

The World in 2030:

10 predictions for
long-term investors



This isn't science fiction



Rob Lovelace

is an equity portfolio manager with 35 years experience.* He is vice chairman and president of The Capital Group Companies, Inc.,SM and is a manager for New Perspective Fund.[®]

The world in 2030 may seem a long way off, but at Capital Group we spend a lot of time thinking about the distant future.

Imagining life in 2030 is not a hypothetical for me. That's because in the portfolios I manage, my average holding period is about eight years, so I'm living that approach to investing.

I know too that most investors are focused on their long-term goals, like funding their retirement and their childrens' education. And yet it's rare to see investment perspective that considers anything beyond the next year or two.

That's why we want to look ahead to 2030 to highlight 10 of the most exciting and in some cases life-changing developments uncovered through our global research efforts. Sure, there will be challenges along the way. But as a portfolio manager, I'm inspired by all the innovations that our team is finding and the potential investment opportunities.

We hope this report helps you put the future in perspective and provides some reassurance that it looks bright for long-term investors.

*As of December 31, 2020.

Investments are not FDIC-insured, nor are they deposits of or guaranteed by a bank or any other entity, so they may lose value.

1. Health care innovation will reach warp speed



Rich Wolf is an equity portfolio manager with 23 years experience*. He also has research responsibilities for U.S. medical technology companies and is a manager for The New Economy Fund.®

Star Trek depicted a far-off future where space explorers traveled the galaxies equipped with cutting edge technology such as the tricorder, a hand-held medical device that scanned a person's vital signs, issued a diagnosis and prescribed treatment in minutes. While I don't think we'll have tricorders, I suspect that by 2030 many of us will have devices that will analyze blood, do cardiology monitoring and even remotely check our breathing while we sleep, some of which are readily available.

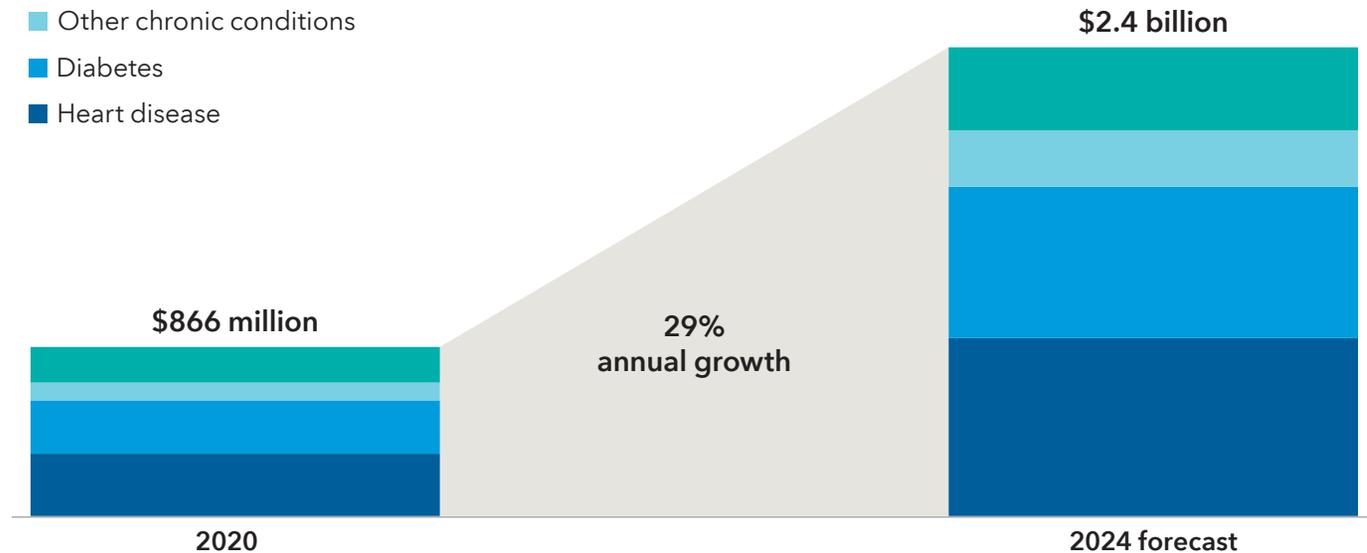
We are already experiencing a massive wave of innovation across the health care sector that will drive new opportunity for companies, potentially reduce overall costs and, most importantly, improve outcomes for patients. Breakthroughs

in diagnostics may lead to earlier detection of illnesses, or in some cases treat disease before it progresses. Genetic testing equipment maker Illumina and research and manufacturing company Thermo Fisher Scientific are providing services to a host of drug developers. One of the most exciting things is the liquid biopsy, whereby a sample of your blood can be used to identify cancer at its earliest stages.

Much of the recent focus has been on the pandemic and vaccine development. These are very important, but we have also been looking over the horizon, trying to determine how health care will transform itself and how we can invest in those shifts.

Revenue of remote patient monitoring devices

- Post-hospital care
- Other chronic conditions
- Diabetes
- Heart disease



*As of December 31, 2020.

Sources: Industry & government data, Kagan estimates, Standard & Poor's. Data compiled June 2020. Values in USD.

