the Company's consolidated federal income tax provision at the statutory rate. Federal income taxes attributable to income from these disregarded entities are reduced by foreign taxes paid by those disregarded entities.

The Company recognized an income tax benefit during the year ended December 31, 2018 for state research credits of \$14 million for tax years December 31, 2013 through December 31, 2018. These research credits relate to eligible activities including the development of new products, product enhancements and new or improved processes.

The Company has net operating loss carryforwards for international income tax purposes of approximately \$53 million, which do not expire. The Company has federal net operating loss carryforwards of approximately \$44 million that begin to expire in 2020, state net operating loss carryforwards with a tax value of approximately \$4 million that begin to expire in 2020 and state income tax credit carryforwards with a tax value of approximately \$11 million primarily relating to state research and development credits and the D.C. qualified high technology company tax credit that begin to expire in 2020. The Company realized a cash benefit relating to the use of its tax loss carryforwards of approximately \$6 million, \$7 million and \$5 million in December 31, 2018, 2017 and 2016, respectively.

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The following table summarizes the activity related to the Company's unrecognized tax benefits (in thousands):

Unrecognized tax benefit as of December 31, 2015	\$7,664
Increase for current year tax positions	368
Decrease for prior year tax positions	(6,115 )
Expiration of the statute of limitation for assessment of taxes	(74 )
Unrecognized tax benefit as of December 31, 2016	1,843
Increase for current year tax positions	12,620
Decrease for prior year tax positions	(34 )
Expiration of the statute of limitation for assessment of taxes	(66 )
Unrecognized tax benefit as of December 31, 2017	14,363
Increase for current year tax positions	9,561
Decrease for prior year tax positions	(70 )
Expiration of the statute of limitation for assessment of taxes	(1,482 )
Unrecognized tax benefit as of December 31, 2018	\$22,372

Approximately \$22 million and \$14 million of the unrecognized tax benefits as of December 31, 2018 and 2017, respectively, would favorably affect the annual effective tax rate, if recognized in future periods. The increase for current year tax positions of \$9 million for the year ended December 31, 2018 is primarily attributable to research credits and state apportionment methodology reserve related to the ForRent acquisition. The decrease of \$1 million for the year ended December 31, 2018 is primarily attributable to the expiration of the statute of limitation on the state apportionment methodology reserve. The Company recognized \$224,000 for interest and penalties in its consolidated statement of operations for the year ended December 31, 2018. The Company recognized \$72,000 for interest and penalties in its consolidated statement of operations for the year ended December 31, 2017. The Company reversed interest and penalties of \$416,000 in its consolidated statement of operations for the year ended December 31, 2016. The Company had liabilities of \$430,000, \$205,000 and \$133,000 for interest and penalties in its consolidated balance sheets as of December 31, 2018, 2017, 2016 respectively. The Company does not anticipate the amount of the unrecognized tax benefits will change significantly over the next twelve months.

The Company is subject to taxation in the U.S. federal jurisdiction and various states and foreign jurisdictions. The Company's federal income tax returns for tax years 2013 through 2017 remain open to examination. The Company is under Internal Revenue Service examination for tax year 2013 related to the research and development credit. Most of the Company's state income tax returns for tax years 2015 through 2017 remain open to examination. For states that have a four-year statute of limitations, the state income tax returns for tax years 2014 through 2017 remain open to examination. The Company's U.K. income tax returns for tax years 2013 through 2017 remain open to examination. The Company believes that an adequate provision has been made for any adjustments that may result from tax examinations.

On December 22, 2017, the U.S. enacted the Tax Cuts and Jobs Act (the "Tax Act"), which significantly changed U.S. tax law. The Tax Act lowered the Company's U.S. statutory federal income tax rate from 35% to 21% effective January 1, 2018, while also imposing a deemed repatriation tax on deferred foreign income. The Tax Act also created a new minimum tax on certain future foreign earnings under section 951(a) and allows foreign-derived intangible income deduction under section 250(a). The Securities and Exchange Commission staff issued Staff Accounting Bulletin 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act, ("SAB 118"), which provides

guidance on accounting for the tax effects of the Tax Act. SAB 118 provided a measurement period of up to one year from the Tax Act enactment date for companies to complete the accounting under ASC 740.

