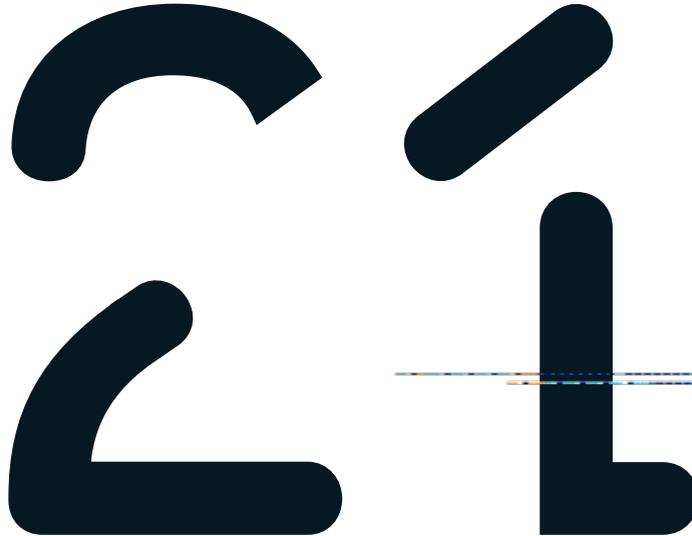






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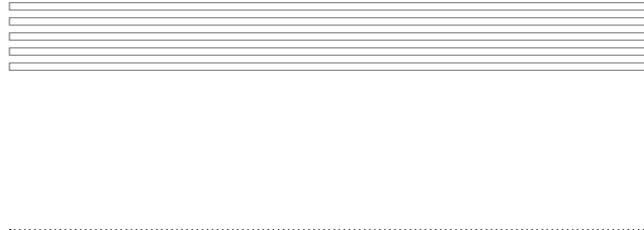


CENTURY
CORPORATION

EVERY ASPECT OF YOUR
BUSINESS IS ABOUT TO CHANGE.

Imagine an economy without friction—a new world in which labor, information, and money move easily, cheaply, and almost instantly. *Psst*—it's here. Is your company ready?

BY GEOFF COLVIN



• **Cars bursting into flames are never a good thing.**

So when a Tesla Model S ran over a metal object in Kent, Wash., in October 2013 and burst into flames, owners, potential customers, investors, and company executives got worried. When the same thing happened a few weeks later in Smyrna, Tenn., federal regulators opened an investigation. We all know what happens next: a massive recall, costly repairs at dealerships nationwide, and a painful financial hit to the carmaker.

Yet none of that occurred. The problem was that the Model S could lower its chassis at



Andrew Liveris
 CEO : DOW



+

THE NEW RULES OF RESEARCH AND DEVELOPMENT

DO IT FAST.
 All innovation has become short cycle; long cycle is a luxury companies can't afford. Speed is survival.

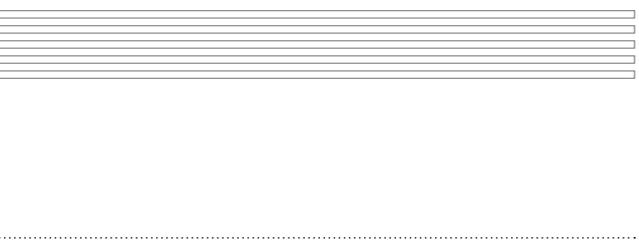
GET OUT OF THE LAB.
 It's a necessity to link your lab bench to the factory floor.

KNOW THE END CONSUMER.
 You can't be just a B2B company. Earn a seat at your customer's design table.

highway speed to be more aerodynamic, and if debris hit the car's battery pack in just the wrong way, it could catch fire. So Tesla beamed a software update to the affected cars, raising ground clearance at highway speed by one inch. The problem went away. Just four months after opening their investigation, the regulators closed it.

