

### 1 The Best Retailers Combine Bricks and Clicks

- A) Retail profits are falling sharply. Stores are closing. Malls are emptying. The depressing stories just keep coming. Reading the earnings announcements of large retail stores like Macy's, Nordstrom, and Target is about as uplifting as a tour of an intensive care unit. The internet is apparently taking down *yet another industry*. *Brick and mortar stores* (实体店) seem to be going the way of the yellow pages. Sure enough, the Census Bureau just released data showing that online retail sales surged 15.2 percent between the first quarter of 2015 and the first quarter of 2016.
- B) But before you dump all of your retail stocks, there are more facts you should consider. Looking only at that 15.2 percent "surge" would be misleading. It was an increase that was on a small base of 6.9 percent. Even when a tiny number grows by a large percentage terms, it is often still tiny.
- C) More than 20 years after the internet was opened to commerce, the Census Bureau tells us that brick and mortar sales accounted for 92.3 percent of retail sales in the first quarter of 2016. Their data show that only 0.8 percent of retail sales shifted from offline to online between the beginning of 2015 and 2016.
- D) So, despite all the talk about drone (无人机) deliveries to your doorstep, all the retail executives expressing anxiety over consumers going online, and even a Presidential candidate exclaiming that Amazon has a "huge antitrust problem," the Census data suggest that physical retail is thriving. Of course, the closed stores, depressed executives, and sinking stocks suggest otherwise. What's the real story?
- E) Many firms operating brick and mortar stores are in trouble. The retail industry is getting "reinvented," as we describe in our new book. *Matchmakers*. It's standing in the path of what Schumpeter called a *gale* (大风) of creative destruction. That storm has been brewing for some time, and as it has reached gale force, most large retailers are searching for a response. As the CFO of Macy's put it recently, "We're frankly scratching our heads."
- F) But it's not happening as experts predicted. In the peak of the dot. com bubble, brick and mortar retail was one of those industries the internet was going to kill—and quickly. The dot.com bust discredited most predictions of that sort and in the years that followed, conventional retailers' confidence in the future increased as Census continued to report weak online sales. And then the gale hit.
- G) It is becoming increasingly clear that retail reinvention isn't a simple battle to the death between bricks and clicks. It is about devising retail models that work for people who are making increasing use of a growing array of internet-connected tools to change how they search, shop, and buy. Creative retailers are using the new technologies to innovate just about everything stores do from managing inventory, to marketing, to getting paid.
- H) More than drones dropping a new supply of underwear on your doorstep, Apple's massively successful brick-and-mortar-and-glass retail stores and Amazon's small steps in the same direction are what should keep old-fashioned retailers awake at night. Not to mention the large number of creative new retailers, like Bonobos, that are blending online and offline experiences in creative ways.
- I) Retail reinvention is not a simple process, and it's also not happening on what used to be called "Internet Time." Some internet-driven changes have happened quickly, of course. Craigslist quickly overtook newspaper classified ads and turned newspaper economics upside down. But many widely anticipated changes weren't quick, and some haven't really started. With the benefit of *hindsight* (后见之明), it looks like the internet will transform the economy at something like the pace of other great inventions like electricity. B2B commerce, for example, didn't move mainly online by 2005 as many had predicted in 2000, nor even by 2016, but that doesn't mean it won't do so over the next few decades.
- J) But the gale is still blowing. The sudden decline in foot traffic in recent years, even though it hasn't been accompanied by a massive decline in physical sales, is a critical warning. People can shop more efficiently online and therefore don't need to go to as many stores to find what they want. There's a surplus of physical shopping space for the crowds, which is one reason why stores are downsizing and closing.
- K) The rise of the mobile phone has recently added a new level of complexity to the process of retail reinvention. Even five years ago most people faced a choice. Sit at your computer, probably at home or at the office, search and browse, and buy. Or head out to the mall, or Main Street, look and shop, and buy. Now, just about everyone has a smartphone, connected to the internet almost everywhere almost all the time. Even when a retailer gets a customer to walk in the store, she can easily see if there's a better deal online or at another store nearby.
- L) So far, the main thing many large retailers have done in response to all this is to open online stores, so people will come to them directly rather than to Amazon and its smaller online rivals. Many are having the same problem that newspapers have. Even if they get online traffic, they struggle to make enough money online to compensate for what they are losing offline.
- M) A few seem to be making this work. Among large traditional retailers, Walmart recently reported the best results, leading its stock price to surge, while Macy's, Target, and Nordstrom's dropped. Yet Walmart's year-over-year online sales only grew 7 percent, leading its CEO to *lament* (哀叹), "Growth here is too slow." Part of the problem is that almost two decades after Amazon filed the one. click patent, the online retail shopping and buying experience is filled with frictions. A recent study graded more than 600 internet retailers on how easy it was for consumers to shop, buy, and pay. Almost half of the sites didn't get a passing grade and only 18 percent got an A or B.
- N) The turmoil on the ground in physical retail is hard to square with the Census data. Unfortunately, part of the explanation is that the Census retail data are unreliable. Our deep 100k into those data and their preparation revealed serious problems. It seems likely that Census simply misclassifies a large chunk of online sales. It is certain that the Census procedures, which

lump the online sales of major traditional retailers like Walmart with “non-store retailers” like food trucks. can mask major changes in individual retail categories. The bureau could easily present their data in more useful ways. but they have chosen not to.

O) Despite the turmoil, brick and mortar won’t disappear any time soon. The big questions are which, if any, of the large traditional retailers will still be on the scene in a decade or two because they have successfully reinvented themselves, which new players will operate busy stores on Main Streets and maybe even in shopping malls, and how the shopping and buying experience will have changed in each retail category. Investors shouldn’t write off brick and mortar. Whether they should bet on the traditional players who run those stores now is another matter

36. Although online retailing has existed for some twenty years, nearly half of the internet retailers still fail to receive satisfactory feedback from consumers, according to a recent survey.

37. Innovative retailers integrate internet technologies with conventional retailing to create new retail models.

38. Despite what the Census data suggest, the value of physical retail’s stocks has been dropping.

39. Innovative-driven changes in the retail industry didn’t take place as quickly as widely anticipated.

40. Statistics indicate that brick and mortar sales still made up the lion’s share of the retail business.

41. Companies that successfully combine online and offline business models may prove to be a big concern for traditional retailers.

42. Brick and mortar retailers’ faith in their business was strengthened when the dot com bubble burst.

43. Despite the tremendous challenges from online retailing, traditional retailing will be here to stay for quite some time.

