



**TODAY'S TRUE COMPETITIVE
ADVANTAGE: BLENDING THE BEST
OF DIGITAL AND PHYSICAL** Robert E. Siegel

Are you tired of hearing that digital transformation is the most important issue facing companies today? Me, too.

Sometimes, while someone is going on and on about it in my classroom at Stanford University's Graduate School of Business, or in a pitch meeting at my Silicon Valley venture capital firm, I feel like banging my head against the wall.

Don't get me wrong—of course, digitization is a massive and massively important trend. Leaders in every industry need to wrestle with it. But despite fervent preaching from the Silicon Valley faithful, it's not the only kind of competency that matters. The less flashy, more grounded aspects of business, such as logistics and manufacturing, are still crucial to the success of any company, large or small. Amid the insistent drumbeat of digital transformation, those traditional, old-fashioned competencies are easily overlooked and underappreciated.

A cultural gulf has opened up between the realms I call brains and brawn. Others may call this dichotomy digital versus physical, the disruptor mindset versus the incumbent mindset, start-up world versus the Fortune 500, or tech culture versus industrial culture. Whatever terms you prefer, it's time to bridge the gulf and reframe the dichotomy.

The sheer luminescence of digital breakthroughs exerts such a strong hold on our imaginations that many of us can't even relate to companies that actually make stuff or move stuff around. Would most young, ambitious leaders rather take a job at Google or Ford? At Twitter or John Deere? At Netflix or Home Depot? Do we even have to ask?

This way of looking at the world is misguided. You can't assume that the legacy giants are doomed. Some so-called dinosaurs will fail, of course, but others will thrive by blending their existing skills at making and moving products with brainy new competencies unleashed by digital technology. Likewise, some of the digital disruptors will win, but certainly not all of them.

Today's true competitive advantage, for your career or your entire organization, is understanding how digital and physical excellence can reinforce each other, achieving more in coordination than either kind of mastery can in isolation. The idea that these worlds are in fundamental conflict is dangerous and shortsighted. Instead, think of brains and brawn as the business version of chocolate and peanut butter, or Lennon and McCartney: valuable individually, but infinitely better together. Building that powerful partnership is the most important issue facing companies today.

HEARING FROM THE HORSES' MOUTHS

I reached this conclusion after some surprising observations while wearing my two hats, as an academic and a venture capitalist.

First came a series of surprises during one of my Stanford courses, The Industrialist's Dilemma, which I've cotaught since 2016 with Max Wessel, the chief learning officer of enterprise software giant SAP, and Aaron Levie, the CEO of cloud company Box. When we launched the course, we planned to invite top executives from tech companies to share their insights on how they were rewriting the traditional rules of business. We also wanted some forward-thinking leaders of incumbent firms that were embracing digital transformation. And we wanted a couple of CEOs from old-line industrial firms that were struggling to respond to disruption.

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But that's not how things played out. Over the past six years, I've been surprised again and again by the 70-plus distinguished speakers who've spoken to our The Industrialist's Dilemma class, or to the Systems Leadership class that I coteach with former General Electric CEO Jeff Immelt. On the incumbent/Fortune 500 side, these speakers have included Home Depot CEO Craig Menear, Johnson & Johnson CEO Alex Gorsky, former Caterpillar Group President Rob Charter, AB InBev Chief Disruptive Growth Officer Pedro Earp, GlaxoSmithKline CEO Emma Walmsley, and former AT&T CEO Randall Stephenson. On the disruptor/start-up side, we've hosted 23andMe CEO Anne Wojcicki, Lyft CEO Logan Green, Stripe CEO Patrick Collison, and former Google Nest CEO Tony Fadell, among many others.

Over and over, these leaders confounded my assumptions about which companies are set up for future success and which are in serious trouble. While the disruptors continue to innovate, many established companies are finding creative and aggressive ways to counter them. These heavyweights are turning their size and resources, historical market presence, and institutional knowledge from surviving many boom-and-bust cycles into competitive advantages. Yet few people in the wider business community are aware of how they're doing it.

My second key observation grew out of my work as a partner at XSeed Capital and as a venture partner at Piva Ventures, both of which are enthusiastic flag-wavers for disruption. I've noticed that many of the tech companies we work with, while bursting with innovation, are unable or unwilling to navigate the tedious steps that lead to long-term customer relationships. Many also struggle to build systematic management processes. As a result, their performance is often wildly inconsistent.

I realized that these brainy disruptors are missing some of the key competencies that drive consistent long-run profits—and that the best way they could master those brawny skills was by studying the very incumbents they were trying to destroy.