As of December 31, 2018, the Company's accounting for income tax effects of the Tax Act is complete and the Company has reflected all income tax effects of the Tax Act in the financial statements and related disclosures. Any additional guidance issued by the U.S. Treasury Department, the IRS, and other standard-setting bodies, may result in the Company deciding to make adjustments. Those adjustments may materially impact the provision for income taxes in the period in which the adjustments are made.

As of December 31, 2018 the Company has evaluated the global intangible low taxed income inclusion under section 951(a)("GILTI"). Under U.S. GAAP, the Company is allowed to make an accounting policy choice of either (1) treating GILTI as a current-period expense when incurred (the "period cost method") or (2) factoring such amounts into the measurement of deferred taxes (the "deferred method"). The Company elected to record the GILTI income inclusion under the current-period cost method.

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## 12. COMMITMENTS AND CONTINGENCIES

The Company leases office facilities and office equipment under various non-cancelable operating leases. The leases contain various renewal options. Rent expense for the years ended December 31, 2018, 2017 and 2016, was approximately \$29 million, \$26 million and \$22 million, respectively.

Future minimum lease payments as of December 31, 2018 are as follows (in thousands):

2019	\$30,485
2020	29,255
2021	27,421
2022	25,634
2023	24,515
Thereafter	31,768
Total future minimum lease payments	\$169,078

Currently, and from time to time, the Company is involved in litigation incidental to the conduct of its business. In accordance with GAAP, the Company records a provision for a liability when it is both probable that a liability has been incurred and the amount can be reasonably estimated. While it is reasonably possible that an unfavorable outcome may occur as a result of one or more of the Company's current litigation matters, at this time management has concluded that the resolutions of these matters are not expected to have a material adverse effect on the Company's consolidated financial position, future results of operations or liquidity. Legal defense costs are expensed as incurred.

## 13. SEGMENT REPORTING

### Segment Information

The Company manages its business geographically in two operating segments, with the primary areas of measurement and decision-making being North America, which includes the U.S. and Canada, and International, which includes the U.K., Spain, Germany and France. Management relies on an internal management reporting process that provides revenue and operating segment net income before interest and other income (expense), loss on debt extinguishment, income taxes, depreciation and amortization ("EBITDA"). Management believes that operating segment EBITDA is an appropriate measure for evaluating the operational performance of the Company's operating segments. EBITDA is used by management to internally measure operating and management performance and to evaluate the performance of the business. However, this measure should be considered in addition to, not as a substitute for or superior to, income from operations or other measures of financial performance prepared in accordance with GAAP.

Summarized information by operating segment consists of the following (in thousands):

	Year Ended December 31,		
	2018	2017	2016
<b>EBITDA</b>			
North America	\$358,036	\$236,906	\$210,901
International	(6,729)	553	4,169
Total EBITDA	\$351,307	\$237,459	\$215,070



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The reconciliation of net income to EBITDA consists of the following (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Net income	\$238,334	\$122,695	\$85,071
Amortization of acquired intangible assets in cost of revenues	20,586	19,707	22,819
Amortization of acquired intangible assets in operating expenses	30,881	17,684	22,731
Depreciation and other amortization	26,276	26,252	24,615
Interest and other income	(13,281 )	(4,044 )	(1,773 )
Interest and other expense	2,830	9,014	10,016
Loss on debt extinguishment	—	3,788	—
Income tax expense	45,681	42,363	51,591
EBITDA	\$351,307	\$237,459	\$215,070

Summarized information by operating segment consists of the following (in thousands):

	December 31,	
	2018	2017
Property and equipment, net		
North America	\$79,493	\$79,736
International	3,810	4,760
Total property and equipment, net	\$83,303	\$84,496
Goodwill		
North America	\$1,573,088	\$1,253,494
International	38,447	29,963
Total goodwill	\$1,611,535	\$1,283,457
Assets		
North America	\$3,253,035	\$2,816,156
International	59,922	57,285
Total assets	\$3,312,957	\$2,873,441
Liabilities		
North America	\$272,776	\$201,831
International	18,239	20,360
Total liabilities	\$291,015	\$222,191

#### 14. STOCKHOLDERS' EQUITY

##### Preferred Stock

The Company has 2 million shares of preferred stock, \$0.01 par value, authorized for issuance as of December 31, 2018. The Board of Directors may issue the preferred stock from time to time as shares of one or more classes or series.

