

Business

MARKETS

▲ 112.86 **Dow** 19,912.71
 ▲ 48.01 **Nasdaq** 5,600.96
 ▲ 14.87 **S&P 500** 2,280.07
 ▲ 0.07 **10-yr. T-note** 2.47%
 ▲ \$0.43 **Oil** \$53.18
 ▼ \$4.70 **Gold** \$1,210.30
 Unchg. **Silver** \$17.16

Euro 0.9320 • **Peso** 21.5250

S&P 500, NASDAQ HIT RECORDS: The S&P 500 and Nasdaq set record highs on Tuesday in a broad rally led by financial and technology stocks.

BRIEFLY

ALCOA SEES HIGHER ALUMINUM DEMAND: Alcoa reported higher-than-expected revenue in its first quarterly results after the metals company split into two in November, helped partly by a rise in alumina prices. The producer of aluminum, alumina and bauxite also said it expects a 4 percent growth in global aluminum demand in 2017 even as the market remains modestly oversupplied.

SAFER LITHIUM-ION BATTERIES SOUGHT: Safety standards for lithium-ion batteries need to be modernized following a massive recall of Samsung phones after faulty batteries caused fires, a U.S. government agency said on Tuesday. "Consumers should never have to worry that a battery-powered device might put them, their family or their property at risk," Consumer Product Safety Commission Chairman Elliot Kaye said. The agency reached agreement with Samsung to recall 2.5 million Note 7 phones in early September. The U.S. consumer-safety regulator and Samsung are working with the industry to update the voluntary standard for lithium-ion batteries in smartphones, the commission said.

TOYOTA RECALLS 79K PICKUPS: Toyota says it's recalling about 79,000 Tundra pickup trucks in the U.S., Canada and Central America because steps in the rear bumpers could break. The recall covers trucks from the 2016 and 2017 model years. All have steps and reinforcement brackets in the bumpers that are made of resin. Toyota says if the truck is backed into something, that could damage the step and it could break if a person steps on it, increasing the risk of injury. Dealers will replace the resin reinforcement brackets with new ones that are made of steel. Owners will be notified by letter starting in mid-February.

CISCO TO BUY APPDYNAMICS: Cisco Systems said it intends to acquire U.S. business software company AppDynamics for about \$3.7 billion in cash and assumed equity awards. This is the largest deal for Cisco since it acquired security company Sourcefire for \$2.7 billion in 2013. Cisco said it expects the deal to close by the third quarter of 2017.

ON TV

Watch for the U-T Business Report at 6 and 8 Wednesday mornings on CW Ch. 6.

DIGITS

\$12

Amount per day that commuting costs Americans — who spend an average of 45 minutes every day going to and from work. That works out to 187 hours and \$3,000 annually, according to a survey commissioned by Citibank.

U-T NEWS SERVICES

CALIFORNIA UTILITIES PROPOSE BIG ELECTRIC VEHICLE PUSH

More than \$1B sought; ratepayers would pick up tab

BY ROB NIKOLEWSKI

Three of California's largest utilities, including San Diego Gas & Electric, have put together proposals totaling more than \$1 billion to try to electrify the state's transportation sector.

The costs of the requests by Pacific Gas & Electric, Southern California Edison and SDG&E will be passed on to ratepayers and still need to be approved by the California Public Utilities Commission (CPUC), but the utilities say the projects will go a long way to reducing air pollution and greenhouse gas emissions.

Transportation accounts for 36 percent of greenhouse gas emissions in California,

the largest amount of any sector.

"We all want to breathe cleaner air, which means slowing down the impacts of climate change will require an increased focus on the areas that produce the most harmful emissions," said Caroline Winn, SDG&E's chief operating officer.

SDG&E wants to spend \$244.1 million to install tens of thousands of charging stations in its service area to boost the transition to zero-emission vehicles, trucks, shuttles and delivery fleets.

Southern California Edison's proposal to the CPUC is scheduled to cost \$570 million, which will pay for electric vehicle incentives, rebates for residential charging stations and electrification projects for medium and heavy-duty vehicles.