Then very suddenly, these trends became personal.

LESSONS FROM LOCKDOWN

On the evening of Friday, March 6, 2020, I was having a group dinner with seven of my MBA students when we saw a news alert: due to the COVID-19 pandemic, Stanford University would be moving all instruction online as of Monday. For the rest of the academic year, all of my classroom skills, honed over 20 years of practice, would be irrelevant. I'd have to figure out how to hold the attention of up to 100 students at a time via Zoom and try to approximate their classroom experience.

Traditional teaching requires a deeply physical set of skills. You learn to read the room by looking into the eyes of your students, decoding which ones are engaged, bored, or completely lost. You also learn how to read body language—who's slouching, who's leaning forward—and the auditory clues of laughing or groaning, depending on how terrible my jokes are that day. But now my only feedback was 100 tiny faces on a monitor that I couldn't see clearly while looking into a camera. And they were on mute, except for a tiny icon of a blue hand that would light up when someone wanted to ask a question or respond to one of my prompts.

This was a shock not just to me but to our entire faculty, as it was to teachers at every level nationwide. We all had to adapt, far more quickly and completely than any of us were comfortable with. We had no choice.

After grinding it out for a week, I was grateful to have a two-week break without classes before the next quarter would begin. I devoted that time to improving my virtual game. I invested in a bigger computer monitor, a higher-quality camera, and backup internet connections in case one went down during a class. I huddled with my teaching assistants about how we could keep the energy levels up and encourage more participation. I rearranged my home office so I could stand up and roam around a bit without stepping out of camera range. I redecorated to turn the space into a Stanford-themed studio. I prepped our upcoming guest speakers on how to make the most of their video sessions.

As our classroom experiences improved during the following quarter, I had an epiphany: the digital teaching skills that my colleagues and I were learning would come in handy for the rest of our careers, not merely during the pandemic.

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I also ran several remote sessions for global companies based in South America, Europe, Southeast Asia, and the Middle East. These experiences convinced me that education will never fully return to the days of one person standing in front of a lecture hall. Video and communication technology will continue to improve, and people will keep finding creative new ways to apply them. Within a few years, teaching will probably be seen as a hybrid profession, requiring the ability to hold attention and communicate effectively both in a classroom and over video.

Every week—sometimes every day—I saw a new phase in the metamorphosis of my field. I watched a transformation blending the best aspects of digital and physical. And as my frustrations at adapting to the new world gave way to excitement over its possibilities, I realized that my own experience was an “up close and personal” lesson in exactly what I’d been teaching. I had joined the hundreds of companies and organizations that were rewriting the traditional rules and embracing digital transformation.

THE BEST OF BOTH WORLDS

What’s true for teaching is increasingly true for every industry: nothing is exclusively digital or physical anymore. Brainy fields like biotech, video games, and software depend in part on their mastery of channel partnerships, supply chains, customer service, and quality control. Brawny fields like scrap metal recycling, physical retail, and construction now have to process and act on mountains of data and coordinate complicated machinery via artificial intelligence and cloud computing.

At the individual level, someone with a traditionally brainy job, like a product manager for Apple's AirPods, needs a strong grasp of the details of global manufacturing and distribution. And someone with a traditionally brawny job, like a factory floor supervisor at General Motors, now needs the skills to handle more sophisticated technology than a NASA engineer was given a few decades ago.

At the organizational level, similarly, success increasingly demands the best of both worlds: the speed, nimbleness, and risk tolerance that are the hallmark of digital start-ups, and the attention to systems, best practices, and long-term customer relationships that are more natural to large incumbents.

THE BRAINS AND BRAWN BASICS

The Brains and Brawn framework analyzes a company's core capabilities along 10 attributes—five each for the digital and physical worlds. Here's a quick preview of the five competencies on the brainy side.

THE LEFT HEMISPHERE: USING ANALYTICS | With big data increasingly available for all kinds of products and services, every company needs a strategy to use all this information to serve customers better, improve their offerings, and control costs. I'm calling this capability the left hemisphere, after the brain's center of logical thinking.

THE RIGHT HEMISPHERE: HARNESSING CREATIVITY | As companies grow, they usually develop systems and processes that enable efficient scaling and operational excellence. Unfortunately, these systems often make it harder to innovate consistently.

But some growing companies keep finding creative ways, large and small, to meet customer needs and anticipate new trends. The right hemisphere is shorthand for harnessing this kind of creativity in developing new business models along with new products.

