


VIVEK WADHWA AND ALEX SALKEVER

**AUTHORS OF *THE DRIVER IN
THE DRIVERLESS CAR***



YOUR HAPPINESS WAS HACKED

**Why Tech Is Winning the Battle to Control
Your Brain—and How to Fight Back**

**FOREWORD BY ROGER MCNAMEE,
FOUNDING PARTNER, ELEVATION PARTNERS**

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Your Happiness Was Hacked

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This book is dedicated to our editor Neal Maillet and to his late son Aaron Cooper Maillet, who passed away in a tragic accident just as this book was going to press. There is no easy way to come to terms with such a profound loss. May time bring Neal, Jacqueline, Brenna, and Hilary a measure of healing and comfort.

FOREWORD

I have been a professional technology investor since 1982, which has given me a front-row seat at the creation of the most exciting industries of the past thirty-five years, including personal computers, cellular phones, the Internet, and social networking. I was a mentor to Mark Zuckerberg during the early years of Facebook and at one time was a vocal advocate for the platform. I still love the Facebook service, but I believe that the company's advertising business model has created social, economic, and political damage that demands a national conversation, and possibly intervention. And Facebook is not alone: the problem is endemic to Google, Snapchat, Twitter, Slack, and most of the other major Internet platforms.

Internet platforms have revolutionized our lives, but only now are we beginning to see their dark side. Millions of adults lose productivity, sleep, and motivation through constant interruptions by technology that was supposed to make them more productive. There has been widespread coverage of the way Russian hackers exploited Facebook's architecture to interfere in the U.S. presidential election of 2016. Less well known is the way that use of Facebook influenced the vote on Brexit in the U.K., as well as other

recent elections in Europe. There is mounting evidence that Facebook is also being exploited by allies of the government in Myanmar to make genocide of the Rohingya minority acceptable to that country's population. In the U.S., Facebook's advertising tools enable illegal discrimination in housing and violate the civil rights of innocent people. The Internet platforms themselves are particularly dangerous for children, who do not have tools to protect themselves. Snapchat Streaks and similar products on other platforms substitute addictive activities for the human interaction that is so fundamental to the emotional well-being of children. On top of that, lack of vigilance by the platforms has resulted in millions of children being exposed to inappropriate content.

The good aspects of Internet platforms are now being offset by flaws that are invisible to most users. All of this is possible because Facebook, Google, and other Internet platforms consciously addict their users in order to make their products and advertising more valuable. They combine propaganda techniques initially developed by the U.K. government in World War I with addiction strategies perfected by the gambling industry. They deliver two billion individually personalized channels on smartphones, the first media-delivery platform that is available to users every waking moment. The Internet platforms give users "what they want," creating filter bubbles that reinforce pre-existing beliefs in ways that make those beliefs more extreme and inflexible, causing many users to reject new information and even evidence.

It is ironic that tech platforms have joined illegal drug dealers in calling their consumers “users.” As are many illegal drug users, technology platform users are addicted. Too many have lost control over their lives. Too many cannot help themselves, because they either don’t know they are addicted or don’t have the tools with which to break the addiction. At present, there is no organized effort to help them.

A handful of Silicon Valley leaders—mostly people like me who had once been involved with Facebook or Google—recognized this problem in 2016 and 2017, and started to speak out. Meanwhile, the founders and CEOs of many major technology companies limit use of these products by their children, even as they promote unrestricted use by everyone else. Similarly, the platforms talk about privacy but take every step imaginable to invade the privacy of their users. They talk about connecting people, but their products actually increase polarization, isolation, and loneliness.

We are at a crossroads. In 2016, the tech industry could reasonably claim to be unaware of the problems pervading advertising-supported Internet platforms. That is no longer the case. Policy makers in Washington and around the world increasingly recognize that the promise of always-on technology has given way to a dystopian present. The time has come for “users” to get involved and to push back on platforms that are causing them harm in the pursuit of profits.

Your Happiness Was Hacked is a really important and

timely book. Not only is it the first on this topic by people who have spent their careers in the tech industry, but it also combines analysis of the problem with thoughtful prescriptions. It will not be easy to fix what is wrong with the major Internet platforms and our relationship to them, but the first step is to present the facts and foster a conversation about where to go from here. Vivek and Alex have taken that critical first step. They have surveyed the pioneering work being done by my partner Tristan Harris, by James Williams, and by many others, and distilled it into the book you are reading. There will be many more books about this issue, but this a great place to start.

Roger McNamee

PREFACE

Technology Overload Is Personal

Technology has given us so many gifts. Any information we need, Google lets us find within seconds. Facebook, Instagram, and Snapchat let us share our lives with distant friends and family. Our smartphones can be our running coaches, our libraries, and our meditation gurus. We no longer need to wrestle with paper maps; smartphones read detailed directions to us aloud while mapping the routes on their screens, even quickly rerouting us should we diverge from the plotted course. Uber and Lyft have made summoning a car as simple as pressing a button. Amazon can deliver ordered items within a day (and, in some cities, within two hours). Netflix streams movies to our screens for less than the cost of going to a single film at the cinema.

In the workplace, technology has forever altered our lives. E-mail allows us to communicate instantaneously and to have a permanent searchable record of our work. Slack, Facebook Messenger, and other instant-messaging applications let us chat and share files with work colleagues, and they build virtual watercoolers around which remote workers can gather to share stories, jokes, or GIFs.

When we create presentations or need information, we can sift through millions of available (and often free) online images. Or we can watch videos that teach us new skills for nearly any task—from relighting a water heater’s pilot flame to using the most popular computer programs for artificial intelligence (AI). We get nearly all of the news we want, at any time, for free.

Traveling on planes, we face flat-panel displays that let us flick from channel to channel or from movie to movie, keeping boredom at bay. We ride on elevators facing televisions broadcasting the news and weather, just in case we were unhappy about wasting the 30 seconds ascending or descending. Dynamic digital billboards now turn roadsides, bus stops, and city streets into carousels of capitalism. And virtual reality promises endless fully immersive adventures, enabling any of us to travel the world without moving from our chairs. The wonders never cease.