##### Common Stock

The Company has 60 million shares of common stock, \$0.01 par value, authorized for issuance. Dividends may be declared and paid on the common stock, subject in all cases to the rights and preferences of the holders of preferred

stock and authorization by the Board of Directors. In the event of liquidation or winding up of the Company and after the payment of all preferential amounts required to be paid to the holders of any series of preferred stock, any remaining funds shall be distributed among the holders of the issued and outstanding common stock.

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Equity Offering

In October 2017, the Company completed a public equity offering of 3.3 million shares of common stock for \$260 per share. Net proceeds from the public equity offering were approximately \$834 million, after deducting approximately \$29 million of underwriting discounts and other fees. The Company used net proceeds from the public equity offering to fund the costs of strategic acquisitions, to finance business growth and for working capital and other general corporate purposes. The Company expects to use any remaining net proceeds from the equity offering to fund all or a portion of the costs of any additional strategic acquisitions the Company determines to pursue, to finance the growth of its business and for working capital and other general corporate purposes. General corporate purposes may include additions to working capital, capital expenditures, repayment of debt, investments in the Company's subsidiaries, possible acquisitions and the repurchase, redemption or retirement of securities, including the Company's common stock.

15. NET INCOME PER SHARE

The following table sets forth the calculation of basic and diluted net income per share (in thousands except per share data):

	Year Ended December 31,		
	2018	2017	2016
Numerator:			
Net income	\$238,334	\$122,695	\$85,071
Denominator:			
Denominator for basic net income per share — weighted-average outstanding shares	36,058	33,200	32,167
Effect of dilutive securities:			
Stock options and restricted stock awards	390	359	269
Denominator for diluted net income per share — weighted-average outstanding shares	36,448	33,559	32,436
Net income per share — basic	\$6.61	\$3.70	\$2.64
Net income per share — diluted	\$6.54	\$3.66	\$2.62

Stock options to purchase approximately 64,000, 87,000 and 194,000 shares that were outstanding for the years ended December 31, 2018, December 31, 2017 and December 31, 2016, respectively, were not included in the computation of diluted net income per share because the inclusion of the potentially dilutive common shares would have an anti-dilutive effect. Shares underlying restricted common stock awards that vest based on Company performance and service conditions that have not been achieved as of the end of the period are not included in the computation of basic or diluted earnings per share. Shares underlying restricted stock units that vest based on Company service conditions, that have not been achieved as of the end of the period are not included in the computation of basic or diluted earnings per share. The following table summarizes the shares underlying the performance-based restricted stock awards and service-based restricted stock units excluded from the basic and diluted calculation (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Performance-based restricted stock awards	53	58	59
Service-based restricted stock units	1	1	1
Total shares excluded from computation	54	59	60

16. EMPLOYEE BENEFIT PLANS

Stock Incentive Plans

In April 2007, the Company's Board of Directors adopted the CoStar Group, Inc. 2007 Stock Incentive Plan (as amended, the "2007 Plan"), subject to stockholder approval, which was obtained on June 7, 2007. In April 2016, the Company's Board of Directors adopted the CoStar Group, Inc. 2016 Stock Incentive Plan (as amended, the "2016 Plan"), subject to stockholder approval, which was obtained on June 9, 2016. All shares of common stock that were authorized for issuance under the 2007 Plan that, as

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of June 9, 2016, remained available for issuance under the 2007 Plan (excluding shares subject to outstanding awards) were rolled into the 2016 Plan and, as of that date, no shares of common stock were available for new awards under the 2007 Plan. The 2007 Plan continues to govern unexercised and unexpired awards issued under the 2007 Plan prior to June 9, 2016. The 2007 Plan provided for the grant of stock options, restricted stock, restricted stock units and stock appreciation rights to officers, directors and employees of the Company and its subsidiaries. Stock options granted under the 2007 Plan could be incentive or non-qualified, and except in limited circumstances related to a merger or other acquisition, the exercise price for a stock option may not be less than the fair market value of the Company's common stock on the date of grant. The vesting period of the options, restricted stock and restricted stock unit grants under the 2007 Plan was determined by the Board of Directors or a committee thereof and was generally three to four years. In some cases, vesting of restricted stock awards under the 2007 Plan is subject to performance conditions. Upon the occurrence of a Change of Control, as defined in the 2007 Plan, all outstanding unexercisable options and restricted stock grants under the 2007 Plan immediately become exercisable.