44. With the rise of online commerce, physical retail stores are likely to suffer the same fate as i the yellow pages.

45. The wide use of smartphones has made it more complex for traditional retailers to reinvent their business.

## 2 Companies Are Working with Consumers to Reduce Waste

- A) As consumers, we are very wasteful. Annually, the world generates 1.3 billion tons of solid waste. This is expected to go up to 2.2 billion by 2025. The developed countries are responsible for 44% of waste, and in the U.S. alone, the average person throws away their body weight in rubbish every month.
- B) Conventional wisdom would seem to suggest that companies have no incentive to lengthen the life cycle of their products and reduce the revenue they would get from selling new goods. Yet, more and more businesses are thinking about how to reduce consumer waste. This is partly driven by the rising price of raw materials and metals. It is also partly due to both consumers and companies becoming more aware of the need to protect our environment.
- C) When choosing what products to buy and which brands to buy from, more and more consumers are looking into sustainability. This is opposed to just price and performance they were concerned about in the past. In a survey of 54 of the world's leading brands, almost all of them reported that consumers are showing increasing care about sustainable lifestyles. At the same time, surveys on consumers in the U.S. and the U.K. show that they also care about minimizing energy use and reducing waste.
- D) For the most part, consumers control what happens to a product. But some companies are realizing that placing the burden of recycling entirely on the consumer is not an effective strategy, especially when tossing something away seems like the easiest and most convenient option.
- E) Some retailers and manufacturers in the clothing, footwear, and electronics industries have launched environmental programs. They want to make their customers interested in preserving their products and preventing things that still have value from going to the garbage dump. By offering services to help expand the longevity of their products, they're promising quality and durability to consumers, and receiving the reputational gains for being environmentally friendly.
- F) For example, the Swedish jeans company Nudie Jeans offers free repair at twenty of their shops. Instead of discarding their old worn-out jeans, customers bring them in to be renewed. The company even provides mail-order repair kits and online videos, so that customers can learn how to fix a pair of jeans at home. Their philosophy is that extending the life of a pair of jeans is not only great for the environment, but allows the consumer to get more value out of their product. When customers do want to toss their pair, they can give them back to the store, which will repurpose and resell them. Another clothing company, Patagonia, a high-end outdoor clothing store, follows the same principle. It has partnered with DIY website iFixit to teach consumers how to repair their clothing, such as waterproof outerwear, at home. The company also offers a repair program for their customers for a modest fee. Currently, Patagonia repairs about 40,000 garments a year in their Reno, Nevada, service center. According to the company's CEO, Rose Marcario, this is about building a company that cares about the environment. At the same time, offering repair supports the perceived quality of its products.
- G) In Brazil, the multinational corporation Adidas has been running a shoe-recycling program called "Sustainable Footprint" since 2012. Customers can bring shoes of any brand into an Adidas store to be shredded and turned into alternative fuels for energy creation instead of being burned as trash. They are used to fuel cement ovens. To motivate visitors to bring in more old shoes, Adidas Brazil promotes the program in stores by showing videos to educate customers, and it even offers a discount each time a customer brings in an old pair of shoes. This boosts the reputation and image of Adidas by making people more aware of the company's values.
- H) Enormous opportunities also lie with e-waste. It is estimated that in 2014 the world produced some 42 million metric tons of e-waste (discarded electrical and electronic equipment and its parts) with North America and Europe accounting for 8 and 12 million metric tons respectively. The materials from e-waste include iron, copper, gold, silver, and aluminum—materials that could be reused, resold, salvaged, or recycled. Together, the value of these metals is estimated to be about \$52 billion. Electronics giants like Best Buy and Samsung have provided e-waste take-back programs over the past few years, which aim to *refurbish* (翻新) old electronic components and parts into new products.
- I) For other companies interested in reducing waste, helping the environment, and providing the sustainable lifestyles that consumers seek, here are some first steps for building a relationship with customers that focuses on recycling and restoring value to products:
- J) Find partners. If you are a manufacturer who relies on outside distributors, then retailers are the ideal partner for collecting old products. Power tool maker DeWalt partners with companies, such as Lowe's and Napa Auto Parts, to collect old tools at their stores for recycling. The partnership benefits both sides by allowing unconventional partners (for example, two companies from two different industries) to work together on a specific aspect of the value chain, like, in this example, an engine firm with an accessory one.
- K) Create incentives. Environmental conscientiousness isn't always enough to make customers recycle old goods. For instance,

DeWalt discovered that many contractors were holding on to their old tools, even if they no longer worked, because they were expensive purchases and it was hard to justify bringing them in to recycle. By offering instant discounts worth as much as \$100, DeWalt launched a trade-in program to encourage people to bring back tools. As a result, DeWalt now reuses those materials to create new products.

- L) Start with a trial program, and expect to change the details as you go. Any take-back program will likely change over time, depending on what works for your customers and company goals. Maybe you see low customer participation at first, or conversely, so much success that the cost of recycling becomes too high. Best Buy, for instance, has been bearing the lion's share of e-waste volume since two of its largest competitors, Amazon and Wal-mart, do not have their own recycling programs. Since the launch of its program, Best Buy changed its policy to add a \$25 fee for recycling old televisions in order to keep the program going.
- M) Build a culture of collective values with customers. A stronger relationship between the retailer/producer and the consumer isn't just about financial incentives. By creating more awareness around your efforts to reduce waste, and by developing a culture of responsibility, repair, and reuse, you can build customer loyalty based on shared values and responsibilities.
- N) These examples are just the tip of the iceberg, but they demonstrate how helping customers get more use of their materials can transform value chains and operations. Reducing waste by incorporating used materials into production can cut costs and decrease the price of *procurement* (采购): less to be procured from the outside and more to be re-utilized from the inside.
- O) Companies play a big role in creating a circular economy, in which value is generating less from extracting new resources and more from getting better use out of the resources we already have—but they must also get customers engaged in the process.

- 36. Some companies believe that products' prolonged lifespan benefits both the environment and customers.
- 37. A survey shows shoppers today are getting more concerned about energy conservation and environmental protection when deciding what to buy.
- 38. Companies can build customer loyalty by creating a positive culture of environmental awareness.
- 39. When companies launch environmental programs, they will have their brand reputation enhanced.
- 40. One multinational company offers discounts to customers who bring in old footwear to be used as fuel.
- 41. Recycling used products can help manufacturers reduce production costs.
- 42. Electronic products contain valuable metals that could be recovered.
- 43. It seems commonly believed that companies are not motivated to prolong their products' lifespan.
- 44. It is advisable for companies to partner with each other in product recycling.
- 45. Some businesses have begun to realize it may not be effective to let consumers take full responsibility for recycling.

### 3 The future of personal satellite technology is here—are we ready for it?

- A) Satellites used to be the exclusive playthings of rich governments and wealthy corporations. But increasingly, as space becomes more democratized, they are coming within reach of ordinary people. Just like *drones* (无人机) before them, miniature satellites are beginning to fundamentally transform our conceptions of who gets to do what up above our heads.
- B) As a recent report from the National Academy of Sciences highlights, these satellites hold tremendous potential for making satellite-based science more accessible than ever before. However, as the cost of getting your own satellite in orbit drops sharply, the risks of irresponsible use grow. The question here is no longer “Can we?” but “Should we?” What are the potential downsides of having a slice of space densely populated by equipment built by people not traditionally labeled as “professionals”? And what would the responsible and beneficial development and use of this technology actually look like? Some of the answers may come from a nonprofit organization that has been building and launching amateur satellites for nearly 50 years.
- C) Having your personal satellite launched into orbit might sound like an idea straight out of science fiction. But over the past few decades a unique class of satellites has been created that fits the bill: CubeSats. The “Cube” here simply refers to the satellite’s shape. The most common CubeSat is a 10cm cube, so small that a single CubeSat could easily be mistaken for a paperweight on your desk. These mini-satellites can fit in a launch vehicle’s formerly “wasted space.” Multiples can be deployed in combination for more complex missions than could be achieved by one CubeSat alone.
- D) Within their compact bodies these minute satellites are able to house sensors and communications receivers/transmitters that enable operators to study Earth from space, as well as space around Earth. They’re primarily designed for Low Earth Orbit (LEO)—an easily accessible region of space from around 200 to 800 miles above Earth, where human-tended missions like the Hubble Space Telescope and the International Space Station (ISS) hang out. But they can attain more distant orbits; NASA plans for most of its future Earth-escaping payloads (to the moon and Mars especially) to carry CubeSats.
- E) Because they’re so small and light, it costs much less to get a CubeSat into Earth’s orbit than a traditional communications or GPS satellite. For instance, a research group here at Arizona State University recently claimed their developmental small CubeSats could cost as little as \$3,000 to put in orbit. This decrease in cost allows researchers, hobbyists and even elementary school groups to put simple instruments into LEO or even having them deployed from the ISS.
- F) The first CubeSat was created in the early 2000s, as a way of enabling Stanford graduate students to design, build, test and operate a spacecraft with similar capabilities to the USSR’s *Sputnik* (前苏联的人造卫星). Since then, NASA, the National Reconnaissance Office and even Boeing have all launched and operated CubeSats. There are more than 130 currently in operation. The NASA Educational Launch of Nano Satellite program, which offers free launches for educational groups and science missions, is now open to U.S. nonprofit corporations as well. Clearly, satellites are not just for rocket scientists anymore.
- G) The National Academy of Sciences report emphasizes CubeSats’ importance in scientific discovery and the training of future space scientists and engineers. Yet it also acknowledges that widespread deployment of LEO CubeSats isn’t risk-free. The greatest concern the authors raise is space debris—pieces of “junk” that orbit the earth, with the potential to cause serious damage if they collide with operational units, including the ISS.
- H) Currently, there aren’t many CubeSats and they’re tracked closely. Yet as LEO opens up to more amateur satellites, they may pose an increasing threat. As the report authors point out, even near-misses might lead to the “creation of a burdensome regulatory framework and affect the future disposition of science CubeSats.”
- I) CubeSat researchers suggest that now’s the time to ponder unexpected and unintended possible consequences of more people than ever having access to their own small slice of space. In an era when you can simply buy a CubeSat kit off the shelf, how can we trust the satellites over our heads were developed with good intentions by people who knew what they were doing?