Yet a growing volume of research finds that Americans are unhappier now than they have been at any time in the past decade—and are becoming unhappier.¹

Psychologists raise the alarm over an epidemic of loneliness consuming society.² Rates of teenage suicide are rising, and today’s teenagers are less happy than teenagers of previous generations.³ They are also less likely to leave the house, hold a job, and do things that were once rites of passage.⁴ Smartphone addiction has made distracted driving epidemic; nearly 3,500 people died and 391,000 were injured in vehicle accidents involving distracted drivers in 2015, and such accidents are becoming more common.⁵

Our stores of empathy are shrinking, and narcissism is becoming normal, both trends being potentially attributable to pervasive technology.^{6,7}

Obsessive use of social media enables constant unhealthy comparisons with the seemingly perfect lives of those we see in our social-media feeds—even when we consciously know that their lives are less than perfect. More than one-third of the U.S. population gets less than the recommended minimum seven hours of sleep a night, with many millions getting less than six hours, and some of the best sleep researchers in the world consider incessant exposure to technology a likely leading cause. Most smartphone owners, fearing being away from their devices, sleep with their devices within arm's reach.⁸ Naturally, they also respond to e-mails and social-media alerts when they wake up with their phones at their sides, a behavior no one thinks is healthy. Meanwhile, a growing body of research suggests that late-night exposure to the intense blue light emitted by most computer and smartphone screens impairs production of melatonin, a chemical essential to sound sleep.

From texts to tweets to e-mail newsletters to binge-watching TV series such as *Orange Is the New Black*, so many things demand our attention. We are inundated with red circles and alerts and sounds, all designed to tap deep into our brains and hijack the neural pathways that enabled our ancestors to detect threats and thereby survive. What should serve us as primal alarm systems have left us trapped instead in a downward spiral of anxiety and discontent.

We know that uncontrolled consumption of technology

is increasingly diverting us from our intentions, but we seem unable to stop. Research subjects even choose to receive electric shocks rather than be left alone with their thoughts and without any technologies.⁹ The very engineers who built the devices that hold us rapt now express misgivings about what they have wrought (sending their own children to technology-free schools and restricting screen time at home), and the creator of the Facebook Like button now has his personal assistant use parental controls to prevent him from downloading apps to his phone.¹⁰

Even worse, some of the smartest people in the world are using powerful artificial-intelligence technologies specifically to devise ever newer and more effective ways to hold our attention.¹¹ We are collectively in the throes of a massive, harmful addiction that is the signature social issue of our time. This technology addiction is increasingly removing us from the direct experience of life, and that is consequently robbing us of our sense of peacefulness, security, stillness, and ease with ourselves. More cogently, our tech addiction has made it much harder for us to sit still or even to simply pay attention. The mechanism of this addiction is the steady, iterative diminution of our choices. This reduction of choice is a gentle slope. Like the frog boiling slowly in water, we spend increasing periods each day on our devices or interacting with technology, and our range of actual choices narrows.¹² This is not to say that we're consciously aware of such limits. To the contrary, we imagine we have never before had such a bounty of ways to amuse ourselves, learn, research, and consume information.

And it's true that we also benefit from this newfound digital store of knowledge. We can find forecasts of tomorrow's weather anywhere on the globe. We can quickly book flights or reserve tables at restaurants. We can snap pictures of our wage forms for software to convert into simple tax returns. On our phones, we can track the locations of our loved ones, and communicate in real time when we are late for appointments. And if we're involved in car accidents, we have phones with which to call for help—or applications that automatically detect that we have been in an accident.

But increasingly the choices we make are subtly (and not so subtly) manipulated by the makers of our technology in ways intended to promote the makers' profit over our individual and collective well-being.

In this book, we aim to help you understand why and how technology is making us so unhappy. And we correlate the rising use of smartphones, e-mail, social media, and other modern technologies with increasing angst, suffering, loneliness, and unhappiness. We analyze the scientific literature on how technology affects our lives. And we suggest what you can do about it.

Both of us, Vivek and Alex, came to write this book because we feel strongly about the negative effects that technology can have on our lives. Each of us has felt these effects acutely in recent years.

Neither of us hates technology. We both love it. And we could not imagine what our lives would be like without the massive benefits technology has provided to the world. We have made our careers in the technology field.

But as parents and spouses, as managers and entrepreneurs, and as people, we have felt a growing unease with technology over the past decade as it has become more deeply embedded into our day-to-day existence. As we shared the idea for our book with others, every single person we spoke to felt what we were feeling: it's a problem that affects our lives hugely.

A growing body of scientific evidence finds significant negative side effects of many of the ways we use technology and our habits in using the Internet, our smartphones, and nearly all other digital formats. This book will help you recognize the scope of the problem: how technology's many tentacles constrain and consume us in ways we fail to recognize. It describes how a form of techno-quicksand sucks us in and reduces our satisfaction at work and at home, puts us at mortal risk on the roads, and invades our most intimate moments to weave an unhealthy web of compulsion and dependency. It employs anecdotes and scientific research, and analyzes the ways in which companies, experts, scientists, and well-informed individuals are creating healthier relationships with technology and attempting to recover their equilibrium and their choices.

Ultimately, we hope to show how you can use a series of strategies and skills to build a better, more fulfilling life, one that includes both technology and happiness.

Turning the clock back is neither a realistic nor a desired option for most of us. We *like* Netflix. We *rely* on e-mail. We don't really *want* to read a paper map. FaceTime is a great way to stay close to people we care about. Expensify has

taken a lot of the pain out of filing expenses. And online shopping is incredibly convenient. What none of us bargain for are the convenience's hidden costs, increasingly compromising our day-to-day experience and our relationships.