The 2016 Plan provides for the grant of stock options, restricted stock, restricted stock units, and stock appreciation rights to officers, directors and employees of the Company and its subsidiaries. Stock options granted under the 2016 Plan may be non-qualified or may qualify as incentive stock options. Except in limited circumstances related to a merger or other acquisition, the exercise price for an option may not be less than the fair market value of the Company's common stock on the date of grant. The vesting period for each grant of options, restricted stock, restricted stock units and stock appreciation rights under the 2016 Plan is determined by the Board of Directors or a committee thereof and is generally three to four years, subject to minimum vesting periods for restricted stock and restricted stock units of at least one year. In some cases, vesting of awards under the 2016 Plan may be based on performance conditions. The Company has issued and/or reserved the following shares of common stock for issuance under the 2016 Plan: (a) 1,450,000 shares of common stock, plus (b) 815,464 shares of common stock that were authorized for issuance under the 2007 Plan that, as of June 9, 2016, remained available for issuance under the 2007 Plan (not including any Shares that were subject as of such date to outstanding awards under the 2007 Plan), and (c) any shares of common stock subject to outstanding awards under the 2007 Plan as of June 9, 2016, that on or after such date cease for any reason to be subject to such awards (other than by reason of exercise or settlement of the awards to the extent they are exercised for or settled in vested and nonforfeitable shares). Unless terminated sooner, the 2016 Plan will terminate in June 2026, but will continue to govern unexercised and unexpired awards issued under the 2016 Plan prior to that date. Approximately 2 million shares were available for future grant under the 2016 Plan as of December 31, 2018.

At December 31, 2018, there was approximately \$66 million of unrecognized compensation cost related to stock incentive plans, net of estimated forfeitures, which the Company expects to recognize over a weighted-average-period of 2.4 years.

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Stock Options

Option activity was as follows:

	Number of Shares	Range of Exercise Price	Weighted- Average Exercise Price	Weighted- Average Remaining Contract Life (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2015	400,077	\$36.48 - \$201.04	\$ 122.30		
Granted	82,400	\$182.75 - \$182.75	\$ 182.75		
Exercised	(29,285 )	\$36.48 - \$201.04	\$ 112.78		
Canceled or expired	(13,034 )	\$193.69 - \$201.04	\$ 195.78		
Outstanding at December 31, 2016	440,158	\$36.48 - \$201.04	\$ 132.08		
Granted	95,500	\$204.91	\$ 204.91		
Exercised	(81,815 )	\$36.48 - \$201.04	\$ 83.07		
Outstanding at December 31, 2017	453,843	\$36.73 - \$204.91	\$ 156.24		
Granted	82,500	\$342.13	\$ 342.13		
Exercised	(177,299 )	\$36.73 - \$204.91	\$ 125.16		
Canceled or expired	(14,768 )	\$182.75 - \$342.13	\$ 261.20		
Outstanding at December 31, 2018	344,276	\$36.73 - \$342.13	\$ 212.28	7.03	\$ 43,418
Exercisable at December 31, 2016	284,489	\$36.48 - \$201.04	\$ 100.94		
Exercisable at December 31, 2017	278,239	\$36.73 - \$201.04	\$ 130.91		
Exercisable at December 31, 2018	185,405	\$54.51 - \$204.91	\$ 165.31	5.79	\$ 31,895

The aggregate intrinsic value is calculated as the difference between (i) the closing price of the common stock at the end of the period and (ii) the exercise prices of the underlying awards, multiplied by the shares underlying options as of the end of the period that had an exercise price less than the closing price on that date. Options to purchase 177,299, 81,815, and 29,285, shares were exercised during the years ended 2018, 2017 and 2016, respectively. The aggregate intrinsic value of options exercised, determined as of the date of option exercise, was approximately \$45 million, \$13 million and \$3 million for the years ended December 31, 2018, 2017 and 2016, respectively.

The weighted-average grant date fair value of each option granted during the years ended December 31, 2018, 2017 and 2016 using the Black-Scholes option-pricing model was \$101.02, \$59.06 and \$54.34, respectively.