Some“expert amateurs”in the satellite game could provide some inspiration for how to proceed responsibly.

- J) In 1969, the Radio Amateur Satellite Corporation (AMSAT) was created in order to foster *ham radio enthusiasts*’ (业余无线电爱好者) participation in space research and communication. It continued the efforts, begun in 1961, by Project OSCAR—a U.S.-based group that built and launched the very first nongovernmental satellite just four years after Sputnik. As an organization of volunteers, AMSAT was putting“amateur”satellites in orbit decades before the current CubeSat craze. And over time, its members have learned a thing or two about responsibility. Here, open.source development has been a central principle. Within the organization, AMSAT has a philosophy of open sourcing everything—making technical data on all aspects of their satellites fully available to everyone in the organization, and when possible, the public. According to a member of the team responsible for FOX 1-A, AMSAT's first CubeSat, this means that there s no way to sneak something like explosives or an energy emitter into an amateur satellite when everyone has access to the designs and implementation.
- K) However, they're more cautious about sharing information with nonmembers, as the organization guards against others developing the ability to hijack and take control of their satellites. This form of“self-governance”is possible within long-standing amateur organizations that, over time, are able to build a sense of responsibility to community members, as well as society in general. But what happens when new players emerge, who don't have deep roots within the existing culture?
- L) Hobbyists and students are gaining access to technologies without being part of a long-standing amateur establishment. They're still constrained by funders, launch providers and a series of regulations—all of which rein in what CubeSat developers can and cannot do. But there's a danger they're ill-equipped to think through potential unintended consequences. What these unintended consequences might be is admittedly far from clear. Yet we know innovators can be remarkably creative with taking technologies in unexpected directions. Think of something as seemingly benign as the cellphone—we have microfinance and text-based social networking at one end of the spectrum, and *improvised* (临时制作的) explosive devices at the other.
- M) This is where a culture of social responsibility around CubeSats becomes important—not simply to ensure that physical risks are minimized, but to engage with a much larger community in anticipating and managing less obvious consequences of the technology. This is not an easy task. Yet the evidence from AMSAT and other areas of technology development suggests that responsible amateur communities can and do emerge around novel technologies. The challenge here, of course, is ensuring that what an amateur communities considers to be responsible, actually is. Here's where there needs to be a much wider public conversation that extends beyond government agencies and scientific communities to include students, hobbyists, and anyone who may potentially stand to be affected by the use of CubeSat technology.
36. Given the easier accessibility to space, it is time to think about how to prevent misuse of satellites.
37. A group of mini-satellites can work together to accomplish more complex tasks.
38. The greater accessibility of mini-satellites increases the risks of their irresponsible use.
39. Even school pupils can have their CubeSats put in orbit owing to the lowered launching cost.
40. AMSAT is careful about sharing information with outsiders to prevent hijacking of their satellites.
41. NASA offers to launch CubeSats free of charge for educational and research purposes.
42. Even with constraints, it is possible for some creative developers to take the CubeSat technology in directions that result in harmful outcomes.
43. While making significant contributions to space science, CubeSats may pose hazards to other space vehicles.
44. Mini-satellites enable operators to study Earth from LEO and space around it.
45. AMSAT operates on the principle of having all its technical data accessible to its members, preventing the abuse of amateur satellites.

#### 4 Who's Really Addicting You to Technology?

A. “Nearly everyone I know is addicted in some measure to the Internet,” wrote Tony Schwartz in The New York Times. It’s a common complaint these days. A steady stream of similar headlines accuse the Net and its offspring apps, social media sites and online games of addicting us to distraction

B. There’s little doubt that nearly everyone who comes in contact with the Net has difficulty disconnecting. Many of us, like Schwartz, struggle to stay focused on tasks that require more concentration than it takes to post a status update. As one person ironically put it in the comments section of Schwartz's online article, “As I was reading this very excellent article. I stopped at least half a dozen times to check my email.”

C. There's something different about this technology: it is both invasive and persuasive. But who's at fault for its overuse? To find solutions, it's important to understand what we're dealing with. There are four parties conspiring to keep you connected: the tech, your boss, your friends and you.

D. The technologies themselves, and their makers, are the easiest suspects to blame for our diminishing attention spans. Nicholas Carr, author of *The Shallows: What the Internet Is Doing to Our Brains*, wrote, “The net is designed to be an interruption system, a machine geared to dividing attention.”

E. Online services like Facebook, Twitter and the like, are called out of manipulation—making products so good that people can’t stop using them. After studying these products for several years, I wrote a book about how they do it. I learned it all starts with the business model. Since these services rely on advertising revenue, the more frequently you use them, the more money they make. It’s no wonder these companies employ teams of people focused on engineering their services to be as engaging as possible. These products aren't habit-forming by chance; it's by design. They have an incentive to keep us hooked.

F. However, as good as these services are, there are simple steps we can take to keep them at bay. For example, we can change how often we receive the distracting notifications that trigger our urge to check. According to Adam Marchick, CEO of mobile marketing company Kahuna, less than 15 percent of smartphone users ever bother to adjust their notification settings--meaning the remaining 85 percent of us default to the app makers' every preset trigger. Google and Apple have made it far too difficult to adjust these settings so it's up to us to take steps ensure we set these triggers to suit our own needs, not the needs of the app makers’.

G. While companies like Facebook harvest attention to generate revenue from advertisers, other technologies have no such agenda. Take email, for example. This system couldn't care less how often you use it. Yet to many, email is the most habit-forming medium of all. We check email at all hours of the day—we're obsessed. But why? Because that's what the boss wants. For almost all white-collar jobs, email is the primary tool of corporate communication. A slow response to a message could hurt not only your reputation but also your livelihood.

H. Your friends are also responsible. Think about this familiar scene. People gathered around a table, enjoying food and each other's company. There's laughter and a bit of kidding. Then, during an interval in the conversation, someone takes out their phone to check who knows what. Barely anyone notices and no one says a thing.

I. Now imagine the same dinner, but instead of checking their phone, the person belches(打嗝) -loudly. Everyone notices. Unless the meal takes place in a beer house, this is considered bad manners. The impolite act violates the basic rules of etiquette. One has to wonder: why don't we apply the same social norms to checking phones during meals, meetings and conversations as we do to other antisocial behaviors? Somehow, we accept it and say nothing when someone offends.

J. The reality is taking one's phone out at the wrong time is worse than belching because, unlike other minor offense, checking tech is contagious. Once one person looks at their phone, other people feel compelled to do the same, starting a chain reaction. The more people are on their phones, the fewer people are talking until finally you are the only one left not reading email or checking Twitter. From a societal perspective, phone checking is less like belching in public and more like another bad habit. Our phones are like cigarettes-something to do when we're anxious, bored or when our fingers need something to toy with. Seeing others enjoy a smoke, or sneak a quick glance, is too tempting to resist and soon everyone is doing it.

K. The technology, your boss, and your friends, all influence how often you find yourself using (or overusing) these gadgets. But there's still someone who deserves scrutiny--the person holding the phone.