Using software and the mobile-phone network, Tesla avoided any need for a recall. It doesn't have any dealerships; customers can configure and order a car online, and they can test-drive cars at com-

LIVERIS: ORIGINAL PHOTOGRAPH: CHRIS RAPOULFE—BLOOMBERG VIA GETTY IMAGES



pany-owned showrooms. Tesla's advanced electric technology is simpler than gas or diesel technology, so cars can be built with fewer employees and less capital. Combine those factors and here's what happens: General Motors creates about \$1.85 of market value per dollar of physical assets, while Tesla creates about \$11. GM creates \$240,000 of market value per employee, while Tesla creates \$2.9 million. You don't get differences like that just by being more efficient. Tesla, though in the same business as GM, is a fundamentally different idea.

GM is changing, but for now it's still a 20th-century corporation. Tesla is a 21st-century corporation, built for sweeping new realities that change the rules of success. The big theme is the arrival of the long-heralded friction-free economy, a new world in which labor, information, and money move easily, cheaply, and almost instantly. Companies are forming starkly new, more fluid relationships with customers, workers, and owners; are rethinking the role of capital (as traditionally defined), finding they can thrive while owning less and less of it; are creating value in new ways as they reinvent R&D and marketing; and are measuring their performance by new metrics because traditional gauges no longer capture what counts.

Not all 21st-century corporations are glamorous Silicon Valley startups. They can be of any age and in any industry (even cars). Nike is a 21st-century corporation, aggressively reinventing manufacturing with 3D printing and cannily using social media for marketing. General Electric is becoming one, if partly as a result of shareholder frustration and outside pressure. Every company needs to be one.

The new realities begin at capitalism's foundation, capital. In a friction-free economy, a company doesn't need nearly as much as it used to. Consider the world's most valuable company, Apple. Unlike Google and Microsoft, the second and third most valuable firms, Apple gets most of its revenue from selling physical products. Yet the company says "substantially all" of its products are

THE BLOODSTREAM

OF THE ENTERPRISE

New apps and cloud-based tools are turning far-flung workers into hives of collaboration—and connecting companies with their customers as never before.

IN ONE EPISODE OF HBO's hit television series *Silicon Valley*, the CEO of a Google-like corporation called Hooli tries (and fails) to use its latest invention, a hologram machine, during a meeting with his executive team. The future may be here, but it must first be buffered.

Technical issues aside, there is plenty of truth to the scene. Today's companies no longer confine their personnel to a central office to conduct business. With cloud-based tools available to send messages,

store documents, host videoconferences, and refine ideas, it is now customary to see employees around the globe working with partners, customers, and one another throughout the workday—no headquarters necessary.

Distributed teams must devise new processes to keep everyone on the same page. At GitHub, an online code-hosting service based in San Francisco, 60% of employees are located elsewhere, according to vice president of product Kakul Srivastava.

Individual teams rotate the times of their recurring meetings to "distribute the pain of odd time zones as much as possible," Srivastava says. But it's worth it. Embracing remote workers allows GitHub and other companies to hire the best people they can find.

Positioning employees outside corporate headquarters also means that modern companies are increasingly building their infrastructure outside their walls. Entire suites of critical business applications and services are now housed in the cloud and accessible by mobile devices.

"People want to be able to write down that idea from anywhere and are expecting people to respond to them from anywhere," says Scott Johnson, director of product management for Drive, Google's file-storage service. They also want that flexibility to (safely) extend to people outside the company.

But according to Rowan Trollope, who leads Cisco's collaboration technology group, the future holds something greater: "ambient computing," in which you can get to work using any number of Internet-connected, sensor-equipped devices—no phone number needed. Holograms? Has-beens. The 21st-century enterprise is everywhere.