2. A cure for cancer may be around the corner



Cheryl Frank is an equity portfolio manager with 22 years experience.* She also has research responsibilities for the health care services sector and drug retail industry. She is a manager for American Mutual Fund.®

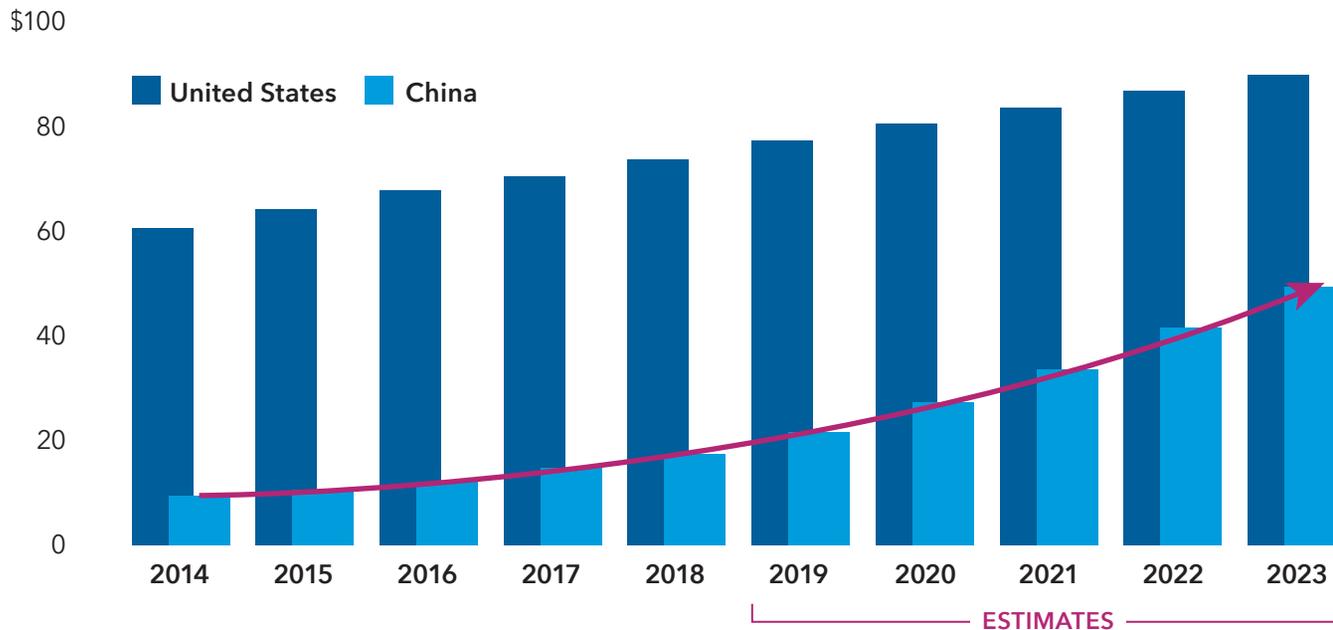
A cure for cancer may be closer than you think. In fact, I believe some cancers will be functionally cured with cell therapy between now and 2030. New, reliable tests should enable very early detection of cancer formation and location. It could largely be eradicated as a major cause of death through early diagnosis.

Vastly reduced costs and scientific developments have contributed to phenomenal growth in research. We're in a renaissance for R&D, and companies are investing aggressively to find unique ways to battle cancer and other illnesses. Therapies derived from genetic testing have the potential to extend lives

and generate billions of dollars in revenue for companies that develop them.

I wouldn't be surprised to see increasing amounts of pharmaceutical innovation come from outside the U.S. In fact, I expect to see many blockbuster drugs from China by 2030. The country has the biggest population of cancer patients in the world, and it's significantly easier to enroll those patients in clinical trials. I believe they will begin to produce novel drugs within five to 10 years and sell them in the U.S. at one-tenth the cost.

Pharmaceutical R&D spending (billions USD)



*As of December 31, 2020.

Source: Statista. 2019 through 2023 are estimates.

3. Cash will be but a distant memory



Jody Jonsson is an equity portfolio manager with 32 years experience.* She is president of Capital Research and Management CompanySM and a manager for New Perspective Fund.

A decade from now I think digital payments will be the norm, and people will give you odd looks if you try to pay with cash.

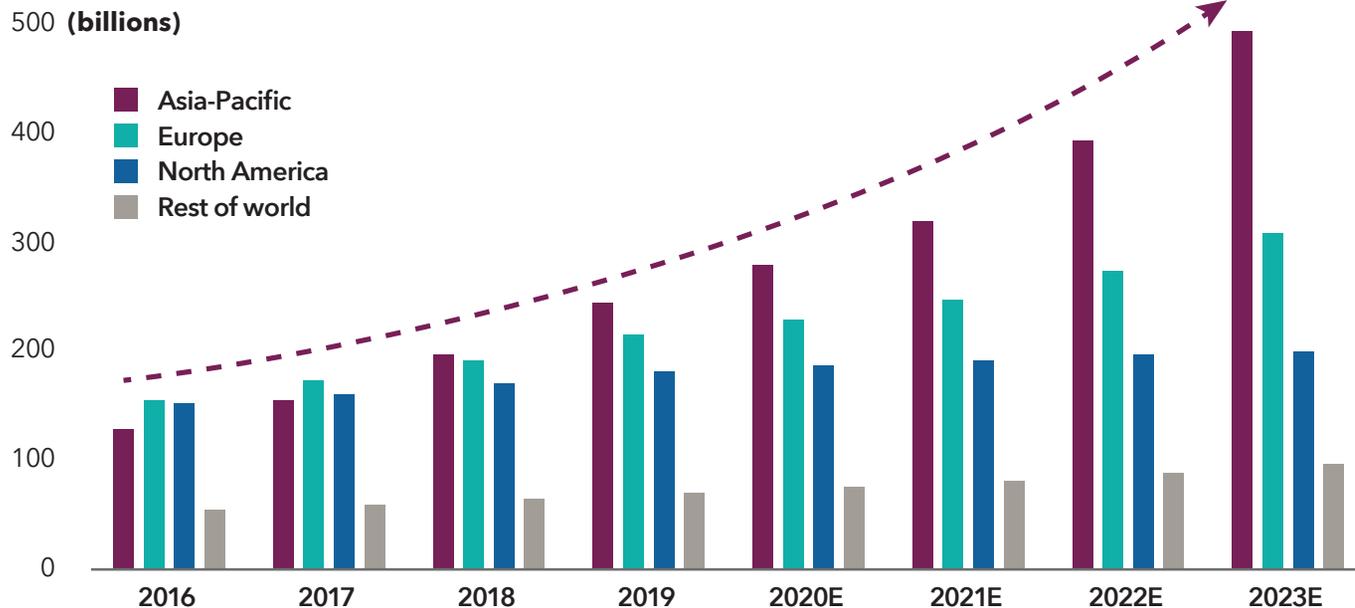
This is one area where emerging markets are ahead of the U.S. We've seen this trend for several years in developing countries where many consumers had no bank accounts, but did have mobile phones and adopted mobile payment technology quickly.