L. I have a confession. Even though I study habit-forming technology for a living, disconnecting is not easy for me. I'm online far more than I'd like. Like Schwartz and so many others, I often find myself distracted and off track. I wanted to know why so I began self-monitoring to try to understand my behavior. That's when I discovered an uncomfortable truth. I use technology as an escape. When I'm doing something I'd rather not do, or when I'm someplace I'd rather not be, I use my phone to port myself elsewhere. I found that this ability to instantly shift my attention was often a good thing, like when passing time on public transportation. But frequently my tech use was not so benign. When I faced difficult work, like thinking through an article idea or editing the same draft for the hundredth time, for example, a more sinister screen would draw me in. I could easily escape discomfort temporarily by answering email or browsing the web under the pretense of so-called "research." Though I desperately wanted to lay blame elsewhere, I finally had to admit that my bad habits had less to do with new-age technology and more to do with old-fashioned procrastination(拖延)

M. It's easy to blame technology for being so distracting, but distraction is nothing new. Aristotle and Socrates debated the nature of "akrasia"--our tendency to do things against our interests. If we're honest with ourselves, tech is just another way to occupy our time and minds. If we weren't on our devices. We'd likely do similarly unproductive.

N. Personal technology is indeed more engaging than ever, and there's no doubt companies are engineering their products and services to be more compelling and attractive. But would we want it any other way? The intended result of making something better is that people use it more. That's not necessarily a problem, that's progress.

O. These improvements don't mean we shouldn't attempt to control our use of technology. In order to make sure it doesn't control us, we should come to terms with the fact that it's more than the technology itself that's responsible for our habits. Our workplace culture, social norms and individual behaviors all play a part. To put technology in its place, we must be conscious not only of how technology is changing, but also of how it is changing us.

36. Online services are so designed that the more they are used, the more profit they generate.

37. The author admits using technology as an escape from the task at hand.

38. Checking phones at dinners is now accepted as normal but not belching.

39. To make proper use of technology, we should not only increase our awareness of how it is changing but also how it is impacting us.

40. Most of us find it hard to focus on our immediate tasks because of Internet distractions.

41. When one person starts checking their phone, the others will follow suit.

42. The great majority of smartphone users don't take the trouble to adjust their settings to suit their own purposes.

43. The Internet is regarded by some as designed to distract our attention.

44. The author attributes his tech addiction chiefly to his habit of putting off doing what he should do right away.



45. White-collar workers check email round the clock because it is required by their employers.

### **5 Data sharing: An open mind on open data**

[A] It is a movement building steady momentum: a call to make research data, software code and experimental methods publicly available and transparent. A spirit of openness is gaining acceptance in the science community, and is the only way, say advocates, to address a 'crisis' in science whereby too few findings are successfully reproduced. Furthermore, they say, it is the best way for researchers to gather the range of observations that are necessary to speed up discoveries or to identify large-scale trends.

[B] The open-data shift poses a confusing problem for junior researchers. On the one hand, the drive to share is gathering official steam. Since 2013, global scientific bodies have begun to back politics that support increased public access to research. On the other hand, scientists disagree about how much and when they should share data, and they debate whether sharing it is more likely to accelerate science and make it more robust, or to introduce vulnerabilities and problems. As more journals and funders adopt data-sharing requirements, and as a growing number of enthusiasts call for more openness, junior researchers must find their place between adopters and those who continue to hold out, even as they strive to launch their own careers.

[C] One key challenge facing young scientists is how to be open without becoming scientifically vulnerable. They must determine the risk of jeopardizing a job offer or a collaboration proposal from those who are wary of or unfamiliar with open science. And they must learn how to capitalize on the movement's benefits, such as opportunities for more citations and a way to build a reputation without the need for conventional metrics, such as publication in high-impact journals.

[D] Some fields have embraced open data more than others. Researchers in psychology, a field rocked by findings of irreproducibility in the past few years, have been especially vocal supporters of the drive for more-open science. A few psychology journals have created incentives to increase interest in reproducible science—for example, by affixing an

‘open-data’ badge to articles that clearly state where data are available. According to social psychologist Brian Nosek, executive director of the Center for Open Science, the average data-sharing rate for the journal Psychological Science, which uses the badges, increased tenfold to 38% from 2013 to 2015.

[E] Funders, too, are increasingly adopting an open-data policy .Several strongly encourage, and some require, a data-management plan that makes data available .The US National Science Foundation is among these, Some philanthropic (慈善的) funders, including the Bill &Melinda Gates Foundation in Seattle, Washington, and the Wellcome Trust in London, also data mandate open data from their grant recipients.

[F] But many young researchers, especially those who have not been mentored in open science, are uncertain about whether to share or to stay private. Graduate students and postdocs, who often are working on their lab head's grant, may have no choice if their supervisor or another senior opposes sharing.

[G] Some fear that the potential impact of sharing is too high, especially at the early stages of a career." Everybody has a scary story about someone getting scooped(被抢先)," says New York University astronomer David Hogg. Those fears may be a factor in a lingering hesitation to share data even when publishing in journals that mandate it.

[H] Researchers at small labs or at institutions focused on teaching arguably have the most to lose when sharing hard-won data. ""With my institution and teaching load, I don't have postdocs and grad students", says Terry McGlynn, a tropical biologist at California State University, Dominguez Hills. "The stakes are higher to share data because it's a bigger fraction of what's happening in my lab."

[I] Researchers also point to the time sink that is involved in preparing data for others to view. Once the data and associated materials appear in a repository(存储库), answering questions and handling complaints can take many hours.

[J] The time investment can present other problems. In some cases, says data scientist Karthik Ram, it may be difficult for junior researchers to embrace openness when senior colleagues— many of whom head selection and promotion committees—might ridicule what they may view as misplaced energies. "I've heard this recently -that embracing the idea of open data and code makes traditional academics uncomfortable, "says Ram. "The concern seems to be that open advocates don't spend their time being as productive as possible."

[K]An open-science stance can also add complexity to a collaboration. Kate Ratliff, who studies social attitudes at the University of Florida, Gainesville, says that it can seem as if there are two camps in a field-those who care about open science and those who don't . " There's a new area to navigate- 'Are you cool with the fact that I'll want to make the data open?'-when talking with somebody about an interesting research idea, "she says.

[L] Despite complications and concerns, the upsides of sharing can be significant. For example, when information is uploaded to a repository, a digital object identifier(DOI)is assigned. Scientists can use a DOI to publish each step of the research life cycle, not just the final paper. In so doing, they can potentially get three citations- one each for the data and software. in addition to the paper itself. And although some say that citations for software or data have little currency in academia, they can have other benefits.

[M] Many advocates think that transparent data procedures with a date and time stamp will protect scientists from being scooped. "This is the sweet spot between sharing and getting credit for it. while discouraging plagiarism(剽窃 ). " says Ivo Grigorov, a project coordinator at the National Institute of Aquatic Resources Research Secretariat in Charlottenlund, Denmark. Hogg says that scooping is less of a problem than many think. "The two cases I'm familiar with didn't involve open data or code, "he says.

[N] Open science also offers junior researchers the chance to level the playing field by gaining better access to crucial data. Ross Mounce, a postdoc studying evolutionary biology at the University of Cambridge, UK, is a vocal champion of open science, partly because his fossil based research on access to others' data. He says that more openness in science could help to discourage what some perceive as a common practice of shutting out early-career scientists' requests for data.

[O] Communication also helps for those who worry about jeopardizing a collaboration, he says, Concerns about open

science should be discussed at the outset of a study. "Whenever you start a project with someone, you have to establish a clear understanding of expectations for who owns the data, at what point they go public and who can do what with them," he says.

[P] In the end, sharing data, software and materials with colleagues can help an early-career researcher to gain recognition--a crucial component of success. "The thing you are searching for reputation" says Titus Brown, a genomics( 基因组学 ) researcher at the University of California, Davis. "To get grants and jobs you have to be relevant and achieve some level of public recognition. Anything you do that advances your presence- especially in a larger sphere, outside the communities you know- is a net win."

36. Astronomer David Hogg doesn't think scooping is as serious a problem as generally thought.
37. Some researchers are hesitant to make their data public for fear that others might publish something similar before them.
38. Some psychology journals have offered incentives to encourage authors to share their data.
39. There is a growing demand in the science community that research data be open to the public.
40. Sharing data offers early-career researchers the chance to build a certain level of reputation.
41. Data sharing enables scientists to publish each step of their research work, thus leading to more citations.
42. Scientists hold different opinions about the extent and timing of data sharing.
43. Potential problems related to data sharing should be made known to and discussed by all participants at the beginning of a joint research project.
44. Sharing data and handling data-related issues can be time-consuming.
45. Junior researchers may have no say when it comes to sharing data.