—Kia Kokalitcheva



MARKET VALUE PER DOLLAR OF PHYSICAL ASSETS

WHO NEEDS PHYSICAL ASSETS? More companies are creating high value with scant hard assets, even if—like Apple, Fitbit, J&J, and Tesla—they make tangible products.

made by others. Because it can coordinate vastly complex global supply chains, it can pay those firms, mostly Foxconn, to make its products and get them where they need to be on time. Apple has even rented other companies' servers to host its iCloud service so that it can add or remove capacity easily, paying only for what it needs.

The U.S. government classifies Apple as a manufacturer, and with some 500 brick-and-mortar stores worldwide, its total capital—\$172 billion of it, according to the EVA Dimensions consulting firm—is immense. But in traditional models it would need much more. Its achievement is using that capital to stunning effect, creating a market value of \$639 billion. By comparison, Exxon Mobil uses far more capital, \$304 billion, to create a market value, \$330 billion, that's barely half as much as Apple's.

Those are companies that make and sell physical stuff. A friction-free economy also enables companies with virtually no physical capital to compete powerfully with capital-heavy incumbents. It's often observed with wonder that Alibaba is the

world's most valuable retailer but holds no inventory, that Airbnb is the world's largest provider of accommodations but owns no real estate, and that Uber is the world's largest car service but owns no cars. Each has found ingenious ways to take friction out of its industry, connecting buyers and sellers directly and conveniently, enabling new, nearly capital-free business models.

But hold on—actually, those and all 21st-century corporations own tons of capital. Accounting rules just don't always call it that. There is intellectual capital in the form of software, patents, copyrights, brands, and other knowledge; customer capital in the form of relationships with buyers; and especially human capital. The 21st-century corporation, even if it makes or sells physical products, is above all a human-capital enterprise, which raises a profound question: Who really owns it?

IT WAS OBVIOUS long ago that law firms consist almost entirely of human capital, so it's illegal for them to sell stock to the public; outside stockholders couldn't own anything of value. Are consulting firms and ad agencies any different? Even companies that own valuable patents or brands may still get most of their value from human capital. What if the hundred smartest people left Starbucks or Johnson & Johnson or Walt Disney, or what if a crazed CEO tried to destroy each company's titanium-strength culture? In the 21st-century corporation, whether it's acknowledged or not, employees own most of the assets because they *are* most of the assets.

That reality is affecting corporate structure. The number of U.S. corporations increased only modestly and their revenues rose 150% from 1990 to 2008, says the IRS (using the most recent available data), while the number of proprietorships and partnerships, which are owned by their managers, increased far more, and their revenues rose 394%. The 21st-century corporation isn't always a corporation.



Jamie Miller

CEO : GE
TRANSPORTATION



THE NEW RULES OF MANUFACTURING

DIGITAL PROTOTYPING IS CRITICAL.
3D models close the gap between engineering and manufacturing, allowing rapid iteration of products.

LISTEN TO YOUR MACHINES.
Sensors can monitor operating conditions to improve performance and keep downtime to a minimum.

ARM PEOPLE WITH THE DATA TO MAKE SMART DECISIONS.
Real-time dashboards give managers the information they need to constantly increase productivity.



Most businesses will have to create value in new ways or lose out to competitors that do so, often with Internet-enabled business models. The trend is as old as the Internet's early days, when a slew of web insurance upstarts forced term-life premiums to plunge 50% or more—and when user-friendly hotel- and airline-booking sites put some 18,000 travel agents out of business almost overnight. Now entrepreneurs are extending the trend into physical products in sophisticated ways. Warby Parker sells high-quality eyeglasses for a small fraction of what traditional retailers charge by using a low-friction online model; private investors recently valued the firm at \$1.2 billion. Even an industry that seems

highly resistant to online disruption, consumer packaged goods, is threatened. Harry's and Dollar Shave Club, which make and sell men's grooming products online, are forcing Gillette (owned by Procter & Gamble) to promote its wares on value, not just quality, for the first time.