THE AMYGDALA: TAPPING THE POWER OF EMPATHY | Empathy is symbolized by the amygdala, the seat of emotional processing. A management team with a strong amygdala will be good at understanding and connecting authentically with customers, employees, and outside partners alike.

THE PREFRONTAL CORTEX: MANAGING RISK | The prefrontal cortex is the part of the brain that evaluates and makes decisions about risks. Humans are naturally risk averse because our hunter-gatherer ancestors lived in a world full of mysterious dangers, where any novelty might reveal a new threat. But for many companies today, especially the biggest, risk aversion is a serious disadvantage. Incentives like promotions and raises tend to reward those who support the status quo, instead of doing something bold but uncertain.

THE INNER EAR: BALANCING OWNERSHIP AND PARTNERSHIP | Every company faces a fundamental strategic question: Which functions should it own and manage directly, and which should it pay outsiders to manage? The rise of mobile computing, the cloud, data analytics, and AI have made it impossible for any company to provide all parts of a technical solution. Owning more aspects of the technology stack can increase customer intimacy, while owning fewer makes it easier to master the ones that matter most. My metaphor for this balancing challenge is the inner ear, which controls our ability to balance. (Technically the inner ear is outside the brain, but please cut me some slack.)

Now here's a preview of the five competencies on the brawny side.

THE SPINE: LOGISTICS | Conventional wisdom holds that being an expert in logistics, supply chains, and getting the right things to the right places at the right times will never get you on the cover of Fortune—unless you're Tim Cook and your talents get you promoted to CEO of Apple. But a strong spine is essential to delivering great experiences to customers, even in sectors that are rapidly going digital.

HANDS: THE CRAFT OF MAKING THINGS | During the wave of globalization that accelerated in the 1990s, many manufacturing companies moved their factories to lower-cost parts of the world, especially Southeast Asia and Mexico. But with the rise of new technologies such as additive manufacturing, robot assembly lines, and 3D printing, it's now possible to design and make things cost-effectively in a high-wage country like the United States. Smart companies are improving their hands by finding innovative ways to enable high-volume yet affordable production.

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MUSCLES: LEVERAGING SIZE AND SCALE | Economies of scale are still a huge advantage, but in some ways it's harder than ever to manage a sprawling organization across regions, countries, or continents. It takes strong and agile muscles to act "glocally"—making the most of both global scale and local expertise in challenging, distinct markets.

HAND-EYE COORDINATION: MANAGING ECOSYSTEMS | A business ecosystem is an interconnected group of organizations that align for their mutual interests. The relationships among suppliers, channel partners, investors, regulators, and competing firms are frequently in flux, requiring a juggling act to address every ecosystem member's competing needs. Like any juggling act, doing it well requires great hand-eye coordination.

Managing in a fluid and uncertain environment raises a host of questions for leaders. When should you be tough and assertive in attempting to shape the ecosystem? When should you hang back and let others take the lead in how your industry evolves? What can you do if you have a very different vision for the future of your market compared to your channel partners or key competitors?

STAMINA: SURVIVING FOR THE LONG RUN | Longevity is the ultimate challenge for any business, and no short-term success can guarantee it. It takes stamina to manage an organization's reputation and brand through both good times and bad.

BRAINS + BRAWN = OPTIMISM

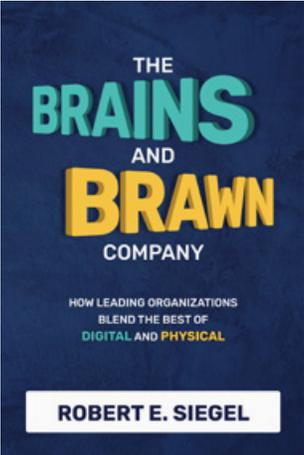
These are tough times for all kinds of businesses, between the economic turmoil caused by the coronavirus pandemic, ever-increasing global competition, and never-ending technological changes. But my research for this book has reinforced my natural impulse toward optimism.

The door is open for traditionally brawny companies to vastly improve their brainy competencies, while brainy companies boost their brawny competencies. I hope that the chapters ahead will convince you that no person or organization need be trapped in an old mindset. **At any level—as individuals, teams, departments, companies, or entire industries—there are opportunities to bridge the gap between brains and brawn, creating a durable competitive advantage.** 📖

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Robert Siegel is a lecturer at Stanford Graduate School of Business. His work includes teaching graduate and Executive Education classes, and doing extensive research on such companies as Google, Schwab, AB Inbev, Stripe, and SurveyMonkey®. He’s also a partner at Silicon Valley venture capital firms XSeed Capital and Piva, and he sits on the boards of several startups.

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