The pandemic accelerated use of digital payments around the world, including places where they weren't being used as a

function of daily life. Once this crisis is over, I think a lot more people will be comfortable making digital payments, and they probably won't feel the need to use cash as often.

As consumers become increasingly comfortable with technology, companies with large global footprints could be poised to benefit. We've also seen strong growth in smaller companies outside the U.S. that offer mobile payment platforms for merchants.

Number of digital payment transactions



Source: World Payments Report 2020 from Capgemini. 2020–2023 are estimates. Figures reflect all non-cash payments. No third party whose information is referenced in this report under credit to it, assumes any liability towards the user with respect to its information.

*As of December 31, 2020.



Martin Romo is an equity portfolio manager with 32 years experience.* He is president of Capital Research CompanySM and a manager for The Growth Fund of America[®] and The Investment Company of America[®].

COVID will be remembered as a major turning point

Ten years from now I think we will look back on COVID as our generation's "Pearl Harbor moment" – a period when extreme adversity spurs innovation and behavioral changes to help address some of the era's biggest problems. At the time of Pearl Harbor, the U.S. artillery was 75% horse drawn. Let me say that again: In 1941, three quarters of our artillery depended on horses. Yet by the end of the war we had entered the atomic age. That incredible transformation sparked a period of innovation and growth in the U.S. economy that lasted for decades.

COVID could be the trigger that spurs us to tackle critical issues over the next decade, such as the cost of health care, education and housing. We've already seen the development of COVID vaccines at a speed few thought possible. And we're doing things in our daily lives we never imagined would happen so quickly.

In 2030 we may be living, working, studying and playing in a radically new world. Our lives could be better, richer, healthier, cheaper and profoundly more digital, virtual and data centric. Many of the technologies already exist, but I believe there's still so much untapped potential for innovative companies to think bigger and apply them in ways that solve societal problems.

*As of December 31, 2020.

4. Semiconductors will be everywhere – and in everything



Steve Watson is an equity portfolio manager with 33 years experience*. He is a manager for New Perspective Fund.

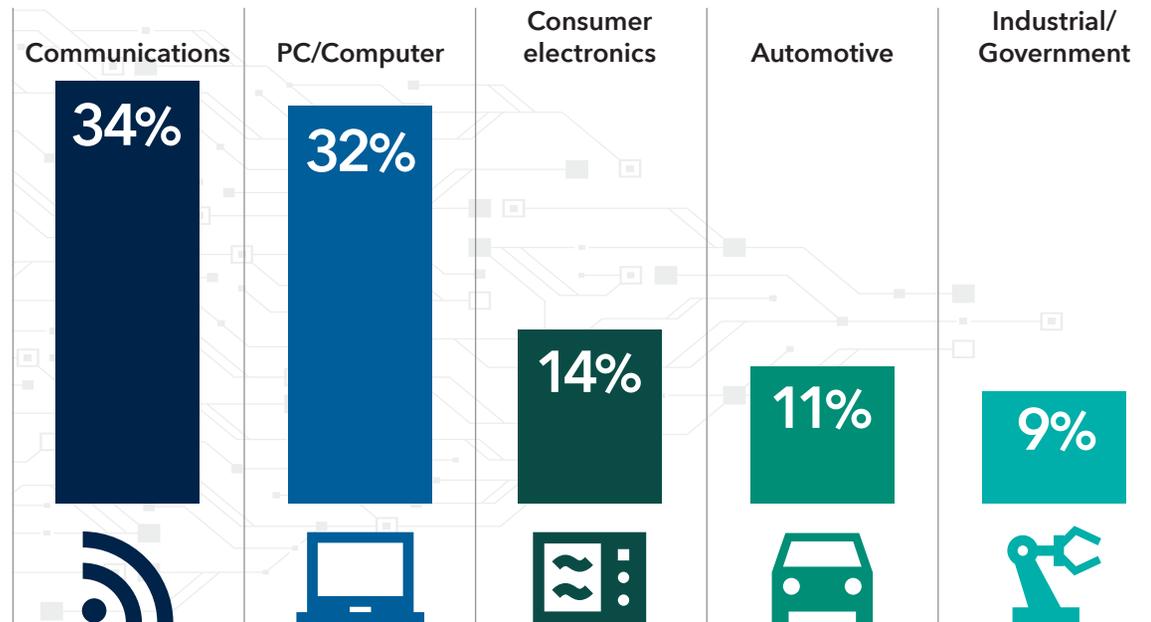
It's said that only 10% of everything that can be measured is being measured today. But I wouldn't be surprised if it was actually closer to 1%. I think one thing that's going to be vastly different a decade from now is the penetration of semiconductors to monitor many more aspects of our daily lives.

Most of this will be through products we already have – phones and tablets, automobiles, entertainment systems and appliances. Wearables are becoming more sophisticated and will help us track our workouts, sleep and overall health. These devices will feel familiar, but we'll be able to use them in ways we never could before.

Cars are being equipped with more electronics every year. The recent global shortage in automotive chips underscores the dependence the industry now has on chipmakers. As vehicles become autonomous, they will require even more advanced components to make them safe and efficient.

Over the next decade, I expect chipmakers to be working overtime to satisfy the robust demand for semis across industries. In my portfolios I'm interested in companies that may be misunderstood by the market but are working on transformative ideas to change daily life.