The trend is especially frightening for even established category leaders because even if they switch to new, low-friction business models, they could still end up smaller and less profitable than they were. That's because "some tech and tech-enabled firms destroy more value for incumbents than they create for themselves, and many gains are competed away in the form of consumer surplus," says the McKinsey Global Institute. For example, Microsoft's Skype service brought in some \$2 billion in 2013, yet McKinsey calculates that in that year Skype transferred \$37 billion away from old-guard telecom firms to consumers by giving them free or low-cost calls.

Other new business models have similar stories. San Francisco's taxi regulator reported that the number of fares per licensed cab fell 65% from March 2012 to July 2014 as Uber, Lyft, and others entered the market. Uber—see our companion story in this package—is currently valued at \$51 billion by its investors. Meanwhile, the cumulative market value of every New York City taxi medallion is less than \$13 billion, as *Fortune* reported in September.

When Airbnb entered Austin, hotel revenue dropped 8% to 10%, say Boston University researchers, and "affected hotels have responded by reducing prices, an impact that benefits all consumers, not just participants in the sharing economy." Yet the new companies causing the disruptions collect only a fraction of what the incumbent firms lose.

The 21st-century corporation will increasingly be an idea-based business, operating not just in infotech but also in media, finance, pharmaceuticals, and other industries that consume lots of brainpower. McKinsey finds that while "asset-light,

THE NEW RULES OF LEADERSHIP



Tim Cook

CEO : APPLE

ARTICULATE A HIGHER PURPOSE.
 At Apple, we believe the work should be about more than just improving your own self. It should be about improving the lives of others as well.



Brian Chesky

CEO : AIRBNB

DON'T LEAD BY CONSENSUS IN A CRISIS.
 Usually in a crisis you have to go left or right, and everyone wants to go to the middle. And the middle is the storm.



Howard Schultz

CEO : STARBUCKS

IN THE AGE OF SOCIAL MEDIA ...
 The currency of leadership is transparency.

ORIGINAL PHOTOGRAPH, COOK: DAVID PAUL MORRIS—BLOOMBERG VIA GETTY IMAGES; CHESKY: SCOTT FELS—BLOOMBERG VIA GETTY IMAGES; SCHULTZ: STEPHEN BRASHAR—GETTY IMAGES



**HOW TO
VALUE
THE NEW
BREED**

Few hard assets, no products to speak of, but intellectual capital aplenty. What's an investor supposed to do with that?



THE SO-CALLED UNICORNS, the fast-growing breed of 21st-century startups worth more than a billion dollars, have been so celebrated that it almost seems beside the point to ask, "Are they worth anywhere near their valuations?" Fledgling student-loan provider SoFi recently raised \$1 billion in equity at a valuation of more than \$3 billion. Facebook paid \$19 billion for privately held WhatsApp, a communications tool, before it had meaningful revenue. Uber, which has yet to report a profit, is worth \$51 billion, per its latest private-market funding round. Disruptive or not, is there something that their backers are seeing that those in the rational investing world—they who assess companies on the present value of their future earnings—aren't? It honestly doesn't matter. Private-market valuations are just that, the assessment of a small number of investors operating outside public scrutiny. Public-company valuations are tested every day that markets are open. The

valuations of private companies shift only when they raise more money. In fact, says venture capitalist Keith Rabois of Khosla Ventures, "private-market valuations are more of an art than a science. They are a negotiation, with the venture capitalist asking, 'At what price will somebody who doesn't need my money take my money?'" Several factors account for the abundance of venture-backed

companies that have remained private well past the time they historically would have gone public. Low interest rates have made capital cheap and have encouraged institutional investors to seek superior returns in riskier bets. In turn, with so much available cash, private companies have been in no hurry to seek the glare of public markets. As a result, they are able to raise ever greater amounts at ever higher valuations. Sometimes the eye-popping valuations aren't exactly what they appear to be. For example, in an effort to achieve billion-dollar status—resulting in positive publicity, bragging rights for recruiting talent, and ego stroking for entrepreneurs—some companies accept onerous restrictions in return for higher paper values. Payments-software provider Square, for example, raised money at a