## 6

### Apple's Stance Highlights a More Confrontational Tech Industry

[A] The battle between Apple and law enforcement officials over unlocking a terrorist's smartphone is the culmination of a slow turning of the tables between the technology industry and the United States government.

[B] After revelations by the former National Security Agency contractor Edward J. Snowden in 2013 that the government both cozied up to (讨好) certain tech companies and hacked into others to gain access to private data on an enormous scale, tech giants began to recognize the United States government as a hostile actor. But if the confrontation has crystallized in this latest battle, it may already be heading toward a predictable conclusion: In the long run, the tech companies are destined to emerge victorious.

[C] It may not seem that way at the moment. On the one side, you have the United States government's mighty legal and security apparatus fighting for data of the most sympathetic sort: the secrets buried in a dead mass murderer's phone. The action stems from a federal court order issued on Tuesday requiring Apple to help the Federal Bureau of Investigation (FBI) to unlock an iPhone used by one of the two attackers who killed 14 people in San Bernardino, California, in December.

[D] In the other corner is the world's most valuable company, whose chief executive, Timothy Cook, has said he will appeal the court's order. Apple argues that it is fighting to preserve a principle that most of us who are addicted to our smartphones can defend: Weaken a single iPhone so that its contents can be viewed by the American government and you risk weakening all iPhones for any government intruder, anywhere.

[E] There will probably be months of legal confrontation, and it is not at all clear which side will prevail in court, nor in the battle for public opinion and legislative favor. Yet underlying all of this is a simple dynamic: Apple, Google, Facebook and other companies hold most of the cards in this confrontation. They have our data, and their businesses depend on the global public's collective belief that they will do everything they can to protect that data.

[F] Any crack in that front could be fatal for tech companies that must operate worldwide. If Apple is forced to open up an iPhone for an American law enforcement investigation, what is to prevent it from doing so for a request from the Russians or the Iranians? If Apple is forced to write code that lets the FBI get into the Phone 5c used by Syed Rizwan Farook, the male attacker in the San Bernardino attack, who would be responsible if some hacker got hold of that code and broke into its other devices?

[G] Apple's stance on these issues emerged post-Snowden, when the company started putting in place a series of technologies that, by default, make use of encryption (加密) to limit access to people's data. More than that, Apple—and, in different ways, other tech companies, including Google, Facebook, Twitter and Microsoft—have made their opposition to the government's claims a point of corporate pride.

[H] Apple's emerging global brand is privacy; it has staked its corporate reputation, not to mention the investment of considerable technical and financial resources, on limiting the sort of mass surveillance that was uncovered by Mr. Snowden. So now, for many cases involving

governmental intrusions into data, once-lonely privacy advocates find themselves fighting alongside the most powerful company in the world.

[I] "A comparison point is in the 1990s battles over encryption," said Kurt Opsahl, general counsel of the Electronic Frontier Foundation, a privacy watchdog group. "Then you had a few companies involved, but not one of the largest companies in the world coming out with a lengthy and impassioned post, like we saw yesterday from Timothy Cook. Its profile has really been raised."

[J] Apple and oilier tech companies hold another ace: the technical means to keep making their devices more and more inaccessible. Note that Apple's public opposition to the government's request is itself a hindrance to mass government intrusion. And to get at the contents of a single iPhone, the government says it needs a court order and Apple's help to write new code; in earlier versions of the iPhone, ones that were created before Apple found religion on (热衷于) privacy, the FBI might have been able to break into the device by itself.

[K] You can expect that noose (束缚) to continue to tighten. Experts said that whether or not Apple loses this specific case, measures that it could put into place in the future will almost certainly be able to further limit the government's reach.

[L] That is not to say that the outcome of the San Bernardino case is insignificant. As apple and several security experts have argued, an order compelling Apple to write software that gives the FBI access to the iPhone in question would establish an unsettling precedent. The order essentially asks Apple to hack its own devices, and once it is in place, the precedent could be used to justify law enforcement efforts to get around encryption technologies in other investigations far removed from national security threats.

[M] Once aimed with a method for gaining access to iPhones, the government could ask to use it proactively (先发制人地), before a suspected terrorist attack—leaving Apple in a bind as to whether to comply or risk an attack and suffer a public-relations nightmare. "This is a brand new move in the war against encryption," Mr. Opsahl said. "We have had plenty of debates in Congress and the media over whether the government should have a backdoor, and this is an end run (迂回战术) around that—here they come with an order to create that backdoor."

[N] Yet it is worth noting that even if Apple ultimately loses this case, it has plenty of technical means to close a backdoor over time. "If they are anywhere near worth their salt as engineers, I bet they are rethinking their threat model as we speak," said Jonathan Zdziarski, a digital expert who studies the iPhone and its vulnerabilities.

[O] One relatively simple fix, Mr. Zdziarski said, would be for Apple to modify future versions of the iPhone to require a user to enter a passcode before the phone will accept the sort of modified operating system that the FBI wants Apple to create. That way, Apple could not unilaterally introduce a code that weakens the iPhone—a user would have to consent to it.

[P] "Nothing is 100 percent hacker-proof," Mr. Zdziarski said, but he pointed out that the judge's order in this case required Apple to provide "reasonable security assistance" to unlock Mr. Farook's phone. If Apple alters the security model of future iPhones so that even its own engineers' "reasonable assistance" will not be able to crack a given device when compelled by the government, a precedent set in this case might lose its lasting force. In other words, even if the FBI wins this case, in the long run, it loses.

36. It is a popular belief that tech companies are committed to protecting their customers' private data.

37. The US government believes that its access to people's iPhones could be used to prevent

terrorist attacks.

38. A federal court asked Apple to help the FBI access data in a terrorist's iPhone.
39. Privacy advocates now have Apple fighting alongside them against government access to personal data.
40. Snowden revealed that the American government had tried hard to access private data in massive scale.
41. The FBI might have been able to access private data in earlier iPhones without Apple's help.
42. After the Snowden incident, Apple made clear its position to counter government intrusion into personal data by means of encryption.
43. According to one digital expert, no iPhone can be entirely free from hacking.
44. Timothy Cook's long web post has helped enhance Apple's image.
45. Apple's CEO has decided to appeal the federal court's order to unlock a user's iPhone.

## 7 Peer Pressure Has a Positive Side

A. Parents of teenagers often view their children's friends with something like suspicion. They worry that the adolescent peer group has the power to push its members into behavior that is foolish and even dangerous. Such wariness is well founded: statistics show, for example, that a teenage driver with a same-age passenger in the car is at higher risk of a fatal crash than an adolescent driving alone or with an adult.

B. In a 2005 study, psychologist Laurence Steinberg of Temple University and his co-author, psychologist Margo Gardner, then at Temple, divided 306 people into three age groups: young adolescents, with a mean age of 14; older adolescents, with a mean age of 19; and adults, aged 24 and older. Subjects played a computerized driving game in which the player must avoid crashing into a wall that materializes, without warning, on the roadway. Steinberg and Gardner randomly assigned some participants to play alone or with two same-age peers looking on.

C. Older adolescents scored about 50 percent higher on an index of risky driving when their peers were in the room—and the driving of early adolescents was fully twice as reckless when other young teens were around. In contrast, adults behaved in similar ways regardless of whether they were on their own or observed by others. "The presence of peers makes adolescents and youth, but not adults, more likely to take risks," Steinberg and Gardner concluded.

D. Yet in the years following the publication of this study, Steinberg began to believe that this interpretation did not capture the whole picture. As he and other researchers examined the question of why teens were more apt to take risks in the company of other teenagers, they came to suspect that a crowd's influence need not always be negative. Now some experts are proposing

that we should take advantage of the teen brain's keen sensitivity to the presence of friends and leverage it to improve education.