The Company estimated the fair value of each option granted on the date of grant using the Black-Scholes option-pricing model, using the assumptions in the following table:

	Year Ended December 31,		
	2018	2017	2016
Dividend yield	0 %	0 %	0 %
Expected volatility	28 %	28 %	31 %
Risk-free interest rate	3 %	2 %	1 %
Expected life (in years)	5	5	5

The expected dividend yield is determined based on the Company's past cash dividend history and anticipated future cash dividend payments. The Company has never declared or paid any dividends on its common stock and does not anticipate paying any dividends on its common stock during the foreseeable future, but intends to retain any earnings for future growth of its business. Expected volatility is calculated based on historical volatility of the daily closing price of the Company's common stock over a period consistent with the expected life of the options granted. The risk-free interest rate is based on the U.S. Treasury rate with terms similar to the expected life of the options granted. The expected life for the options is determined based on multiple factors,

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including historical employee behavior patterns of exercising options and post-employment termination behavior as well as expected future employee option exercise patterns.

The following table summarizes information regarding options outstanding at December 31, 2018:

Range of Exercise Price	Options Outstanding			Weighted-Average Exercise Price	Options Exercisable	
	Number of Shares	Weighted-Average (years)	Remaining Contractual Life (in years)		Number of Shares	Weighted-Average Exercise Price
\$54.51 - \$78.33	300	1.92		\$ 54.51	300	\$ 54.51
\$78.34 - \$142.45	58,844	4.19		\$ 102.16	58,844	\$ 102.16
\$142.46 - \$188.22	57,768	7.19		\$ 182.75	33,033	\$ 182.75
\$188.23 - \$197.37	34,264	6.17		\$ 193.69	34,264	\$ 193.69
\$197.38 - \$202.98	34,600	5.16		\$ 201.04	34,600	\$ 201.04
\$202.99 - \$273.52	82,500	8.16		\$ 204.91	24,364	\$ 204.91
\$273.53 - \$342.13	76,000	9.16		\$ 342.13	—	\$ —
\$54.51 - \$342.13	344,276	7.03		\$ 212.28	185,405	\$ 165.31

#### Restricted Stock Awards

In February 2018, March 2017 and March 2016, the Compensation Committee of the Board of Directors of the Company approved grants of restricted common stock to the executive officers that vest based on the Company's achievement of a three-year cumulative revenue goal established at the grant date, and are subject to forfeiture in the event the foregoing performance condition is not met by the end of each respective three-year period. The number of shares that may be earned ranges between 0% (if the specified threshold performance level is not attained) and 200% (if performance meets or exceeds the maximum achievement level) of the target award. If actual performance exceeds the pre-established threshold, the number of shares earned is calculated based on the relative performance between specified levels of achievement. These awards support the Company's goals of aligning executive incentives with long-term stockholder value and ensuring that executive officers have a continuing stake in the long-term success of the Company.

These grants of restricted common stock are subject to continuing employment requirements and to a market condition. The actual number of shares that vest at the end of the respective three-year period is determined based on the Company's achievement of the three-year performance goals described above, as well as its TSR relative to the Russell 1000 Index over the same three-year performance period. At the end of the three-year performance period, if the performance condition is achieved at or above the pre-established threshold, the number of shares earned is further adjusted by a TSR payout percentage, which ranges between 80% and 120%, based on the Company's TSR performance relative to that of the Russell 1000 Index over the respective three-year period. The Company granted a total of 26,160, 32,160 and 25,680 shares of performance-based restricted common stock during the years ended December 31, 2018, 2017 and 2016, respectively.



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The Company estimates the fair value of its performance-based restricted common stock awards with a market condition on the date of grant using a Monte-Carlo simulation valuation model. This pricing model uses multiple simulations to evaluate the probability of the Company achieving various stock price levels to determine the expected TSR performance ranking. Expense is only recorded for awards that are expected to vest, net of estimated forfeitures. The assumptions used to estimate the fair value of performance-based restricted common stock awards with a market condition granted were as follows:

	Year Ended December 31,			
	2018	2017	2016	
Dividend yield	0	% 0	% 0	%
Expected volatility	28	% 28	% 28	%
Risk-free interest rate	2	% 2	% 1	%
Expected life (in years)	3	3	3	
Weighted-average grant date fair value	\$342.13	\$218.59	\$184.97	

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The expected dividend yield is determined based on the Company's past cash dividend history and anticipated future cash dividend payments. The Company has never declared or paid any dividends on its common stock and does not anticipate paying any dividends on its common stock during the foreseeable future, but intends to retain any earnings for future growth of its business. Expected volatility is calculated based on historical volatility of the daily closing price of the common stock of the companies within the Russell 1000 Index over a period consistent with the expected life of the performance-based restricted common stock awards with a market condition. The risk-free interest rate is based on the U.S. Treasury rate with terms similar to the expected life of the performance-based restricted common stock awards with a market condition. The expected life is consistent with the performance measurement period of the performance-based restricted common stock awards with a market condition.