Uses for semiconductors (2025 forecast)



*As of December 31, 2020.

Source: Bloomberg. Data represents the share of all semiconductor device applications in 2025, as forecast by Bloomberg.

5. Wearable technology will blur the lines of reality



Mark Casey
is an equity portfolio manager with 20 years experience.* He is a manager for The Growth Fund of America.

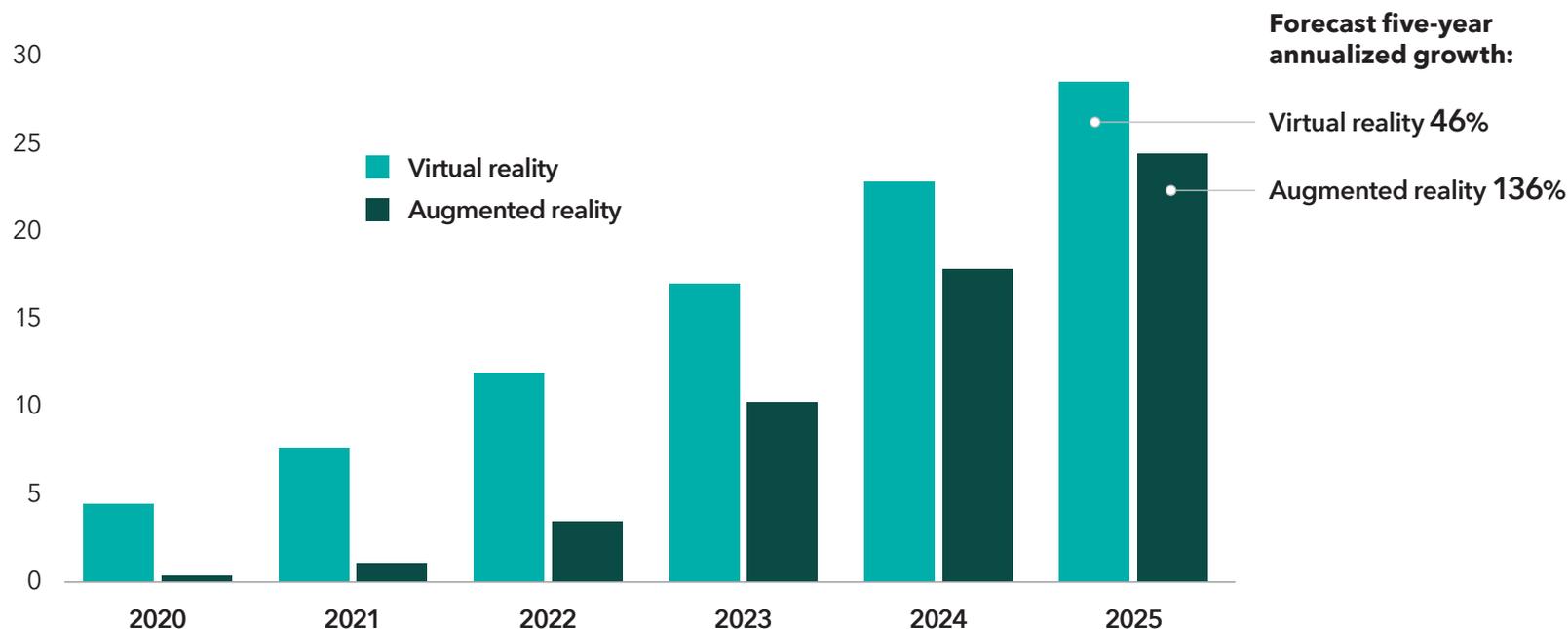
For my look into the future, I'm reminded of the Babel Fish from "The Hitchhiker's Guide to the Galaxy," a great science fiction novel. The Babel Fish was a small, bright yellow fish. If you put it in your ear, it would feed off brainwaves around you and let you understand anyone who spoke to you, even if you weren't familiar with their language.

In 10 years, I think there will be devices powerful enough to make real-time translation a reality. Perhaps wireless earbuds translate the voices and smart glasses do the same with foreign text. Devices like these could transform the tourism industry, giving

people more confidence to travel to and possibly even live in countries where they don't know the native language.

Improvements in machine learning, smart wearable devices and augmented reality could enable other helpful features. Imagine if your smart glasses had an overlay that provided – each time someone approached you – that person's name (provided you'd previously met), and when and where you saw that person last. The Apple Watch and Google's Fitbit are quite useful already, and I'm excited to see what new features they and their competitors deliver between now and 2030.

Worldwide hardware shipments (millions)



*As of December 31, 2020.

Source: IDC (report #US47225121). 2021-2025 are forecasts from IDC, as of January 2021.

6. Digital entertainment will take center stage



Brad Barrett is an investment director and an equity investment analyst with 20 years experience*. He has research responsibilities for media, cable and satellite, advertising-driven internet companies and telecommunications services in the U.S.

They say content is king. But the platform is the kingdom.