Our society needs to ensure that the benefits of technology use outweigh the downsides and that we allow technology into our lives only on our terms. Otherwise, we risk a dystopian future in which we are slaves to our devices; in which we allow the very things that make being human so meaningful to drown in the noise of a million dopamine signals arising from alerts, social-media posts, beeps, rings, and notifications. Without being mindful in our technology use, we face a future of endless distraction and inattention that no one wants to endure.

Some of the urgency of the warnings about technology comes from acknowledgment of a stark reality: that the current generations may be the last who remember a life before this technology invasion overwhelmed us. Children born today will see the way we interact with our technology—staring at smartphones in the presence of crying children, interrupting deep thinking and writing projects for chatter on Slack, replying to texts as we drive—as the norm and as the only way that things *can* be. It is our responsibility to reshape this narrative and, as grandiose as it sounds, make technology safer not only for our children but for all generations to come.

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Introduction

Alex Almost Kills a Pack of Cyclists

On a cloudy morning several years ago, Alex was driving on Highway 1 in Marin County, California, a serpentine road along the ocean cliffs. His mind was elsewhere. His company was about to make an urgent product and deal announcement in the week ahead, and the fallout had erupted into a weekend of back-and-forth rapid-fire messages. The entire senior executive team was included on e-mail threads and texts, and Alex felt that he was expected to reply quickly.

The iPhone mounted on the dashboard of the car kept buzzing. Alex knew how dangerous it is to look at a phone while driving, let alone while driving on this stretch of highway, but he couldn't stop his hands from picking up the phone to snatch pieces of messages whenever the curves briefly abated and the road straightened out. He knew well that he could have chosen instead to stop at a pullout. Even so, he kept on driving.

On a straight section of highway, as he was furtively tapping a reply, a sixth sense told Alex to look up. What he saw, less than fifteen feet away, was a pack of cyclists in

bright red clothing, frantically pedaling up the steep grade. Alex hit the brakes, and the car skidded to a rapid stop. As Alex sat in his car, heart thumping, he realized that the cars behind him were honking. It was a narrow road, and on this stretch of it, only a narrow guardrail separated the cyclists from the cliff. Two seconds longer, and he would have hit the group, injuring them and potentially pushing them off the cliff to their deaths. Had that happened, Alex realized that he could well have ended the lives of the cyclists and scarred those of their families. Children might never have seen their mothers and fathers again. More selfishly, Alex also might have lost his job, put his own family under incredible stress, and forever changed his life. It was an utterly stupid, inexcusable act. It was also an utterly normal and common one: the vast majority of drivers who bring smartphones into the car interact with them while driving.¹

Had Alex waited for twenty minutes to reply instead from his final destination, would it have mattered? He knew that it wouldn't have. Yet the pull was so strong and the risk so abstract that Alex, normally a clearheaded and responsible person, made a bad decision—and avoided unthinkable consequences by mere seconds.

Over the years, Alex had felt a growing unease over how his relationship with technology was influencing his behaviors. As a child, a teen, and later a university student, he could read a book or write on topics for hours on end. Then along came the web and e-mail, invaluable tools for a writer trying to build a career as a freelance writer and later as an

editor at *Businessweek*. So Alex came to rely heavily on both tools to help him more efficiently locate information and talk with sources. But the habit of checking e-mail gradually became an unhealthy compulsion. Over time, from checking it every few hours, he came to check it hourly, and then every fifteen minutes. After all, he told himself, he never knew when an editor was going to e-mail with a request or when a source might respond to a question. He was in the news business.

One day, Alex realized that he *needed* to be connected to the Internet in order to write at all; he just felt strange when not connected. When connected, he could, as he saw it, write and research at the same time. But this also enabled him to continuously check e-mail and social media and to surf the web, diving down rabbit holes of useless information that popped up in his searches. Always a fan of notifications, Alex loved to be constantly accessible to colleagues and clients.

That said, when he was on vacation, Alex found it hard to slow down and unwind. He felt antsy when not connected, and connecting to airport Wi-Fi after a long journey became a quasi-religious experience. Once, he had laughed at the passengers who checked e-mails as soon as the wheels hit the runway; now, he had become one of them. His parents, his wife, and his children had all become used to the fact that Alex never really took his vacations—at least, not from the Internet.

During one of those vacations, on a beautiful island off the coast of Massachusetts, Alex decided to tally up how

he was spending his time on line and how much of that time was going toward work. The catalyst for this was an innocent question from his son: did Alex have time to go to the beach that day, or did he need to keep doing work on his computer? The question had struck home. Alex was choosing to sacrifice precious moments with his family that he would never recover—and the memories of one another that he and the children would never have—for the sake of time on the Internet e-mailing and doing research for work. He suspected that the “work” was probably less than 50 percent of the time he was spending; that checking e-mails and reading news articles took him on a wandering path of distractions that stole his time.

So Alex got a notepad and, every thirty minutes, wrote down what he had done in the previous half hour. At the day's end, he tabulated how he had spent his time on the computer. He found that less than one-third of his time on line actually went to work tasks; the rest was spent in vapid minutes and hours of surfing, replying to e-mails, and doing other things that didn't need to be done on a beautiful summer day while his children were at the beach. Technology, he concluded, had turned him into the kind of person he did not want to be. He vowed to gain control of the monster.

Vivek Nearly Dies from E-Mail Withdrawal

To say that Vivek nearly died from e-mail withdrawal overstates the case, of course, but only by a little. Vivek grew

up programming computers and immigrated to the United States to work in technology. As he ascended through the ranks at large financial institutions, and as the Internet grew in importance, he launched two start-ups and took one public. A natural networker, Vivek used technology to build a massive web of friendships and connections across business, media, and government. Maintaining that web of connections, however, took a considerable amount of energy.