Pacific Gas & Electric has requested \$253 million, the SEE **ELECTRIC** • C4



JOHN GIBBINS U-T FILE

El Cajon Ford's Savana Delores connected a new electric vehicle to the charging station at the dealership.

S.D. MEDIAN HOME PRICE ENDS YEAR UNDER \$500,000

BY PHILLIP MOLNAR

The median home price in San Diego County ended the year under half a million dollars.

In December, the median was \$495,000, real estate tracker CoreLogic reported Tuesday. It was the same as the previous month and below the year's peak of \$507,500 in October.

In 12 months, the county's home price increased 4.2 percent.

The December resale house median was \$540,000, with 2,156 sales. A resale condo median was \$365,000 with 961 sales, and \$616,750 for newly built homes with 325 sales.

Andrew LePage, data analyst at CoreLogic, said in his report that sales were down across Southern California from December 2015, but that is largely the result of a federal mortgage rule change that delayed transactions that should have closed the prior month.

In San Diego County, there were 3,669 sales in December 2015 and 3,451 sales this December.

SEE **PRICES** • C4

"In five years, it will be able to wash dishes, do laundry and clean the house."

Thuc Vu • co-founder of OhmniLabs, that helped invent the robot Ohmni



RYAN YOUNG NEW YORK TIMES

Herbert Yarbrough and Maxine Duncan are taking part in a robot-assistance test at their retirement community in Walnut Creek.

Seniors try out high-tech helpers

Robots among programmed gizmos that are beginning to reshape elder care

BY CONSTANCE GUSTKE

Welcoming a robot into her family was never Maxine Duncan's idea of a support aide in her older years. But this winter, she and her partner, Herbert Yarbrough, signed up to test a telepresence robot in their retirement community in Walnut Creek. Their new pal has a screen for a head and scuttles around on wheels. The lure was being able to connect more easily with their families via video calls.

The couple were immediately smitten. They have named the robot Jimmy.

"It's an easy name to remember," said Duncan, 86, a former real estate broker. And Yarbrough, 89, takes the robot on the elevator to pick up breakfast downstairs.

"We want to keep up on technology," said Duncan, who covets a self-driving car. "A lot of older people are isolated from people and ideas. Now we're on the cutting edge."

Rosie, the robot from "The Jet-

sons," has arrived.

Early adopters like Duncan are on the front lines of testing new technologies that some experts say are set to upend a few of the constants of retirement. Eager not to be left behind, retirement communities are increasingly serving as testing grounds that vet winners and losers.

Some simple tools that can help older adults are already mass-market consumer items, like Amazon's personal assistant, Alexa. Other inventions, such as virtual reality

technologies and robotic limbs, are still in their early days but could soon provide more freedom, resources and constant care to retirees.

Some technologists see the most promise in the social dimensions. For too long, technology has been chasing problems rather than trying to delight human beings, said Joseph Coughlin, director of the AgeLab at the Massachusetts Institute of Technology.

"Where are the devices that help SEE **ROBOTS** • C4

ILLUMINA EXPANDS WITH HUGE BUILDING

BY BRADLEY J. FIKES

DNA sequencing giant Illumina marked its latest expansion Tuesday by dedicating a massive new manufacturing building on its sprawling Golden Triangle campus.

The 295,000-square-foot-building houses Illumina's research, development, oncology, genetics and reproductive health operations.

Civic leaders including San Diego Mayor Kevin Faulconer congratulated Illumina CEO Francis deSouza on the company's expansion. They were then taken on a brief tour of the five-

SEE **ILLUMINA** • C4



ILLUMINA

The 295,000-square-foot-building houses Illumina's research, development, oncology, genetics and reproductive health operations.

LA MESA PALMS APARTMENTS SOLD FOR \$19M

BY PHILLIP MOLNAR

The 80-unit La Mesa Palms apartment complex was purchased for \$18.97 million last week by the Vista Investment Group.

It was the first acquisition by the Los Angeles-based firm in the San Diego County market. The previous owner was George Olsher, CoStar said.

The complex at 4300 Echo Court was built in 1965 and has an average rent of \$1,527 per month. It was 92.5 percent occupied when sold, Vista said.