E. In a 2011 study, Steinberg and his colleagues turned to functional MRI（磁共振）to investigate how the presence of peers affects the activity in the adolescent brain. They scanned the brains of 40 teens and adults who were playing a virtual driving game designed to test whether players would brake at a yellow light or speed on through the crossroad.

F. The brains of teenagers, but not adults, showed greater activity in two regions associated with rewards when they were being observed by same-age peers than when alone. In other words, rewards are more intense for teens when they are with peers, which motivates them to pursue higher-risk experiences that might bring a big payoff（such as the thrill of just making the light before it turns red）. But Steinberg suspected this tendency could also have its advantages. In his latest experiment, published online in August, Steinberg and his colleagues used a computerized version of a card game called the Iowa Gambling Task to investigate how the presence of peers affects the way young people gather and apply information.

G. The results: Teens who played the Iowa Gambling Task under the eyes of fellow adolescents engaged in more exploratory behavior, learned faster from both positive and negative outcomes, and achieved better performance on the task than those who played in solitude. “What our study suggests is that teenagers learn more quickly and more effectively when their peers are present than when they're on their own,” Steinberg says. And this finding could have important implications for how we think about educating adolescents.

H. Matthew D. Lieberman, a social cognitive neuroscientist at the University of California, Los Angeles, and author of the 2013 book *Social: Why Our Brains Are Wired to Connect*, suspects that the human brain is especially adept at learning socially salient information. He points to a classic 2004 study in which psychologists at Dartmouth College and Harvard University used functional MRI to track brain activity in 17 young men as they listened to descriptions of people while concentrating on either socially relevant cues（for example, trying to form an impression of a person based on the description）or more socially neutral information（such as noting the order of details in the description）.The descriptions were the same in each condition, but people could better remember these statements when given a social motivation.

I. The study also found that when subjects thought about and later recalled descriptions in terms of their informational content, regions associated with factual memory, such as the medial temporal lobe, became active. But thinking about or remembering descriptions in terms of their social meaning activated the dorsomedial prefrontal cortex—part of the brain's social network—even as traditional memory regions registered low levels of activity. More recently, as he reported in a 2012 review, Lieberman has discovered that this region may be part of a distinct network involved in socially motivated learning and memory. Such findings, he says, suggest that “this network can be called on to process and store the kind of information taught in school—potentially giving students access to a range of untapped mental powers.”

J. If humans are generally geared to recall details about one another, this pattern is probably even more powerful among teenagers who are very attentive to social details: who is in, who is out, who likes whom, who is mad at whom. Their penchant for social drama is not—or not only—a way of distracting themselves from their schoolwork or of driving adults crazy. It is actually a neurological（神经的）sensitivity, initiated by hormonal changes. Evolutionarily speaking, people in this age group are at a stage in which they can prepare to find a mate and start their own family



while separating from parents and striking out on their own. To do this successfully, their brain prompts them to think and even obsess about others.

K. Yet our schools focus primarily on students as individual entities. What would happen if educators instead took advantage of the fact that teens are powerfully compelled to think in social terms? In *Social*, Lieberman lays out a number of ways to do so. History and English could be presented through the lens of the psychological drives of the people involved. One could therefore present Napoleon in terms of his desire to impress or Churchill in terms of his lonely melancholy. Less inherently interpersonal subjects, such as math, could acquire a social aspect through team problem solving and peer tutoring. Research shows that when we absorb information in order to teach it to someone else, we learn it more accurately and deeply, perhaps in part because we are engaging our social cognition.

L. And although anxious parents may not welcome the notion, educators could turn adolescent recklessness to academic ends. “Risk taking in an educational context is a vital skill that enables progress and creativity,” wrote Sarah-Jayne Blakemore, a cognitive neuroscientist at University College London, in a review published last year. Yet, she noted, many young people are especially risk averse at school—afraid that one low test score or mediocre grade could cost them a spot at a selective university. We should assure such students that risk, and even peer pressure, can be a good thing—as long as it happens in the classroom and not the car.

36. It is thought probable that the human brain is particularly good at picking-up socially important information.

37. It can be concluded from experiment that the presence of peers increases risk-taking by adolescents and youth.

38. Students should be told that risk-taking in the classroom can be something positive.

39. The urge of finding a mate and getting married accounts for adolescents’ greater attention to social interactions.

40. According to Steinberg, the presence of peers increases the speed and effectiveness of teenagers’ leaning.

41. Teenagers’ parents are often concerned about negative peer influence.

42. Activating the brain’s social network involved in socially motivated learning and memory may allow students to tap unused mental powers.

43. The presence of peer intensifies the feeling of rewards in teens’ brains.

44. When we absorb information for the purpose of imparting it to others, we do so with greater secretary and depth.

45. Some experts are suggesting that we turn peer influence to good use in education.

## 8 Grow Plants Without Water

[A]. Ever since humanity began to farm our own food, we've faced the unpredictable rain that is both friend and enemy. It comes and goes without much warning, and a field of lush (茂盛的) leafy greens one year can dry up and blow away the next. Food security and fortunes depend on sufficient

rain, and nowhere more so than in Africa, where 96% of farmland depends on rain instead of the irrigation common in more developed places. It has consequences : South Africa's ongoing drought—the worst in three decades— will cost at least a quarter of its corn crop this year.

[B]. Biologist Jill Farrant of the University of Cape Town in South Africa says that nature has plenty of answers for people who want to grow crops in places with unpredictable rainfall. She is hard at work finding a way to take traits from rare wild plants that adapt to extreme dry weather and use them in food crops. As the earth's climate changes and rainfall becomes even less predictable in some places, those answers will grow even more valuable. "The type of farming I'm aiming for is literally so that people can survive as it's going to get more and more dry," Farrant says.

[C]. Extreme conditions produce extremely tough plants. In the rusty red deserts of South Africa, steep-sided rocky hills called inselbergs rear up from the plains like the bones of the earth. The hills are remnants of an earlier geological era, scraped bare of most soil and exposed to the elements. Yet on these and similar formations in deserts around the world, a few fierce plants have adapted to endure under ever-changing conditions.

[D]. Farrant calls them resurrection plants (复苏植物). During months without water under a harsh sun.

They wither, shrink and contract until they look like a pile of dead gray leaves. But rainfall can revive them in a matter of hours. Her time-lapse (间歇性拍摄的) videos of the revivals look like someone playing a tape of the plant's death in reverse.

[E]. The big difference between "drought-tolerant" plants and these tough plants: metabolism. Many different kinds of plants have developed tactics to weather dry spells. Some plants store reserves of water to see them through a drought ; others send roots deep down to subsurface water supplies. But once these plants use up their stored reserve or tap out the underground supply, they cease growing and start to die. They may be able to handle a drought of some length, and many people use the term "drought tolerant" to describe such plants, but they never actually stop needing to consume water, so Farrant prefers to call them drought resistant.

[F]. Resurrection plants, defined as those capable of recovering from holding less than 0.1 grams of water per gram of dry mass, are different. They lack water-storing structures, and their existence on rock faces prevents them from tapping groundwater, so they have instead developed the ability to change their metabolism .When they detect an extended dry period, they divert their metabolisms, producing sugars and certain stress-associated proteins and other materials in their tissues. As the plant dries, these resources take on first the properties of honey, then rubber, and finally enter a glass-like state that is "the most stable state that the plant can maintain," Farrant says. That slows the plant's metabolism and protects its dried-out tissues. The plants also change shape, shrinking to minimize the surface area through

which their remaining water might evaporate. They can recover from months and years without water, depending on the species.

[G]. What else can do this dry-out-and-revive trick? Seeds—almost all of them. At the start of her career, Farrant studied . recalcitrant seeds (执拗性种子), "such as avocados, coffee and lychee. While tasty, such seeds are delicate—they cannot bud and grow if they dry out (as you may know if you've ever tried to grow a tree from an avocado pit). In the seed world, that makes them rare, because most seeds from flowering plants are quite robust. Most seeds can wait out the dry, unwelcoming seasons until conditions are right and they sprout (发芽). Yet once they start growing, such plants seem not to retain the ability to hit the pause button on metabolism in their stems or leaves.