As of December 31, 2018, the Company reassessed the probability of achieving the performance and market conditions and determined that it was probable that the performance and market conditions for the 2018, 2017 and 2016 performance-based restricted common stock awards would be met by their forfeiture dates. As a result, the Company recorded a total of approximately \$5 million, \$5 million and \$3 million of stock-based compensation expense related to the performance-based restricted common stock awards with a market condition for the years ended December 31, 2018, 2017 and 2016, respectively. The Company expects to record an aggregate amount of stock-based compensation expense related to the performance-based restricted common stock awards of approximately \$7 million over the periods 2019, 2020 and 2021.

The following table presents unvested restricted stock awards activity for the year ended December 31, 2018:

	Restricted Stock Awards — without Market Condition		Restricted Stock Awards — with Market Condition	
	Number of Shares	Weighted-Average Grant Date Fair Value per Share	Number of Shares	Weighted-Average Grant Date Fair Value per Share
Unvested restricted stock awards at December 31, 2017	363,883	\$ 206.59	85,200	\$ 205.08
Granted	134,209	\$ 358.51	26,160	\$ 380.24
Vested	(151,995)	\$ 193.70	(27,360)	\$ 361.20
Canceled	(41,936 )	\$ 258.19	(7,680 )	\$ 361.20
Unvested restricted stock awards at December 31, 2018	304,161	\$ 272.95	76,320	\$ 193.44

#### Restricted Stock Units

The following table presents unvested restricted stock units activity for the year ended December 31, 2018:

	Number of Shares	Weighted-Average Grant Date Fair Value per Share
Unvested restricted stock units at December 31, 2017	962	\$ 190.27
Granted	214	\$ 342.13
Vested	(324 )	\$ 189.08
Canceled	—	\$ —

Unvested restricted stock units at December 31, 2018 852 \$ 228.86

#### Management Stock Purchase Plan

The Board of Directors adopted the Company's Management Stock Purchase Plan (the "MSPP") in December 2017 with the intent of providing selected key employees of the Company and its subsidiaries, including the Company's executive officers, the opportunity to defer a portion of their cash incentive compensation and to align management and stockholder interests through awards of Deferred Stock Units ("DSUs") under the MSPP and awards of matching restricted stock units ("Matching RSUs") issued under the Company 2016 Plan. Commencing with cash incentive compensation for calendar year 2018, participants were

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permitted to elect to defer up to 100% of their annual incentive bonus earned during the calendar year or commissions earned from March through December of 2018 by submitting an irrevocable election in accordance with Section 409A of the Internal Revenue Code, as amended. On the date the incentive bonus or commission would otherwise be paid in cash (typically during the following calendar year), the Company will award to the participant DSUs representing a number of shares of common stock having an aggregate fair market value on that date equal to the amount of compensation elected to be deferred under the MSPP. On the same date the DSUs are awarded, a participant will receive a grant of Matching RSUs covering a number of shares of common stock equal to 100% of the DSUs granted. The expense related to the DSUs will be recognized at the grant date and the expense related to the Matching RSUs will be recognized over the four year vesting period following the grant date. There were no grants of DSUs or Matching RSUs and no expense recognized under the MSPP in 2018.

#### Employee 401(k) Plan

The Company maintains a 401(k) Plan (the “401(k)”) as a defined contribution retirement plan for all eligible employees. The 401(k) provides for tax-deferred contributions of employees’ salaries, limited to a maximum annual amount as established by the IRS. In addition to the traditional 401(k), effective January 1, 2015, eligible employees have the option of making an after-tax contribution to a Roth 401(k) plan or a combination of both. In 2018, 2017 and 2016, the Company matched 100% of employee contributions up to a maximum of 4% of total compensation. Amounts contributed to the 401(k) by the Company to match employee contributions for the years ended December 31, 2018, 2017 and 2016 were approximately \$12 million, \$10 million and \$9 million, respectively. The Company had no administrative expenses in connection with the 401(k) plan for the years ended December 31, 2018, 2017 and 2016, respectively.