"San Diego is one of the most SEE **PALMS** • C4

ILLUMINA • Building provides more research space

FROM C1
story structure, known as Illumina as "Building 6."

With a market value exceeding \$23 billion, Illumina is by far the biggest biotech company in San Diego County. It employs nearly 3,000 people in San Diego and 5,500 globally. In 2015, the company took in \$2.2 billion in revenue.

Illumina's equipment has transformed the study of genomes, the complete set of DNA from an organism, from a rare and expensive process into one that labs around the world routinely perform.

Building 6 is important to

Illumina's growth because it provides space and equipment for the company to research and develop new products, deSouza said.

Human genomics on a large scale can help unravel genetic factors in health and disease. To make this happen, the federal government recently launched a program to study the genomes of 1 million American volunteers.

"San Diego is referred to as the genomics capital of the world," deSouza said. "Obviously we love that term and we believe in it. And we deeply hope that our efforts here create both a global

stage for all the fantastic work that's happening here in San Diego, as well as accelerate what we believe is a revolution in health care that's powered by genomics."

The city is eager to keep Illumina happy and growing. In 2014 the city gave Illumina \$1.5 million in tax breaks over a 10-year period. Biotech companies like Illumina are known for creating desirable jobs at high wages.

San Diego County's biotech and life science employees earned an average wage of \$138,951 in 2015, according to a report from the California Life Sciences Association.

Illumina is also hiring, with about 130 open positions in San Diego, deSouza said.

Illumina is the world's dominant maker of DNA sequencing machines, constantly introducing more advanced products and services. These include human genomics, detection of disease and agriculture.

Moreover, the applications keep expanding as Illumina drives down the cost of sequencing. From millions of dollars per human genome a decade ago, the cost of sequencing has fallen to \$1,000 each. Earlier this month, Illumina said its

newest line of sequencers would eventually lower the cost to \$100 per genome.

The newest sequencers can process batches of 60 genomes in about 60 hours. That's a rate of one genome per hour, although the entire batch must be processed before the sequences are ready.

Faulconer proclaimed San Diego "the center for genomics for the world" in his comments.

"Know that the entire city supports the great work that you're doing here," Faulconer said.

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PALMS

FROM C1
fundamentally sound multi-family markets in the nation, and we have been waiting for the right opportunity to enter the market," said Vista President Jonathan Barach in a news release.

He said Vista will implement a "multimillion" dollar capital improvement plan that will upgrade the buildings' exteriors and grounds and renovate vacant units.

The purchase was leveraged with a \$13.05 million, 30-year loan from Chase Commercial Mortgage Lending, Vista said.

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ROBOTS

Virtual reality offers views of places beyond reach

FROM C1
us learn and expand our horizons?" he said.

Virtual reality, for example, can entertain, educate and engage us, he said.

"It's for young and old alike," Coughlin said. "And it's enjoyed, not needed. That's the high ground." These devices will especially help augment the adult child's caregiver role, he added.

Thuc Vu, co-founder of OhmniLabs, helped invent the robot Ohmni that is Duncan and Yarbrough's companion.

Vu, who has a doctorate in computer science from Stanford, sees consumer robotics as the next big technology wave.

"There's a huge senior population, but isolation and loneliness is still common," he said. "And we're also running out of caregivers, since most of them are getting older."

The OhmniLabs robot was designed with the techno-averse in mind and requires limited computer knowledge. It's connected to Wi-Fi and operated remotely. In its next iteration, the company is working on training the robot to pick up objects.

"In five years, it will be able to wash dishes, do laundry and clean the house," Vu said.

This year, OhmniLabs robots will be offered by a consumer health firm, Home Care Assistance, to retiree communities and people aging in place. The yearly expense is about 20 percent of the cost, on average, of hiring full-time caregivers, according to Lily Sarafan, chief executive of Home Care Assistance.

"In five to seven years, caregiving will shift," Sarafan said. "And a lot of home automation will become more mainstream."

Digital health means more attention to senior care, said Sarafan, who is an



RYAN YOUNG NEW YORK TIMES PHOTOS

Maxine Duncan and Herbert Yarbrough connect more easily with their families through video calls assisted by their robot, which they call Jimmy.

active tech investor and a mentor at StartX.