[H]. After completing her Ph. D. on seeds, Farrant began investigating whether it might be possible to isolate the properties that make most seeds so resilient (迅速恢复活力的) and transfer them to other plant tissues. What Farrant and others have found over the past two decades is that there are many genes involved in resurrection plants' response to dryness. Many of them are the same that regulate how seeds become dryness-tolerant while still attached to their parent plants. Now they are trying to figure out what molecular signaling processes activate those seed-building genes in resurrection plants—and how to reproduce them in crops."Most genes are regulated by a master set of genes,"Farrant says."We're looking at gene promoters and what would be their master switch."

[I]. Once Farrant and her colleagues feel they have a better sense of which switches to throw, they will have to find the best way to do so in useful crops."I'm trying three methods of breeding,"Farrant says : conventional, genetic modification and gene editing. She says she is aware that plenty of people do not want to eat genetically modified crops, but she is pushing ahead with every available tool until one works. Farmers and consumers alike can choose whether or not to use whichever version prevails : "I'm giving people an option. "

[J]. Farrant and others in the resurrection business got together last year to discuss the best species of resurrection plant to use as a lab model. Just like medical researchers use rats to test ideas for human medical treatments, botanists use plants that are relatively easy to grow in a lab or greenhouse setting to test their ideas for related species. The Queensland rock violet is one of the best studied resurrection plants so far, with a draft genome (基因图谱) published last year by a Chinese team. Also last year, Farrant and colleagues published a detailed molecular study of another candidate, *Xerophyta viscosa*, a tough-as-nail south African plant with lily-like flowers, and she says that a genome is on the way. one or both of these models will help researchers test their ideas — so far mostly done in the lab— on test plots.

[K]. Understanding the basic science first is key. There are good reasons why crop plants do not use dryness defenses already. For instance, there's a high energy cost in switching from a regular metabolism to an almost-no-water metabolism. It will also be necessary to understand what sort of yield farmers might expect and to establish the plant's safety."The yield is never going to be high,"Farrant says, so these plants will be targeted not at Iowa farmers trying to squeeze more cash out of high-yield fields, but subsistence farmers who need help

to survive a drought like the present one in South Africa."My vision is for the subsistence farmer," Farrant says. "I'm targeting crops that are of African value. "

36. There are a couple of plants tough and adaptable enough to survive on bare rocky hills and in deserts.

37. Farrant is trying to isolate genes in resurrection plants and reproduce them in crops.

38. Farmers in South Africa are more at the mercy of nature, especially inconsistent rainfall.

39. Resurrection crops are most likely to be the choice of subsistence farmers.

40. Even though many plants have developed various tactics to cope with dry weather, they cannot survive a prolonged drought.

41. Despite consumer resistance, researchers are pushing ahead with genetic modification of crops.

42. Most seeds can pull through dry spells and begin growing when conditions are ripe, but once this process starts, it cannot be held back.

43. Farrant is working hard to cultivate food crops that can survive extreme dryness by studying the traits of rare wild plants.

44. By adjusting their metabolism, resurrection plants can recover from an extended period of drought.

45. Resurrection plants can come back to life in a short time after a rainfall.

9

**In the real world, nobody cares that you went to an Ivy League school**

[A]. As a high school junior, everything in my life revolved around getting into the right college. I diligently attended my SAT, ACT, and Advanced Placement test preparation courses. I *juggled* (尽力应付) cross-country and track schedules, newspaper staff, and my church's youth group and drama team. I didn't drink, party, or even do much dating. The right college, I thought, was one with prestige, one with a name. It didn't have to be the Ivy League, but it needed to be "top school."

[B]. Looking back now, nine years later, I can't remember exactly what it was about these universities that made them seem so much better. Was it a curriculum that appeared more rigorous, perhaps? Or an alumni network that I hoped would open doors down the line? Maybe. "I do think there are advantages to schools with more recognition," notes Marybeth Gasman, a professor of higher education at the University of Pennsylvania. "I don't necessarily think that's a reason to go to one."

[C]. In reflection, my firm belief in the power of the brand was naive, not to mention a bit snobby. I quickly passed over state schools and southern schools, believing their curriculum to be automatically inferior to northeastern or western counterparts. Instead, I dreamed of living in New York City and my parents obliged me with a visit to New York University's (NYU) campus. During the tour, tuition fees were discussed. (NYU is consistently ranked one of the country's most expensive schools, with room and board

costs totaling upwards of \$64,000 a year.) Up until then, I hadn't truly realized just how expensive an education can be. Over the next few months, I realized not only could I not afford my dream school, I couldn't even afford the ones where I'd been accepted. City University of New York (CUNY), Rutgers University, and Indiana University were out of reach as were Mississippi State and the University of Alabama, where I would have to pay out-of-state fees. Further complicating my college search was a flourishing stock career—I wanted to keep running but my times weren't quite fast enough to secure a scholarship.

[D]. And so, at 11pm on the night of Georgia State University's (GSU) midnight deadline, I applied online. Rated No.466 overall on Forbes' Lists Top Colleges, No. 183 in Research Universities, and No. 108 in the South, I can't say it was my top choice. Still, the track coach had offered me a walk-on spot, and I actually found the urban Atlanta campus a decent consolation prize after New York City.

[E]. While it may have been practical, it wasn't prestigious, But here's the thing: I loved my "lower-tier" (低层 次的) university. (I use the term "low-tier" cautiously, because GSU is a well-regarded research institution that attracts high quality professors and faculty from all over the country.) We are taught to believe that only by going to the best schools and getting the best grades can we escape the rat race and build a better future. But what if lower-tier colleges and universities were the ticket to escaping the rat race? After all, where else can you leave school with a decent degree—but without a lifetime of debt?

[F] My school didn't come pre-packaged like the more popular options, so we were left to take care of ourselves, figuring out city life and trying to complete degree programs that no one was championing for us to succeed in. What I'm saying is, I loved my university because it taught us all to be resourceful and we could make what we wanted out of it.

[G]. I was lucky enough to have my tuition covered by a lottery-funded scholarship called HOPE (Helping Outstanding Pupils Educationally) When I started college, the HOPE scholarship was funded by the state of Georgia and offered to graduating high school seniors with a GPA of 3.0 or higher. Living costs and books I paid for with money earned during high school, supplemented by a small college fund my deceased grandfather left for me and a modest savings account my parents created when I was born.

[H]. So what about all that name recognition? Sure, many of my colleagues and competitors have more glamorous alma maters (母校) than I do. As a journalist, I have competed against NYU, Columbia, and Northeastern graduates for jobs. And yet, not a single interviewer has ever asked me about my educational background. In fact, almost every interview I've ever had was due to a connection—one that I've gained through pure determination, not a school brand.

[I]. According to The Boston Globe, students who earned their bachelor's in 2012 have an average monthly loan payment of \$312, which is one-third more than those who

graduated in 2004. Ultimately, that's the thing universities don't want to admit. Private universities are money-making institutions. If you can afford to buy prestige, that's your choice. For the rest of us, however, our hearty lower-tiered universities are just fine, thank you.

[J]. Wealthy universities talk up the benefits their name will give graduates; namely, strong alumni

networks, star faculty, and a résumé boost. But you needn't attend an Ivy League school to reap those rewards. Ludacris and the former CEO of Bank of America Ken Lewis are alumni of my college, as well as VICE's first female editor-in-chief, Ellis Jones. Successful people tend to be successful no matter where they go to school. And lower-tier schools can have alumni networks just as strong as their big name counterparts. In fact, lower-tier school alumni networks are arguably stronger, because fellow alumni recognize that you didn't necessarily have an easy path to follow. They might be more willing to offer career help, because your less famous school denotes that, like them, you are also full of energy and perseverance.

[K]. The Washington Post reported on a recent study by Princeton economists, in which college graduates, who applied to the most selective schools in the 12th grade were compared to those who applied to slightly less selective schools. They found that students with more potential earned more as adults, and the reverse held true as well, no matter where they went to school.