Vivek's hometown paper published a full-page paean—titled “Viva, Vivek!”—to Vivek's relationships with his employees. Behind the scenes of this success, though, even as he juggled the tasks essential to managing a growing start-up with two hundred employees and closing multi-million-dollar deals, Vivek was spending ever more time feeding his network. And juggling all of this meant—he thought—staying constantly connected.

On a vacation cruise with his family to Cancun, Mexico, Vivek felt compelled to check his e-mails and his texts. His company was going through a difficult patch because of a downturn in the economy, and Vivek consequently felt distressed and miserable, even on vacation. What Vivek wanted, first and foremost, was access to e-mail so he could know what was going on and not miss anything. His wife, Tavinder, tried to tell him to slow down, not to worry, and to relax. He knew that he shouldn't check his e-mails. And in fact he couldn't: compounding his stress and frustration, the ship's computer systems weren't working.

Then Vivek started to feel chest pains. At first he

ignored them. As he climbed the pyramid of Chichén Itzá, in the Mayan ruins on Mexico's Yucatán Peninsula, the pains became increasingly severe, and he began to feel nauseous. The views were stupendous. People dreamed for their whole lives of visiting this location and walking up these steps. Yet, amid the majesty of one of the greatest civilizations ever, Vivek's focus was his wish to connect to the Internet.

On the flight home, the chest pains and nausea turned into a shooting electric current in his left arm, and Tavinder insisted he go to the doctor. Even then, Vivek said he needed to first go home to check his e-mail.

Fortunately, Tavinder prevailed; once they landed, she drove him directly to the hospital at the University of North Carolina. Vivek blacked out as he entered the emergency room, and sat propped up in a wheelchair as they registered him. His next memory was of waking up after lifesaving surgery. Had he waited another hour or two, his doctors told him, Vivek would have been dead; none of his e-mails would have mattered. Over the course of the cruise and on the flight home, he had been having a massive heart attack, which caused permanent injury to his heart.

It is impossible to precisely apportion the blame that e-mail and other technologies share for this, but Vivek is sure that the stress of feeling the need always to be digitally connected played a major role in his heart attack. The ceaseless need to feed the technology monster had subverted Vivek's awareness of the need to properly care for himself.

Vivek recovered and got off the corporate and start-up treadmills. He changed professions, from technology CEO to academic professor and researcher. His life goal became to educate and inspire others to make the world a better place. He gave up the pursuit of initial public offerings (IPOs) in favor of the pursuit of knowledge. He also began to learn about mindfulness. He started meditating, exercising, and hiking. It may sound clichéd, but he had realized that the old way of life—one of technology-induced stress—would kill him.

Though he now viewed technology with some caution, Vivek remained enthralled with its remarkable potential. Technology wasn't entirely bad, he knew. He believed that it had the potential to solve the world's greatest problems: hunger, thirst, lack of shelter, disease. In his native India, for example, technology was improving the lives of hundreds of millions of people by letting them communicate, giving them access to financial services, and making health care more affordable. Despite his love-hate relationship with technologies that demand attention (social media and e-mail), he knew that he had neither the desire nor the ability to entirely stop using them. He needed Twitter, Facebook, and LinkedIn to communicate with a broad group of followers around the globe, who even now share ideas with him and connect him with interesting people along the way. He wasn't about to give up e-mail and return to snail mail.

Still, Vivek recognized a building tension, a conflict with the happiness and mindfulness he felt when he took a break from technology on his hikes in nature or on

vacations without smartphones. That conflict, he realized, reflected a false choice.

Vivek began to take note of the various ways in which technology was separating him from the people he cared about. He noted that he often sent text messages to his sons instead of speaking to them, even if they sat in the next room. He noted that he spent less time with old friends and felt satisfied sending them e-mails. Broadly, he found that he had begun to avoid speaking on the phone unless it was entirely necessary. In fact, he sensed that technology had made him less patient and less willing to wait: less empathetic.

How Technology Hacks Our Happiness

In this book, we dive deeply into what caused the unhealthy behaviors that became our normal state of existence for many years. We are both seasoned technology executives who have been immersed in technology since our earliest years. We both spent time programming computers in our youths in the early days of PCs. Both of us were early adopters of the Internet. Vivek built two software start-ups and worked as both a programmer and a senior technology executive at a major investment bank. Alex began his career in journalism covering technology before going to work for a series of technology start-ups and companies, including one, Mozilla, that develops browsers and seeks to maximize consumer consumption (as do all browsers and nearly all phone and web applications).

We have both been wary of the impacts of technology on our lives yet helpless to control our relationship with it—which included compulsive checking of social media or e-mail, texting while driving, and watching specific queries on Google or YouTube digress into random excursions across the Internet. And in the back of our minds, we have both started to wonder whether what others perceive as our diminished patience and what we perceive as diminished empathy may reside in subtle but critical changes in the way our brains function as a result of our constant immersion in technology. (And research findings that use of the technology leads to changes in physical brain structure—see below—give such concerns a strong basis.)

We know that we may come across as grumpy quasi-Luddites lecturing millennials and Generation Z on how messed up their lives are and how technology is destroying their generations. That isn't our intent. In many realms, as we acknowledge, technology has made our lives significantly better and emotionally richer by giving us amazing, unprecedented ways to connect. Alex and Vivek both continue to use technology to communicate with their children and spouses. Truth be told, we have both been hypocrites, simultaneously lecturing our children and others on the negative impacts of technology (and in Alex's case, restricting its use in his home) while using technology in the same destructive fashion we speak against because its value remains undiminished in our eyes.

Rather, we want you, our reader, to think about this: technology is not always a benign, innocuous device with

a screen that we can turn on and off when we want to. The companies that make technology—software and hardware—have their own reasons to command our attention, and their means of doing so are not confined to traditional tools of manipulation. The artificial intelligence they deploy seeks increasingly to surreptitiously guide our movements and thoughts, outsmarting us and influencing us in subtle ways to do the companies' bidding (Click on more ads! Like more posts! Don't leave, ever!). These companies employ brilliant mathematicians and data scientists to persuade us to use their offerings—generally meaning spending significant time and attention.