valuation of \$6 billion while promising investors that an IPO price below an agreed-upon level would trigger the issuance of additional shares. This would dilute other shareholders—and possibly hurt the valuation of the company. All this behind-the-scenes maneuvering eventually ends, of course, when companies finally go public. Already, tech companies like Box and Hortonworks have been unable to hold public values that exceed their previous private valuations. A unicorn, after all, is a mythic animal whose true value is in never being seen. Public companies have nowhere to hide. The new cohort may continue to innovate, but eventually they, too, will be worth only what money they can make for their shareholders over time. —Adam Lashinsky

idea-intensive sectors" generated 17% of Western companies' profits in 1999, they generate 31% today. The losers in that shift are capital- and labor-intensive sectors like construction, transportation, utilities, and mining. That doesn't mean companies in those industries are doomed. As Tesla shows, they may be able to prosper if they're reimaged. Or they can succeed if they redefine success. An intensifying source of pressure on companies of all kinds is the rise of competitors willing to sacrifice profits for growth. Frequently they are family-owned or state-owned companies that have achieved massive scale in emerging markets. For example, Alcoa's recent decision to split into two companies, a high-tech materials business and a commodity aluminum producer, was prompted

in part by the cost advantage achieved by giant Chinese aluminum smelters; forced to compete with them, Alcoa's commodity business was dragging down the whole company. As emerging-market companies increase their share of global business—they're now about 30% of the *Fortune* Global 500—the profit pressure will increase. Further pressure will come from another category of 21st-century corporations that sacrifice profits for growth, those that see vast territories to be grabbed in new-model businesses. Exhibit A is Amazon, which famously reports little or no profit quarter after quarter. Investors agree with CEO Jeff Bezos that the money is better invested in expansion; future profits will be that much greater as a result. The stock recently hit an all-time high.

THE APPLE CONTINUUM: Right, Foxconn employees on the line in Shenzhen, China; below right, Apple Store workers in Tokyo cheer before the launch of the iPhone 6.

SOME OF THE DEEPEST RETHINKING to be done by 21st-century employers will follow from this question: What happens when the labor market becomes friction-free? It's clearly headed that way, as the rise of the gig economy shows. Companies still employ full-time workers who aren't really needed full time, but keeping them on staff is easier than constantly hiring and firing. At least it used to be. Now employers are hiring millions of workers worldwide to do information-based work through online marketplaces such as Upwork; each worker is rated by previous employers, and you don't pay unless you're satisfied with the work. While much of the work is routine, like language translation, a marketplace called HourlyNerd rents out former consultants and top business-school graduates to help with strategic planning, financial analysis, and other high-level tasks; customers are mostly small and medium-size businesses but have also included giants like General Electric and Microsoft.

Project the trend a few steps further, and the whole model of employment could change fundamentally. Employee-owned businesses are likely to increase, but they're just one option among many, which may eventually include a far more radical structure. Former Cisco CEO John Chambers said in June that "soon you'll see huge companies with just two employees—the CEO and the CIO." It's crazy,



**Aneel
Bhusri**

CEO AND
CO-FOUNDER
: WORKDAY

THE NEW RULES OF EMPLOYEE RELATIONS

BE TRANSPARENT TO ENGAGE YOUR EMPLOYEES.

Communicate consistently about what's going on at your company and have mechanisms for getting real feedback—especially for millennials.

CREATE CAREER PATHS. Turnover is one of the greatest threats to growth.

Provide your employees with opportunities to learn. If you do it right, your top performers won't be so quick to leave.

CULTURE MATTERS.

Align around a set of core values and a shared vision that get everyone focused on the same mission. And remember that happy employees make happy customers.



except that Chambers has a record of making crazy predictions (like opening your hotel-room door with your smartphone) that eventually come true.