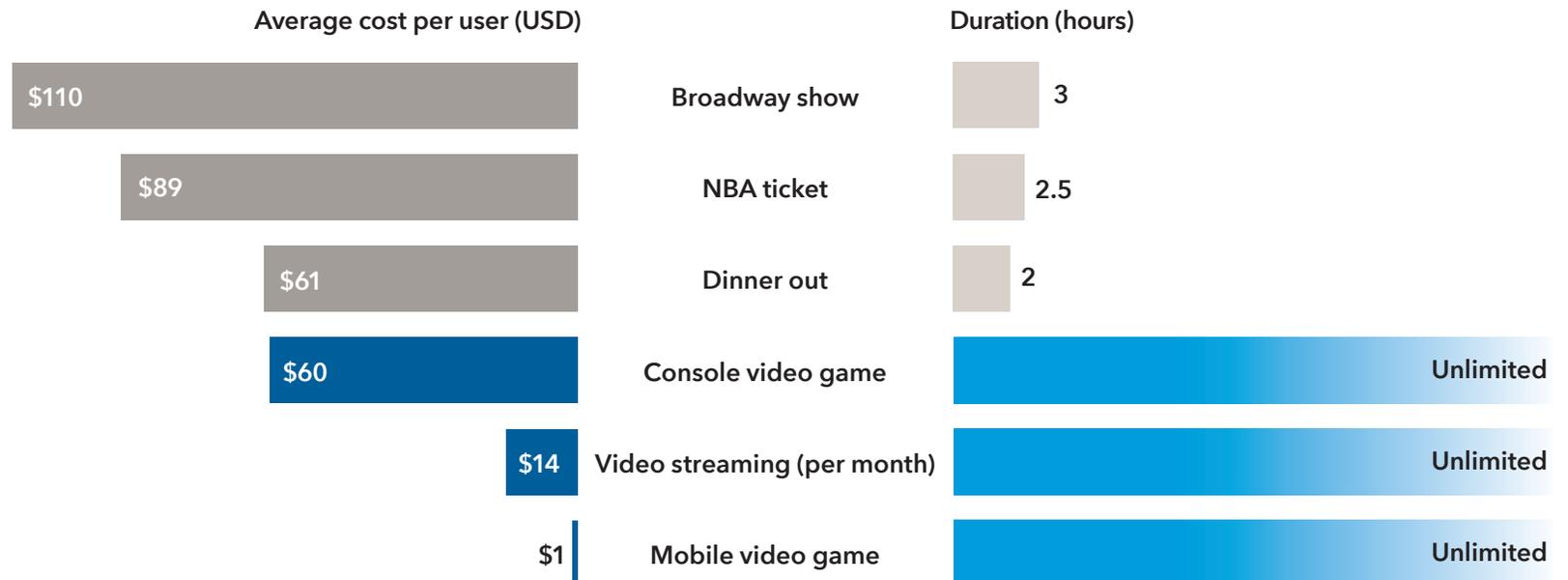
The shift to streaming content accelerated in the wake of COVID, but it may still be in its earliest stages. Roughly one-third of all content consumption is currently transacted via streaming, but by 2030 I think that's going to increase to more than 80%.

You have this incredible combination of streaming being both better and cheaper than traditional television, and I don't see that changing. The network effect can be extremely powerful – the bigger a streaming platform gets, the more it can reinvest

in content, which could help lower costs and attract even more users. Due to economies of scale and high barriers to entry, I expect a winner-take-most market structure in the future, and those are the type of companies I want to be invested in.

Similarly, the video game industry will likely continue its explosive growth into the next decade. I also suspect virtual and augmented reality will become more mainstream. As the technology evolves, these may even achieve an experience similar to attending a concert, sporting event or Broadway show, but likely at a fraction of the cost.

Trade-off between cost and duration of different types of entertainment



Sources: Capital Group. Broadway show cost from Jefferies, as of July 2019. NBA ticket cost from Barrytickets for 2018-19 season. Console video game cost from Business Insider, as of October 2018. Video streaming cost is for a standard monthly Netflix subscription as of December 2020.

*As of December 31, 2020.



Lisa Thompson is an equity portfolio manager with 32 years experience.* She is a manager for New World Fund.®

Remote work will reshape industries

As remote work becomes more common, I think we will see many people relocate to suburbs and smaller cities. Even if working from home is only an option for two or three days each week, a longer but less frequent commute will be worth it for many. This shift would have implications that span a variety of industries.

De-urbanization would obviously impact office and commercial real estate in city centers. Companies may downsize their headquarters if many workers are remote and instead opt for smaller satellite offices. However, lower rents could be a positive for housing affordability and smaller retail businesses.

I think the restaurant sector may look very different in 10 years. Many restaurants have reinvented themselves during the COVID era, and I think those that are able to adapt to shifting customer preferences will be the most successful. I expect we'll continue to see the ghost kitchen concept – where you have the equipment and facilities to prepare meals, but the value will be in providing customers with the options of dining and entertaining at home. Potential winners outside the food industry may include retailers of athletic casual wear, home improvement, furniture and décor.

Even if older generations spend less time in cities, I still expect young adults will flock to them. Cities will just recreate themselves, as they have in the past. The impacts of such a structural shift present an opportunity for investors who think long term.

*As of December 31, 2020.



7. Autonomous vehicles will hit the fast lane



Chris Buchbinder is an equity portfolio manager with 25 years experience*. He is a manager and principal investment officer for The Growth Fund of America and The Investment Company of America.

Ready for a ride in your robotaxi?