"Otherwise, aging is a huge challenge," she added.

Brookdale Senior Living, which has over 1,000 residential communities, is also testing new technology. Its Entrepreneur in Residence program invites startups into its communities for short stays to test new gadgets. They include smart-medication devices, virtual reality and family connection apps.

Older adults at Brookdale are eager to offer feedback, said Andrew Smith, the company's director of strategy and innovation. And entrepreneurs also get firsthand experiences with an aging population that has to adapt to their ideas.

"Technology will change

the way people age in America," Smith said. "It's going to drive every dimension of health or social isolation. Nursing homes were once where you'd go to die."

Some devices miss their mark. Brookdale residents tested a body dryer, which is widely used at amusement parks to dry people after a ride.

"But no one would come near it," he said.

Virtual reality, however, has touched residents' hearts.

"Seniors were weeping to see their old homes again," Smith said.

Virtual reality rejuvenated life for Abdus Shakur, 67, who lives in a Brookdale residence in Quincy, Mass. A classically trained chef, Shakur opted to take a vir-

tual trip to a Creole restaurant in Berlin, where he once worked.

By wearing the VR headset, he could check out the current menu and look at the restaurant's colorful redesign.

Shakur's headset was developed by Rendeveer, after a co-founder's mother-in-law's dementia led to communication problems.

"So we're using VR as a mechanism to enhance life," said Dennis Lally, CEO and co-founder of Rendeveer, an MIT company based in Boston. The founders spent hundreds of hours living with residents in Massachusetts to understand their needs, and a crucial lesson was that they often talked about travel.

"Sensory stimulation is



Robot Jimmy is mobile enough to help pick up breakfast downstairs at the couple's retirement home.

important," Lally said. "And VR creates a sense of wonder for the world again." Taking people back in time can even prompt more memories in people with cognitive impairments.

Changing ideas about aging are also affecting how products are branded, said Stephen Johnston, co-founder of the technology accelerator Aging2.0. Some, however, still have a learning curve, such as one startup that used the word "grandparent" in its name. "But not every older person is a grandparent," Johnston said.

Front Porch, which operates retirement communities in California, including four in San Diego County, has been one of the most actively involved in trying out the devices, he said.

The company's Center for Technology Innovation and Wellbeing has tested many products and has been able to provide feedback to inventors and marketers on what works. A robot baby seal named Paro, for example, helped people with dementia communicate, while virtual reality that stimulates the mind worked well, too.

This year, Front Porch will test ride-sharing services and Amazon Echo as part of the internet of things

that can operate smart devices.

"Echo can reach people who are visually impaired," said Davis Park, director of the Front Porch Center for Innovation and Wellbeing. "And it can be interactive. It's a form of companionship."

Front Porch residents have also tested another Silicon Valley invention: the AlterG Bionic Leg, a wearable rehabilitation robotic device that is therapeutic.

Sara Carter, 82, who has had knee replacements and lives in a Front Porch community called Sunny View, tried the bionic leg. After walking back and forth with it, she said it was a useful tool.

"I'm interested in technology that helps people," said Carter, who doesn't own a smartphone. The bionic leg, which was later altered to be lighter and fit better, is on the market.

Retirement communities can be the perfect proving grounds for such devices that will help an aging population, officials say.

"There has been a big problem with asking seniors about these products," Park said. "We're a bridge."

Gustke writes for
The New York Times.

PRICES

FROM C1
Cash buyers made up 18.6 percent of sales last month, far from the peak of 37 percent in February 2013.

Distressed sales, made up of foreclosures and short sales, were down, making up 4.9 percent of sales — down 1.1 percent from 2015. The foreclosure rate was 0.23 percent in October, a big change from 2.99 percent in October 2009. The peak for short sales after the recession was 23.1 percent in January 2012.

Absentee buyers, usually investors who don't intend to live in the home, made up 21.3 percent of sales, nearly unchanged from a year ago. In early 2013, 31.3 percent of sales were to absentee buyers.