Even employers that continue with plenty of employees will probably change the relationship. "It's possible to measure the outcome in almost any job now, so you can reward people accordingly," an executive of a performance-evaluation software maker told *Fortune* recently. As a result, top performers are being paid more, and the rest are getting less. Aon Hewitt reports that virtually all large employers now offer bonuses to regular salaried employees, often for achieving specific periodic goals like collecting more receivables or other performance metrics that are now easy to track. When individual performance was cumbersome to measure, pay was less differentiated and underperformers could keep their jobs. No more.

What's true for workers is true for the 21st-century corporation itself. As friction disappears and ambitious new competitors arise in emerging markets, underperforming companies can't hide. Winners will win bigger, and the rest will fight harder for what's left. Idea-intensive sectors "are developing a winner-take-all dynamic, with a wide gap between the most profitable firms and everyone else," says new research from the McKinsey Global Insti-

FOXCONN: THOMAS LEE—BLOOMBERG VIA GETTY IMAGES; APPLE STORE: TOMOHIKO OHSUMI—BLOOMBERG VIA GETTY IMAGES; ORIGINAL PHOTOGRAPH, BHUSRI: BENJAMIN RASMUSSEN

GROWTH BEFORE PROFITS: Amazon exemplifies companies that are willing to report little profit while they invest (as in this fulfillment center in Rugeley, Britain) in order to grow while opportunities are greatest.



tute. More generally, competition is simply getting tougher. Global corporate profits recently totaled about 10% of world GDP, says MGI, a number we may someday recall with envy; the profit share could shrink to 8% by 2025, MGI predicts, barely more than it was in 1980. Result: “As profit growth slows, there will be more companies fighting for a smaller slice of the pie.”

IT'S A WORLD in which corporations, though fighting ever harder, keep less of the global economy's output—seemingly the recipe for a declining role in world affairs. Yet for many 21st-century corporations it will be just the opposite. Some are achieving the scale of nations, a new phenomenon. Conducting billions of searches a day, Google possesses better real-time knowledge of what's going on in the world than any government does; research shows it can predict disease outbreaks, stock market movements, and much else, and could influence elections if it wanted to. With 1.5 billion users, Facebook has a bigger population than China does and can accurately describe its users'



personalities and predict their success in work and romance. On any given day, Apple probably has more cash on hand than the U.S. Treasury. Bharti Airtel, an Indian telecom company, has about as many customers as the U.S. has residents. With 2.2 million workers, Walmart employs more people than any other organization on earth except the U.S. and Chinese defense departments.

And now one more mind-bending concept for the 21st century: Corporations, even as some achieve colossal stature, will on average live shorter lives than they used to. The trend is striking: The average life span of companies in the S&P 500 has declined from 61 years in 1958 to about 20 years now, says Yale's Richard Foster, who predicts further steady declines. Well before the 21st century's end, the concept of companies as continuing institutions could even cease to be the norm.

After all, why do companies exist? The English economist Ronald Coase won a Nobel Prize in economics for answering that question. In the theoretical world, the global economy spins like a top based on price signals between individual operators, with no apparent need for big companies. But in the real world, as Coase pointed out, “there are negotiations to be undertaken, contracts have to be drawn up, inspections have to be made, arrangements have to be made to settle disputes, and so on.” That is, there are transaction costs—friction—and consolidating transactions inside companies is the most efficient way of handling them. Now, as technology shrinks those costs, many companies are unbundling themselves, outsourcing functions to others, crowdsourcing R&D, and exchanging employees for contractors. A continual Hollywood model, in which people and resources come together to achieve a goal and then disperse to other projects, may become common across the economy. It's happening already.

The good news is that accelerating change, creative destruction, and new business models are all opportunities for the venturesome. A unifying theme as the economy transforms is that in almost every business, barriers to entry are coming down. Opportunity is more widely available than ever. Every person and every organization can possess the 21st century's most valuable assets: openness to new ideas, ingenuity, and imagination. **F**

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