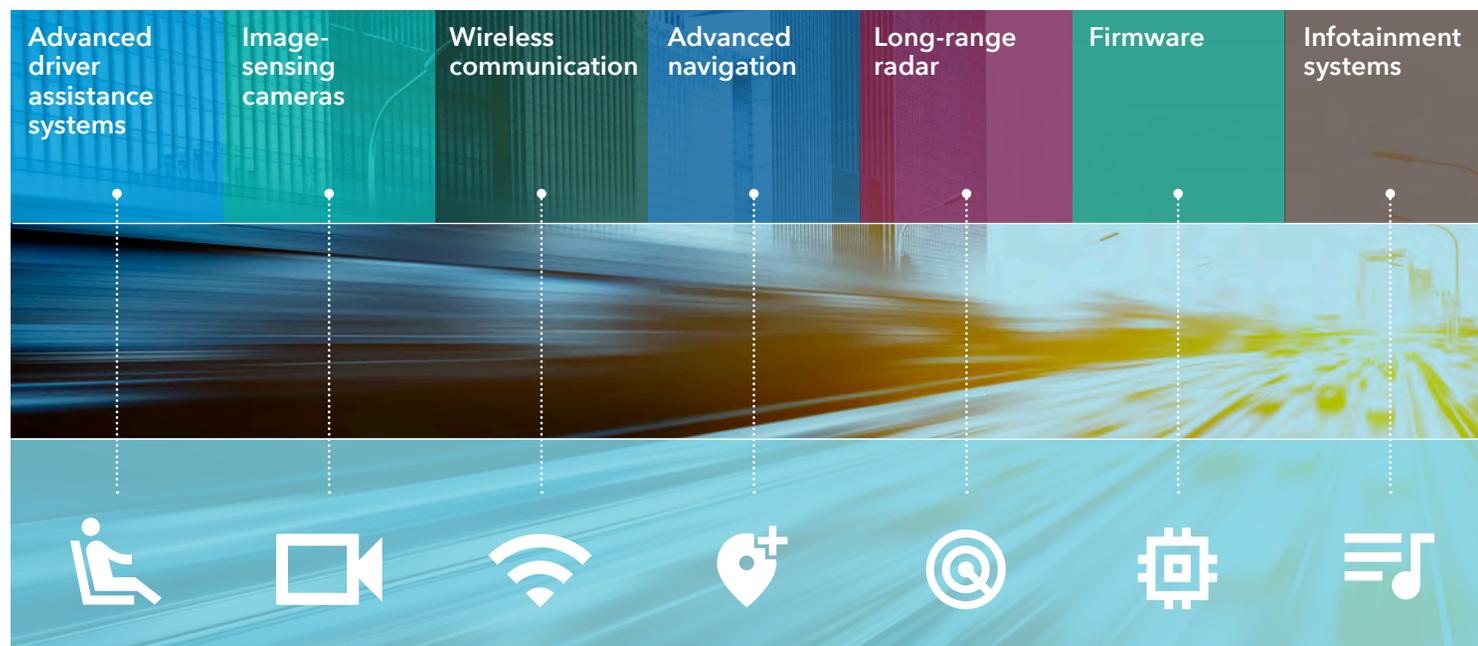
I think in 2030 we will have broadly deployed fleets of autonomous electric vehicles operating in cities throughout the world. Ownership of a personal vehicle will go from being a necessity to a luxury. Many people will still have vehicles – just like people ride horses or bicycles for fun –but they will no longer be necessary as a primary form of transportation in major cities.

This is an area I believe the market has yet to fully appreciate. At the moment, the market leaders are embedded in other companies – such as Alphabet’s Waymo, Amazon’s Zoox or the Cruise division of GM – so investors can’t buy a pure-play autonomous driving company. But as these fleets roll out more

publicly, the market should start to reevaluate these companies and realize this is a real business, not a science project. As vehicles become more about technological components and less about traditional manufacturing, winners will emerge from a variety of industries.

I also think 2030 is when we’re likely to see hybrid electric engines and hydrogen engines introduced into commercial aircraft, with widespread deployment over the following five to 10 years. The impact on global emissions could be significant if we transition to a world with autonomous electric vehicles on the road and aircraft transportation shifting from oil-based fuel to a mixture of oil, electricity and hydrogen.

Self-driving cars will be computers on wheels



*As of December 31, 2020.

Source: Capital Group.

8. Green machines will rule the road



Kaitlyn Murphy is an equity analyst who covers U.S. chemicals and automobile & components manufacturers and railroads for the U.S. and Canada. She has 16 years investment experience.*

Ladies and gentlemen, start your batteries.

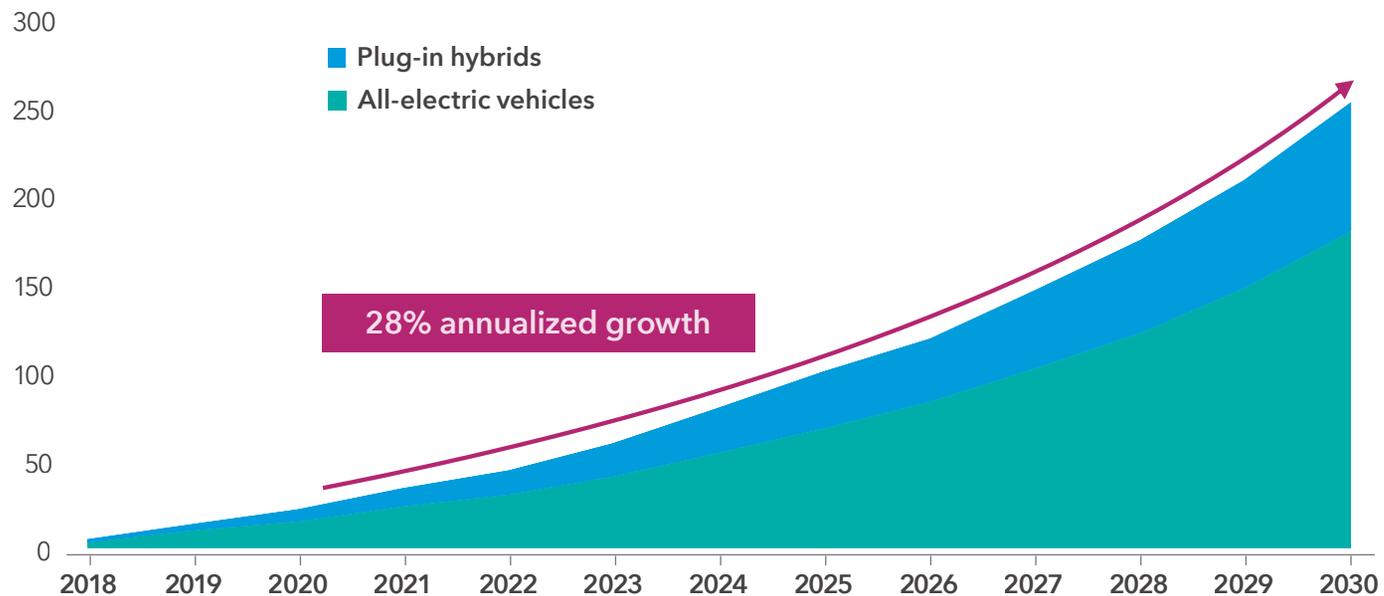
Global electric vehicle (EV) sales are expected to rise 28% a year over the next decade, but I believe those estimates may be too conservative. Rapidly declining battery costs and innovative developments will potentially make EVs cost competitive not only with new gas-burning cars but with the entire fleet currently on the road, including used cars. That's about 270 or 280 million vehicles in the U.S. If you take a long-term view, that suggests there could be much stronger growth than the market expects.