[L]. Likewise, star faculty is not always found where you'd expect. Big name schools are not necessarily the best places for professors; plus, many professors split teaching time between multiple colleges and/or universities. This means, for instance, a CUNY student could reasonably expect to receive the same quality of instruction from a prestigious professor as they would if they were enrolled in the same class at NYU.

[M]. It's possible that some hiring managers may be drawn to candidates with a particular educational résumé, but it's no guarantee. According to a 2012 survey described in The Atlantic, college reputation ranked lowest in relative importance of attributes in evaluating graduates for hire, beaten out by top factors like internships, employment during college, college major, volunteer experience, and extracurriculars.

[N]. Maybe students who choose less prestigious universities are bound to succeed because they are determined to. I tend to think so. In any case, if I could do it again, I'd still make the same choice. Today I'm debt-free, resourceful—and I understand that even the shiniest packaging can't predict what you'll find on the inside.

36. Modest institutions can also have successful graduates and strong alumni networks.

- 37.The money the author made in high school helped pay for her living expenses and books at college.
- 38.The author came to see how costly college education could be when she was trying to choose a university to attend.
- 39.A recent study found that a graduate's salary is determined by their potential, not the university they attended.
- 40.The author cannot recall for sure what made certain top universities appear a lot better.
- 41.None of the author's job interviewers cared which college she went to.
- 42.The author thinks she did the right thing in choosing a less prestigious university.
- 43.In order to be admitted to a prestigious university, the author took part in various extracurricular activities and attended test preparation courses.
- 44.The author liked her university which was not prestigious but less expensive.
- 45.Colleges are reluctant to admit that graduates today are in heavier debt.

### **Resilience Is About How You Recharge, Not How You Endure**

[A] As constant travelers and parents of a 2-year-old, we sometimes fantasize about how much work we can do when one of us gets on a plane, undistracted by phones, friends, or movies. We race to get all our ground work done: packing, going through security, doing a last-minute work call, calling each other, then boarding the plane. Then, when we try to have that amazing work session in flight, we get nothing done. Even worse, after refreshing our email or reading the same studies over and over, we are too exhausted when we land to soldier on with (继续处理) the emails that have inevitably still piled up.

[B] Why should flying deplete us? We're just sitting there doing nothing. Why can't we be tougher, more resilient (有复原力的) and determined in our work so we can accomplish all of the goals we set for ourselves? Based on our current research, we have come to realize that the problem is not our hectic schedule or the plane travel itself; the problem comes from a misconception of what it means to be resilient, and the resulting impact of overworking.

[C] We often take a militaristic, "tough" approach to resilience and determination like a Marine pulling himself through the mud, a boxer going one more round, or a football player picking himself up off the ground for one more play. We believe that the longer we tough it out, the tougher we are, and therefore the more successful we will be. However, this entire conception is scientifically inaccurate.

[D] The very lack of a recovery period is dramatically holding back our collective ability to be resilient and successful. Research has found that there is a direct correlation between lack of recovery and increased incidence of health and safety problems. And lack of recovery—whether by disrupting sleep with thoughts of work or having continuous cognitive arousal by watching our

phones—is costing our companies \$62 billion a year in lost productivity.

[E] And just because work stops, it doesn't mean we are recovering. We “stop” work sometimes at 5 pm, but then we spend the night wrestling with solutions to work problems, talking about our work over dinner, and falling asleep thinking about how much work we'll do tomorrow. In a study just released, researchers from Norway found that 7.8% of Norwegians have become workaholics（工作狂）. The scientists cite a definition of “workaholism” as “being overly concerned about work, driven by an uncontrollable work motivation, and investing so much time and effort in work that it impairs other important life areas.”

[F] We believe that the number of people who fit that definition includes the majority of American workers, which prompted us to begin a study of workaholism in the U.S.. Our study will use a large corporate dataset from a major medical company to examine how technology extends our working hours and thus interferes with necessary cognitive recovery, resulting in huge health care costs and turnover costs for employers.

[G] The misconception of resilience is often bred from an early age. Parents trying to teach their children resilience might celebrate a high school student staying up until 3 am to finish a science fair project. What a distortion of resilience! A resilient child is a well-rested one. When an exhausted student goes to school, he risks hurting everyone on the road with his impaired driving; he doesn't have the cognitive resources to do well on his English test; he has lower self-control with his friends; and at home, he is moody with his parents. Overwork and exhaustion are the opposite of resilience and the bad habits we acquire when we're young only magnify when we hit the workforce.

[H] As Jim Loehr and Tony Schwartz have written, if you have too much time in the performance zone, you need more time in the recovery zone, otherwise you risk burnout. Gathering your resources to “try hard” requires burning energy in order to overcome your currently low arousal level. It also worsens exhaustion. Thus the more imbalanced we become due to overworking, the more value there is in activities that allow us to return to a state of balance. The value of a recovery period rises in proportion to the amount of work required of us.

[I] So how do we recover and build resilience? Most people assume that if you stop doing a task like answering emails or writing a paper, your brain will naturally recover, so that when you start again later in the day or the next morning, you'll have your energy back. But surely everyone reading this has had times when you lie in bed for hours, unable to fall asleep because your brain is thinking about work. If you lie in bed for eight hours, you may have rested, but you can still feel exhausted the next day. That's because rest and recovery are not the same thing.

[J] If you're trying to build resilience at work, you need adequate internal and external recovery periods. As researchers Zijlstra, Cropley and Rydstedt write in their 2014 paper: “Internal recovery refers to the shorter periods of relaxation that take place within the frames of the work day or the work setting in the form of short scheduled or unscheduled breaks, by shifting attention or changing to other work tasks when the mental or physical resources required for the initial task are temporarily depleted or exhausted. External recovery refers to actions that take place outside of work—e.g. in the free time between the work days, and during weekends, holidays or vacations.” If after work you lie around on your bed and get irritated by political commentary on your phone or get stressed thinking about decisions about how to renovate your home, your brain



has not received a break from high mental arousal states. Our brains need a rest as much as our bodies do.

[K] If you really want to build resilience, you can start by strategically stopping. Give yourself the resources to be tough by creating internal and external recovery periods. Amy Blankson describes how to strategically stop during the day by using technology to control overworking. She suggests downloading the Instant or Moment apps to see how many times you turn on your phone each day. You can also use apps like Offtime or Unplugged to create tech free zones by strategically scheduling automatic airplane modes. The average person turns on their phone 150 times every day. If every distraction took only 1 minute, that would account for 2.5 hours a day.

[L] In addition, you can take a cognitive break every 90 minutes to charge your batteries. Try to not have lunch at your desk, but instead spend time outside or with your friends—not talking about work. Take all of your paid time off, which not only gives you recovery periods, but raises your productivity and likelihood of promotion.

[M] As for us, we've started using our plane time as a work-free zone, and thus time to dip into the recovery phase. The results have been fantastic. We are usually tired already by the time we get on a plane, and the crowded space and unstable internet connection make work more challenging. Now, instead of swimming upstream, we relax, sleep, watch movies, or listen to music. And when we get off the plane, instead of being depleted, we feel recovered and ready to return to the performance zone.

36. It has been found that inadequate recovery often leads to poor health and accidents.

37. Mental relaxation is much needed, just as physical relaxation is.

38. Adequate rest not only helps one recover, but also increases one's work efficiency.

39. The author always has a hectic time before taking a flight.

40. Recovery may not take place even if one seems to have stopped working.

41. It is advised that technology be used to prevent people from overworking.

42. Contrary to popular belief, rest does not equal recovery.

43. The author has come to see that his problem results from a misunderstanding of the meaning of resilience.

44. People's distorted view about resilience may have developed from their upbringing.

45. People tend to think the more determined they are, the greater their success will be

1. MGDIC HFOAK
2. FCMEG NHBID
3. ICBEK FLGDJ
4. FCIEB KHDAG
5. ELIOB JFDLG
6. MGDAP LBOIF
7. HCLJG AIFKD
8. CHAKE IGBFD
9. JGCKB HNAEI
10. DJLAE KIBGC