We are encouraged that so many in the tech sector seem to be waking up to the dangers long foreseen by visionaries such as Steve Jobs and Bill Gates (both of whom severely restricted their children's use of technology even as their companies sold their products aggressively to schools and children). But the current corporate demand for our increasingly scarce attention, in what has been dubbed an "attention economy," is designed to translate our time into income for corporate coffers. This is why Facebook, Google, and all other companies that traffic in messaging, social networking, browsing, and similar activities measure their success in amount of time spent per user, or in the number of actions a user takes (Likes, searches, clicks, tweets). When that number rises over time, investors are usually happy. When it falls, or even when it rises too slowly, someone's job is at risk—laying even more painfully bare the reality that technology companies are primarily (no surprise)

in it for the money. Of course, we knew that. But we also listened to high-minded language about “connecting the world” and “organizing all the world’s information.” For a long time, we gave those companies a free pass. It’s time for us to wake up and examine, gimlet eyed, every interaction we have on line and to think hard about how and when technology commands our attention—and, most importantly, to what end.

In seeking to reduce our choices, attention-economy companies limit our ability to choose for ourselves. This is how they control the game and tilt the scale in their favor, and this is why the news and information appearing to us on social-media sites exclude information that might challenge our worldviews. This is also why search results today favor larger companies and stores over the family-owned neighborhood stores that sponsor our local sports teams, pay property taxes, and give back directly to our communities. Though the big chains can pay for our attention, the small stores can’t afford to. And so technology is nudging us toward choices with long-term implications for our communities—which, with every click, we remake in the image that the tech giants desire.

As well as affecting our immediate relationships with technology, these restrictions in choice have secondary and tertiary impacts. A growing body of research shows that technology exposure diminishes empathy.² A strong correlation has also been found between the increase in use of technology and a reduction in book reading.³ Given the nature of our world and of this kind of technology, that

trend may seem logical and benign. But reading books has long been associated with numerous positive human outcomes in education and in life. So anything that leads to a reduction in book reading should be weighed carefully for its positive and negative effects over the long term. A growing body of evidence suggests that people remember and learn more from offline reading than from reading on electronic devices.⁴

The technology we use may also be changing the physical structure of our brains.⁵ Geospatial perception, for instance—map-reading ability and spatial awareness—may be taking a hit from the nearly universal adoption of GPS in smartphones and other devices. Early evidence indicates that this may result in a reduction in the size of the hippocampus in the brain, which plays critical roles in memory formation, learning, and happiness. We simply don't yet know what all the long-term impacts of this change will be.

The brain's plasticity makes it amazingly adaptable, and this adaptation may well help us deal with modern life. It may free up the hippocampus for tasks more urgent than those we can outsource to Google Maps. But choosing not to think about such matters is a way of ceding our choice and free will. Much as Daniel Kahneman considers two types of happiness and two types of thinking in his seminal book *Thinking, Fast and Slow*, we need to consider the impacts of technology in multiple ranges: the immediate direct impacts, the immediate or near-term secondary impacts, and the longer-term impacts.⁶

Fitness trackers are a case in point. A few years ago,

these devices were almost universally hailed as a simple, effective way for technology to drive healthy behaviors. Creating a reward structure for activity and movement, and taking advantage of the same psychological incentives (discussed in chapter 1) that drive us to continually track our social media feeds to constantly track our step counts should be good for humankind, right?

It turns out that humans adapt fairly quickly to fitness trackers and compensate for the step counts in unforeseen ways. A 2016 University of Pittsburgh study put 470 people on a low-calorie diet to lose weight.⁷ Some of the participants were given fitness trackers, and others were not. After two years, participants who had worn fitness trackers had lost less body mass than those who had not. What had happened? People who used fitness trackers justified eating more on days when the fitness trackers recorded more exercise. Relying on external technological feedback in lieu of hunger signals, users of these devices ate more than they otherwise would have.

Another study, this time using fitness trackers and calorie counters in conjunction, gave mixed feedback on the devices.⁸ Some participants reported improved restraint in eating, but others reported that the use of activity-tracking and calorie-counting technology increased symptoms of eating disorders.

This is a recurrent theme in this book: some people handle technology better than others, which is why a one-size-fits-all approach is wrong for technology usage. As these examples show, our relationship with technology is

complicated, and the effects can rarely be seen in black and white. What is different and more urgent now is the rapid adoption that the newest technology systems have enjoyed. Fitness trackers went from fringe to nearly mainstream in less than five years in the developed world. Smartphones had become mainstream in slightly more than a decade, and the Internet took longer than that. Smart speakers, such as Google Home and Amazon's Alexa-powered Echo, are being adopted more quickly than smartphones or fitness trackers; these speakers bring an entirely new way for us to interact with technology.⁹ Today, we may be on the cusp of embracing and entering another rapid-adoption cycle: that of virtual reality and augmented reality (VR/AR).

More than any other human-computer interface introduced to date, VR/AR, with which we will interact through multiple senses, has the potential to overwhelm our defenses and become highly addictive. The web between technology and our senses is tightening. Even now, Elon Musk, perhaps the greatest technology entrepreneur of our time, is building products to directly link our brains to technology, bypassing fingers, voice, and other physical command structures.¹⁰ These are uncharted waters, and we urgently need an understanding of the three ranges of technology impact on humans (immediate direct effects, immediate to short-term secondary effects, and longer-term effects), and of the positives and negatives of every new rapid-technology cycle.

We, Vivek and Alex, believe that this boils down to a question of conscious choice. Technology that augments

our choices, or that we use in such a way as to broaden them, will augment our free will and our fulfillment. Technology that surreptitiously reduces our choices, that seeks to constrain us rather than vice versa, will limit and reduce them. We also keep in mind the paradox of choice: the poverty of riches that is yet another facet of modern technology (for more on which, see chapter 3). Addressing the importance of choice by simply increasing the number of options to choose from doesn't acknowledge the way our psyche functions. Rather, we frame the goal as maximizing both *conscious* choice and our ability, as thinking citizens of the world, to *define* our choices, define our lives, and, in doing so, regain control, living intentionally and so becoming happier and more productive.