Southern California median home prices were up 6.8 percent year-over-year across the board. The biggest increase was in San Bernardino County at 8.7 percent to a median price of \$299,000.

It was followed by Riverside County, which rose 8 percent to \$345,750; Ventura County with a 5.9 percent increase for a median of \$519,000; Orange County with a 5.3 percent increase for a median of \$665,000; San Diego County with a 4.2 percent increase for a median of \$495,000; and Los Angeles County with a 4 percent increase for \$520,000.

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ELECTRIC • Consumer advocacy group has concerns with proposal

FROM C1
bulk going to electric infrastructure aimed at larger vehicles such as buses that currently use diesel fuel. The PG&E proposal also wants to offer "a significant rebate" program for fast-chargers that can power electric vehicles (EVs) in 20-30 minutes.

The applications for the projects from all three utilities amount to \$1.067 billion.

Typical residential SDG&E customers would see an increase of about 71 cents a month to their bills in 2020.

PG&E officials say it would cost their ratepayers less than 28 cents more per month. Southern California said the average residential customer could see a monthly bill increase of 53 cents a month — but about 29 cents for customers who meet income qualifications.

Officials at The Utility Reform Network (TURN), a consumer advocacy group that monitors the state's utilities and the CPUC, said the proposals represent "laudable goals," but the group doesn't like the prospect of customers getting billed for projects that may not necessarily lead to "clear and direct benefits" to all ratepayers, especially in low-income communities.

"The benefits here are basically speculative," said Mindy Spatt, TURN's communications director. "And it's also speculative to assume that massive ratepayer subsidies are going to result in a wave of transportation



K.C. ALFRED U-T FILE

Nissan Leafs are charged at Balboa Park's Blink Pedestal charging stations.

electrification."

SDG&E's project will be paid for by customers "as everyone benefits from reduced emissions and clean air associated with transportation electrification," said SDG&E spokesman Hanan Eisenman.

"In addition, these projects will help encourage off-peak charging that avoids the need to build more power plants."

Eisenman said the plan will put more EVs on the road, optimize the power grid and reduce costs in the long run.

The American Lung Association came out in favor of the SDG&E proposal, which is predicated on the continuing growth in renewable energy

sources in California.

The projects from all three utilities come as the California Air Resources Board (CARB) last Friday reiterated its commitment to slashing greenhouse gas emissions by 40 percent by 2030, compared to 1990 levels.

Spurred by legislative measures such as Senate Bill 350, CARB plans to extend the state's cap and trade program, put 1.5 million emissions-free vehicles on the roads by 2025 and cut the carbon intensity of fuel.

Under provisions of SB350, utilities are required to detail how they plan to reduce greenhouse gas emissions and ramp up deployment of clean energy re-

sources. Utilities are also authorized to "undertake transportation electrification activities."

"The benefits of electric vehicles are growing," said Ron Nichols, president of SCE, "but barriers to their adoption still exist — and utilities and other market participants have a clear role to play in overcoming those barriers."

There are more than 265,000 vehicles classified by California government agencies as zero-emissions vehicles, by far the most of any state in the nation.

But sales for EVs and hybrids have remained flat across the state, largely due to the low price of oil that has

seen gasoline prices in California drop from more than \$4 a gallon as late as July 2014 to \$2.78 this week for a gallon of regular.

"You can't just slap a green label on something and thereby make it effective," said TURN's Spatt. "What we want to see are effective programs that do provide benefits to customers, both environmental and financial. We can't just throw money at the problem, especially when it's customers' money."

Each of the utilities' proposals will now get vetted through the CPUC's regulatory process. The first round of decisions, focusing on the smaller aspects of the proposals, are not expected until the latter portion of this year.

SDG&E's program aims to jump-start the EV sector in the San Diego area through a series of measures.

They include installing up to 90,000 charging stations at single-family homes, putting in up to 45 charging ports for ground support equipment at the San Diego International Airport, and installing charging stations at five locations used by taxis, shuttles and rideshare vehicles.

The plans will build upon the "Power Your Drive" last year that will eventually install electrical charging infrastructure at 350 apartments, condominiums and businesses.

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