GM's recent announcement to go all-electric by 2035 signaled an inflection point for the auto industry and was followed shortly by Volvo's promise to only produce EVs by 2030.

An innovation that will not only drive cost considerations but also transform the total customer experience is the introduction of software-defined EVs. The software receives over-the-air updates to improve functionality and safety and also provide entertainment. Through these updates a vehicle could potentially be a better product five years *after* its purchase. With that approach, an EV maker can reverse some of the severe depreciation associated with older cars.

As an investor, I am seeking to identify companies with the potential to not only make money selling the cars but also successfully roll out subscription packages that include managing your battery, providing in-vehicle entertainment and improved safety, and also self-driving technology.

Electric vehicle fleet worldwide (millions units)



*As of December 31, 2020.

Source: IEA, Electric vehicle stock in the EV30@30 scenario, 2018–2030, IEA, Paris. Data for 2020–2030 are forecasts, provided by IEA.

9. Renewable energy will power the world



Noriko Chen is an equity portfolio manager with 22 years experience.* She serves on the Capital Group Management Committee and is a manager for EuroPacific Growth Fund®

I believe we'll see a dramatic shift toward renewable energy over the next decade. We are in the early stages of the transition to an electrification of the grid and green energy, and there are strong tailwinds that could drive growth through 2030 and beyond.

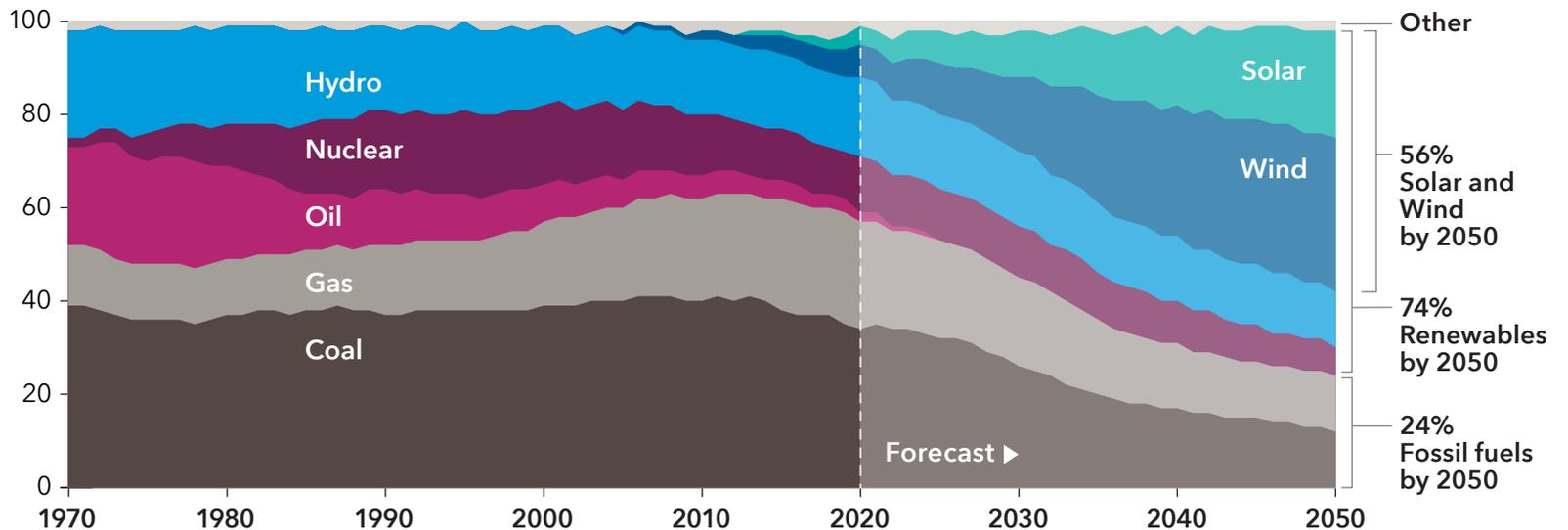
Automation and artificial intelligence are setting the stage for a golden age in renewables – pushing costs down while boosting productivity and efficiency.

Renewable energy has historically been perceived as expensive, impractical and unprofitable – but all that is quickly changing. Some traditional utilities are already generating more than 30% of

their business from renewables and being recognized as growth companies rather than staid, old-economy power generators and grid operators.

The move is most pronounced in European utilities, including Enel in Italy, E.ON in Germany and Denmark's Ørsted. Some European governments have set high decarbonization targets. For example, the Renewable Energy Directive stipulates that a minimum of 32% of energy in the European Union should come from renewable resources by 2030.

World power generation mix (%)



Source: Bloomberg, New Energy Outlook 2020, a detailed study on global energy demand and supply conducted by 65 analysts for Bloomberg New Energy Finance. "Other" includes geothermal, biomass, etc.

*As of December 31, 2020.

10. Innovative companies will make the world better



Anne-Marie Peterson is an equity portfolio manager with 26 years experience.* She is a manager and principal investment officer for The Growth Fund of America.