That is the goal of this book: to build a different way for us to think about technology.

In our previous book, *The Driver in the Driverless Car: How Our Technology Choices Will Create the Future*, we posed three questions to ask of any new technology:¹¹

- ♦ Does it have the potential to benefit everyone equally?
- ♦ What are the risks and the rewards?
- ♦ Does it foster autonomy or dependency?

In this book, we take the next step and ask questions (and provide some answers) as to how we can regain control. Our society must learn to maintain our relationship with technology on terms that make it, on balance, a positive

set of tools, maximizing the wonderful things technology can do for us and minimizing the harms it inflicts. All of us, millennials and baby boomers alike, can benefit from a healthier relationship with technology. Our aim in this book is to help bring that about.



How Technology Removes Our Choices

The Tricks and Tactics Tech Uses to Control Our Actions and Stoke Addictions

If you use Google to search for “Italian restaurant,” you are likely to see a small box at the top of the screen with a few results below a map. The positioning is significant: viewers are significantly more likely to click on those results than on anything else on the page, much as shoppers are more likely to pick up products from shelves at eye level in supermarkets than from higher and lower shelves.^{1,2} But whereas in the physical world this limitation primarily affects our shopping experience, in the online and technology worlds, this algorithmic and sometimes intentional selection affects every subsequent thing that we see or do on that page—and far beyond it. The menu is the interface that controls the manner of engagement and sets limits on it, and the way menus are layered can radically alter the way we behave with technology.

For example, on iPhones Apple has an important—to Alex, critical—feature: the toggle that wipes in-app advertising identifiers that app makers can use to analyze and track users. Unfortunately, Apple places that feature deep

in the menu: three layers deep. As a result, few people use it, even though regularly using the feature might significantly benefit their privacy by making it much harder for companies to track their behavior in smartphone apps. (The industry would say that using it would lead people to have less personalized and less useful experiences, which is certainly true; there is always a trade-off.)

Apple has in general taken a strong leadership position in protecting the privacy of its customers—by minimizing storage of customer data and by designing systems such as Apple Pay to present fewer opportunities for third parties to access and potentially intercept those data. But its placement of that single toggle deep in the weeds on the iPhone illustrates how decisions by product makers influence our freedom of choice and our relationship with technology. By clearing that identifier regularly, phone users would wipe away some of the capabilities of application developers to accurately target and personalize in-product offers, e-mails, and other entreaties to further guide or limit our choices and set the agenda for us.

Another example is the ability to set notifications in the iPhone. Apple does not allow us to make global changes to all the notification settings of our apps. This means we must go through, app by app, and set notification settings. Sure, we can turn them all off by putting our device in “Do Not Disturb” mode. But that is a clumsy fix. Apple’s menu design for managing notifications reduces our choices and not necessarily to our advantage (which seems odd from Apple, a company that has become dominant precisely by simplifying technology).

As a number of thinkers in this field, led by former Google design ethicist Tristan Harris, explain, menus also frame our view of the world. A menu that shows our “most important” e-mails becomes a list of the people we have corresponded with most often recently rather than of those who are most important to us. A message that asks “Who wants to meet for brunch tomorrow?” goes out to the most recent group of people we have sent a group text to, or to preset groups of friends, effectively locking in these groups and locking out new people we have met. On the set of potential responses to e-mail that Google automatically suggests in its Inbox e-mail program, we have yet to see “Pick up the phone and call this person” as an option, even if, after a heated e-mail exchange, a call or a face-to-face conversation may well be the best way to communicate and to smooth the waters.

A feed of world news becomes a list built by a nameless, faceless algorithm of topics and events the system decides interest us. It limits our choice by confining it to options within a set of patterns deriving from our past consumption history, and this may or may not relate to our immediate needs or interests. Unfortunately, no one has yet developed an effective algorithm for serendipity.

From the start of the day, a feed of what we missed on Facebook or Twitter as we slept presents us with a menu of comparisons that stokes our fear of missing out (FOMO). This is so by design. However benign its intent, its effect is to significantly limit our frames of reference and our thinking.

A Slot Machine in Our Pocket

In May 2016, Tristan Harris published an influential essay titled “How technology is highjacking your mind—from a magician and Google design ethicist,” describing the many ways by which smartphones suck people into their vortex and demand constant attention. Harris traced the lineage of (both inadvertent and intentional) manipulation common in the design of technology products directly to the numerous techniques that slot-machine designers use to entice gamblers to sit for hours losing money.³

Inspired by Harris and other advocates of more-mindful technology product design, a small but growing Silicon Valley movement in behavioral design is advocating greater consideration of the ethics and the human outcomes of technology consumption. (After leaving Google, Harris launched a website, Time Well Spent, that focuses on helping people build healthier interactions with technology.)

Harris, New York University marketing professor Adam Alter, and others have criticized the various techniques that product designers are using to encourage us to consume ever more technology even to our own clear detriment. Tightly controlling menus to direct our attention is one common technique (one that is not as easily available to offline businesses). For his part, Harris suggests that we ask four questions whenever we’re presented with online menus: (1) What’s not on the menu? (2) Why am I being given these options and not others? (3) Do I know the menu provider’s goals? (4) Is this menu empowering for

my original need, or are the choices actually a distraction? We assure you, once you start asking these questions, you will never look at the Internet or at software applications in the same light again!