#### Employee Pension Plan

The Company maintains a Group Personal Pension Plan (the “Plan”) for all eligible employees in the Company’s U.K. offices. The Plan is a defined contribution plan. Employees are eligible to contribute a portion of their salaries, subject to a maximum annual amount as established by Her Majesty’s Revenue and Customs. In 2018, 2017 and 2016, the Company’s matching contribution was based on the percentage contributed by the employee, up to a maximum of 6% of total compensation. Amounts contributed to the Plan by the Company to match employee contributions for the years ended December 31, 2018, 2017 and 2016, were approximately \$0.5 million, \$0.4 million and \$0.4 million respectively.

#### Registered Retirement Savings Plan

As of January 1, 2015, the Company introduced a registered retirement savings plan (“RRSP”) for all eligible employees in the Company’s Canadian offices. In 2017, 2016 and 2015, the Company matched 100% of employee contributions up to a maximum of 4% of total compensation. Amounts contributed to the RRSP by the Company to match employee contributions for the years ended December 31, 2018, 2017 and 2016 were approximately \$58,000, \$43,000 and \$10,000 respectively.

#### Employee Stock Purchase Plan

As of August 1, 2006, the Company introduced an Employee Stock Purchase Plan (“ESPP”), pursuant to which eligible employees participating in the plan authorize the Company to withhold specified amounts from the employees’ compensation and use the withheld amounts to purchase shares of the Company’s common stock at 90% of the market price. Participating employees are able to purchase common stock under this plan during each offering period. An

offering period begins the second Saturday before each of the Company's regular pay dates and ends on each of the Company's regular pay dates. On June 3, 2015, the Company's stockholders approved an amendment to the ESPP to increase the number of shares available for purchase under the ESPP by 100,000 shares. On September 14, 2015, the Company registered the issuance of these additional shares under the ESPP pursuant to the registration statement filed September 14, 2015. There were 65,174 and 80,022 shares available for purchase under the ESPP as of December 31, 2018 and 2017, respectively, and approximately 14,848 and 13,790 shares of the Company's common stock were purchased under the ESPP during 2018 and 2017, respectively.

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## 17. QUARTERLY RESULTS OF OPERATIONS

The following is a summary of the unaudited quarterly results of operations for the years ended December 31, 2018 and 2017. Information about prior period acquisitions and the adoption of recent accounting pronouncements that may affect the comparability of the quarterly financial information presented below are included in Note 2 and Note 4.

	2018			
	Mar. 31	Jun. 30	Sep. 30	Dec. 31
Revenues	\$273,718	\$297,018	\$305,525	\$315,571
Cost of revenues	62,477	67,136	72,072	68,248
Gross profit	211,241	229,882	233,453	247,323
Operating expenses	157,796	186,108	162,765	141,666
Income from operations	53,445	43,774	70,688	105,657
Interest and other income	2,987	2,652	3,035	4,607
Interest and other expense	(690)	(728)	(717)	(695)
Income before income taxes	55,742	45,698	73,006	109,569
Income tax expense	3,511	1,863	14,247	26,060
Net income	\$52,231	\$43,835	\$58,759	\$83,509
Net income per share — basic	\$1.46	\$1.22	\$1.63	\$2.31
Net income per share — diluted	\$1.44	\$1.20	\$1.61	\$2.29

	2017			
	Mar. 31	Jun. 30	Sep. 30	Dec. 31
Revenues	\$226,553	\$237,153	\$247,533	\$253,991
Cost of revenues	51,346	55,273	55,483	58,301
Gross profit	175,207	181,880	192,050	195,690
Operating expenses	137,545	153,997	134,537	144,932
Income from operations	37,662	27,883	57,513	50,758
Interest and other income	429	605	555	2,455
Interest and other expense	(2,686)	(2,693)	(2,901)	(734)
Loss on debt extinguishment	—	—	—	(3,788)
Income before income taxes	35,405	25,795	55,167	48,691
Income tax expense	13,275	3,611	20,990	4,487
Net income	\$22,130	\$22,184	\$34,177	\$44,204
Net income per share — basic	\$0.69	\$0.68	\$1.05	\$1.24
Net income per share — diluted	\$0.68	\$0.68	\$1.04	\$1.22