As a growth investor, I look for companies whose products or services can improve the world, and a lot of the transformational change we are seeing today has that potential. I look for growth in three broad stages, depending on where a company is in its life cycle – early stage growers, durable businesses with long runways and mature companies getting more from their existing assets.

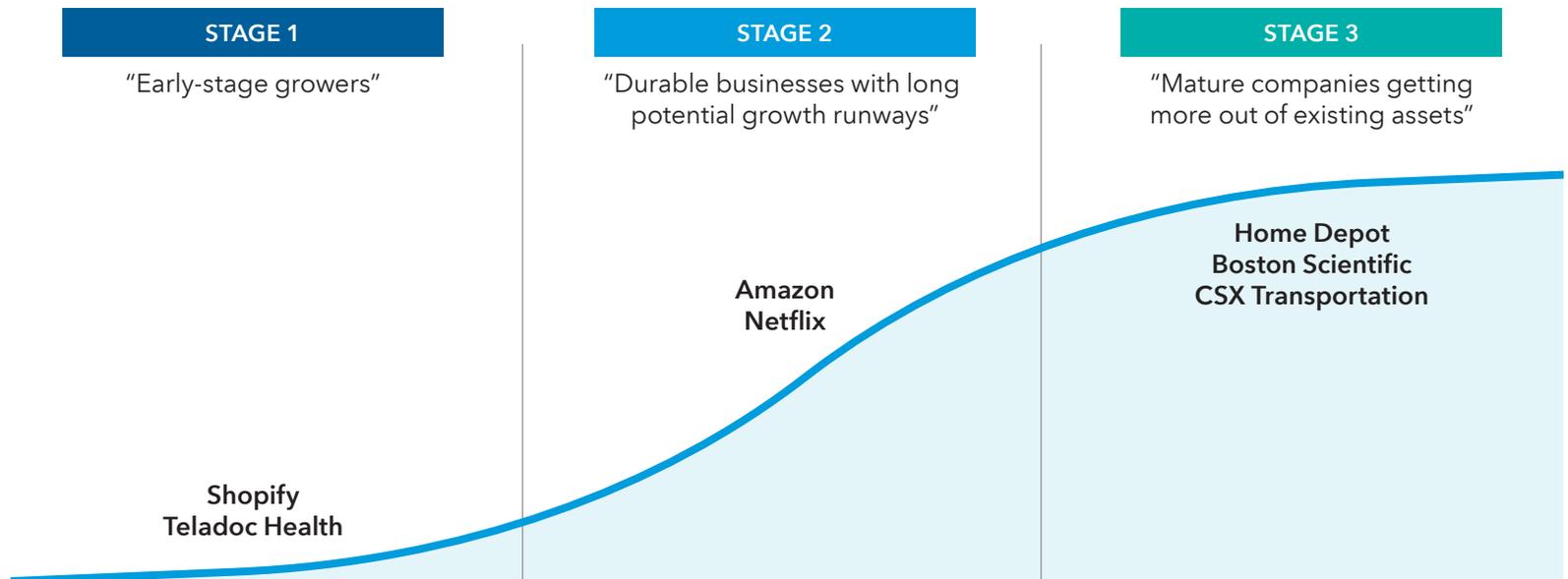
The bottom line is that we are living in an incredible time of change. Change drives opportunity for active investors like us.

Take retailers as an example. Historically, a big investment budget and IT department would be needed to run a retail operation.

Now we are starting to see a wave of back-end infrastructure development with the potential to empower small- and medium-sized businesses by lowering the barriers of reaching customers and managing inventory. Online retailers will be launched in as little as 15 minutes.

Similarly, I think we will see the democratization of health care. Remote medical devices and robotics will allow a specialist in Japan to perform a procedure on a patient in Nebraska. Anyone will have access to leading specialists, no matter where they live. The pieces are in place, and all of this has the potential to improve outcomes, reduce costs and save lives.

Three potential stages of growth in a company's life cycle



*As of December 31, 2020.

Source: Capital Group. Company examples are for illustrative purposes only.

What's not changing? The importance of long-term investing



Andrew Suzman is an equity portfolio manager with 27 years experience*. He serves on the Portfolio Solutions Committee and is a manager for EuroPacific Growth Fund.

My colleagues may be able to look at the future and imagine new products and trends, but I'd like to predict one thing that won't be different in 2030. Despite all the change in the world, I believe the nature of my job and focus as a portfolio manager will be exactly the same.

In 2030, just as we did in 2020, 2010, and every year before, we will come upon individual companies that do interesting things.

We'll try to buy them at reasonable prices and hold them so that any returns we see may be better than if we were to buy all companies. That is my true north. Some companies will get it right, and some will get it wrong. Our job is to find those most likely to get it right and create wealth over time so that our investors may benefit. Not that we'll be perfect, but I'm optimistic that we can get more companies right than wrong and continue to add value for our clients.

Long-term compensation is built into The Capital SystemSM



Industry



*As of December 31, 2020.

Source: Capital Group. Compensation paid to our investment professionals is heavily influenced by results over one-, three-, five- and eight-year periods, with increasing weight placed on each succeeding measurement period to encourage a long-term investment approach.

10 predictions for the next decade:

1. Health care innovation will reach warp speed
2. A cure for cancer may be around the corner
3. Cash will be but a distant memory
4. Semiconductors will be everywhere – and in everything
5. Wearable technology will blur the lines of reality
6. Digital entertainment will take center stage
7. Autonomous vehicles will hit the fast lane
8. Green machines will rule the road
9. Renewable energy will power the world
10. Innovative companies will make the world better



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*Source: Fund Intelligence, February 20, 2020. FUSE Research survey of nearly 600 advisors identifying the “most-read thought leaders.”

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Investing outside the United States involves risks, such as currency fluctuations, periods of illiquidity and price volatility. These risks may be heightened in connection with investments in developing countries. Small-company stocks entail additional risks, and they can fluctuate in price more than larger company stocks.

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