Another technique, alluded to in the title of Harris's slot-machine article, is the use of intermittent variable rewards: unpredictability in the rewards of an interaction. The first behaviorist, psychologist B. F. Skinner, introduced this concept with his "Skinner box" research.⁴ Skinner put rats into boxes and taught them to push levers to receive a food pellet. The rats learned the connection between behavior and reward quickly, in only a few tries. With further research, Skinner learned that the best way to keep the rats motivated to press the lever repeatedly was to reward them with a pellet only some of the time—to give intermittent variable rewards. Otherwise, the rats pushed the lever only when they were hungry.

The casinos took the concept of the Skinner box and raised it to a fine art, designing multiple forms of variable rewards into the modern computerized versions of slot machines. Those machines now take in 70 to 80 percent of casino profits (or, according to an industry official, even 85 percent).^{5,6} Players not only receive payouts at seemingly random intervals but also receive partial payouts that feel like a win even if the player in fact loses money over all on a turn. With the newer video slots, players can place dozens of bets on the repetition of a screen icon in various directions and in varying sequence lengths.

Older mechanical slot machines displayed three reels

and one line. Newer video slot machines display digital icon grids of five by five or more. This allows for many more types of bets and multiple bets in the same turn. For example, the player can bet on how many times the same icon will appear in a single row, how many times it will appear on a diagonal, and how many times it will appear in a screen full of icons, all in one turn. This allows players to win one or more small bets during a turn and gain the thrill of victory, albeit that in aggregate they lost money on their collective bets for the turn. The brain's pleasure centers do not distinguish well between actual winning and the techniques that researchers call *losses disguised as wins* (LDW).⁷ The machines are also programmed to highlight near misses (nearly enough of the right numbers), since near misses actually stimulate the same neurons as real wins do.⁸

Machine designers use myriad other clever sensory tricks—both visual and auditory—to stimulate our neurons in ways that encourage more playing. As explained in a 2014 article in *The Conversation*, “Losses disguised as wins, the science behind casino profits,”

Special symbols might be placed on the reels that provide 10 free spins whenever three appear anywhere within the game screen. These symbols will often make a special sound, such as a loud thud when they land; and if two symbols land, many games will begin to play fast tempo music, display flashing lights around the remaining reels, and accelerate the rate of spin to enhance the saliency of the event. When you win these

sorts of outcomes you feel as though you have won a jackpot; after all, 10 free spins is 10x the chances to win big money right? The reality is that those 10 free spins do not change the already small probability of winning on any given spin and are still likely to result in a loss of money. For many games, features such as this have entirely replaced standard jackpots.⁹

What helps these techniques entice humans to keep playing is that our brains are hard wired to become easily addicted to variable rewards. This makes sense when you think that finding food in prehistoric, pre-agricultural times was a perfect example of intermittent variable rewards. According to research by Robert Breen, video-based gambling games (of which slots represent the majority) that rely on intermittent variable rewards result in gambling addiction three to four times faster than does betting on card games or sporting events.¹⁰

Smartphones were not explicitly designed to behave like slot machines, but their effect is nearly the same. As Harris writes,

When we pull our phone out of our pocket, we're playing a slot machine to see what notifications we got. When we pull to refresh our email, we're playing a slot machine to see what new email we got. When we swipe down our finger to scroll the Instagram feed, we're playing a slot machine to see what photo comes next. When we swipe faces left/right on dating apps like Tinder, we're playing a slot machine to see if we got a match. When we tap the [red badge showing us the number

of notifications in an app], we're playing a slot machine to [see] what's underneath.¹¹

Through this lens we can see how many actions deeply embedded in the technology we use are acting as variable rewards systems, and when we look at the technology in our lives, we can find intermittent variable rewards in nearly every product, system, or device. Embedded in everything from e-mail to social media to chat systems to Q&A sites such as Quora, this reward structure is omnipresent and not easy for us to control without going to extremes and without constant vigilance.

The Empty Vessel of Social Approval

When you post your first picture on Instagram, the application automatically contacts your friends who are already on Instagram and asks them to give you some “love.” This is to encourage you to use the app more often and to get you hooked on social approval. It is a well-known product-design tactic in social networks and other consumer products. Both Twitter and Facebook encourage new users to immediately follow or connect with others they may already know in order to ensure that their feeds fill sufficiently to attract steady interest and to create a feedback loop of intermittent variable rewards. Sending some love seems rather innocuous, and the request is clearly not malicious in intent. But a little too much love can be bad for your soul when that love is empty and demand for it arises from a

hedonic treadmill of empty accumulation rather than from real social relationships and personal recognition.

We all need and compete for social approval at some level, from our families, our friends, and our colleagues. Even if we intentionally try to avoid seeking it, the social-media software and hardware and their mass penetration via the Internet have led social competition to occupy considerable portions of our devices, our time, and our thoughts. Teens posting messages on the popular photo-sharing site Instagram worry acutely about how many likes and comments they will receive. To members of Instagram, followers are social currency. In Snapchat, teens compete to maintain “Snapstreaks”—consecutive days of mutual messaging—with friends. On Facebook, the number of likes on a post or the number of messages you get on your birthday becomes a measure of your personal self-worth. On Twitter, journalists and intellectuals compete for retweets and “hearts.” On LinkedIn, we check to see who has viewed our profile, and the application provides us with weekly stats on the increase (as a percentage or an absolute number) in the number of people who have checked us out.

To be fair, some evidence exists that active participation in social networks leads people to feel more connected.¹² Facebook claims that chatting with friends and family, sharing pictures, and other positive interactions don’t make people sad, although it concedes that negative comparisons can lead to less happiness.¹³ Certain personality types, it appears, can better control the craving for constant likes

and approvals, and suffer less from the inevitable comparisons with those who are more popular.

But, in general, jealous comparisons kill joy, and technology has driven us to compare ourselves with others on the most superficial of measures.¹⁴ Furthermore, recent research on social-media use has found that it is the comparisons, which are unavoidable in social media, that contribute most to making users unhappy.¹⁵ Teenagers appear to be particularly vulnerable to this; being excluded or unloved on social media is one of the worst humiliations a high-schooler can suffer.¹⁶ Heavy social-media use has been linked to unhappy relationships and higher divorce rates.¹⁷ That may follow from social media's encouragement of social comparisons and self-objectification, which tend to lower self-esteem, reduce mental health, and inculcate body shame.¹⁸ Quitting social media has been linked to marked increases in well-being.¹⁹

This behavior of seeking likes and approvals also relates directly to intermittent variable rewards: the slot machine in our pockets and on our tablets and laptops. Not knowing how many likes you will get or when they will roll in, you check your social-media accounts frequently. And limits on choice and control compound the active promotion of destructive behaviors to escalate users into borderline obsessiveness.

The Bottomless Well

It's 11 p.m. on a weeknight, and you reach the end of the first episode of the latest season of *Stranger Things* on Netflix. It's late, and you know you should go to sleep. You have to

be up in eight hours to go to work, and you need your rest. But before you can close the application, the next episode begins to play. Netflix has conveniently loaded that episode in the background, anticipating your desire to continue following the story. And then, almost against your will, you are watching the next episode even if you intended not to. *Oh well, you figure, I can make up sleep on the weekend.*

Along with the millions of others watching Netflix at that precise instant, you have just been sucked into the bottomless well of consumption. Netflix has teams of PhD data scientists who work to figure out how to get you to watch more movies. As you watch Netflix, they watch you, tracking your behavior in minute detail. They track when you pause, rewind, or fast-forward; the days of the week when you tend to watch; the times of day when you watch; where you watch (by zip code); what device you watch on; the content you watch; how long you pause for (and whether you return); whether you rate content; how often you search content; and how you browse and scroll—to name just a few parameters. Truly, they are watching you watching them!

So it's hardly surprising that Netflix figured out that starting the next episode without even asking you would entice you to consume far more content. They noticed that some users were binge-watching and decided that automatically activating the next episode might be a good feature. Netflix launched "Post-Play," as the feature is called, in 2012. Other video-hosting companies quickly followed suit. It got so bad that Apple built a feature into Safari that blocks auto-play videos on webpages and, in January 2018, Google made this a feature in its Chrome browser! So how

much more do we consume when facing a bottomless pit of content? Real data on that aren't publicly available yet (although Netflix, YouTube, and Facebook certainly have them), but clues to the soaring amount of user time that Netflix, YouTube, and Facebook videos occupy are available in research and surveys. A 2017 report that surveyed 37,000 consumers found that Netflix binge-watching had become "the new normal," with 37% of binge-watchers actually partaking in their pastime at work!²⁰

Since Netflix launched the feature, every other major streaming video provider has taken advantage of the overconsumption that follows from automatic availability. Netflix, Hulu, YouTube, and HBO all have bottomless wells set up on their video applications. The lesson has not been lost on traditional online publications, either. Most media sites now offer suggested reading links at the ends of articles and in sidebars as well as highlighting "most popular," "most shared," and "most e-mailed" articles. Many of them, mirroring Facebook, Instagram, and Twitter, now have scrolling pages that cause each article to roll into the next without requiring a click. The goal is to boost consumption, at nearly any cost, even that of fostering a consumer's destructive behaviors. In effect, every digital company wants us to binge-watch everything, all the time. Our value to it has been reduced to the amount of time we spend in an application watching a video or playing a game.

This is hardly the first time that for-profit businesses have sought to induce addictive behavior. The soft-drink companies such as Coca-Cola, the tobacco companies,

fast-food chains, and convenience stores such as 7-Eleven all focus on building repeatable habits for reliable long-term consumption of their products. They have done this largely without real concern for the impact on the user's or consumer's well-being. To those whose paramount concern is profit, such disregard makes perfect sense. Why would they suggest that those constantly tapping a screen to place more bets (literal or figurative) consider the impact of their actions on their families, their finances, and their health? But most of the large tech companies stake a claim not to operate in such a vacuum: they claim to be doing what they are doing in part to promote the betterment of humankind.

True, Coca-Cola, PepsiCo, and other companies peddling addictive products also have lofty mission statements. But society doesn't take their mission statements seriously, and neither do they truly have the potential to better humankind except in underwriting charitable efforts, as Coke will never announce that due to the link of sugary drinks with diabetes it will cease selling those drinks. In contrast, Facebook, Twitter, and other social-network tools do have a unique potential to effect positive change; witness the impact of Twitter carrying the message of the Arab Spring movement, and the use of Facebook as a means of recruiting subjects for trials of experimental drugs, a significantly cheaper technique than the traditional recruitment methods.²¹

Another key way in which the online and Internet giants differ from the others lies in their ubiquity—and therefore their power—in our lives. No one spends nine hours a day eating McDonald's or hanging out in 7-Elevens. You may

carry a soda or a cup of coffee for several hours in a day, but you don't usually sleep next to it or take a swig of it in the middle of the night when you awake. You don't conveniently carry those experiences everywhere in your pocket and mount them on your dashboard. You don't totally freak out if you don't know where your soda is! The only exception we can think of is tobacco products. But even the most deeply addicted cigarette smoker can go for an hour or two without lighting up, whereas normal people who have a healthy relationship with online tools rarely go a full two hours during a working day without logging in, checking e-mail, or undertaking some form of social activity on line.

Equally troubling, recent research has associated binge-watching with sleep disorders.²² Netflix CEO Reid Hastings stated, half in jest, that the company's primary competition is sleep, perhaps not realizing the truth in his words.²³ We return to the effects of media technology on our sleep in chapter 6.

So large technology companies' decisions to default us to the bottomless pit of content show that they may not have our own best interests in mind. To be fair, Facebook, Netflix, Hulu, and YouTube all allow users to turn off this auto-play feature (though apparently HBO Now does not). But wouldn't it be better for everyone if people could opt *into* the feature rather than encounter it and have to opt out? A simple Play Next Episode button works almost as well. And when we want to opt out of video auto-play on Facebook, arriving at the right setting takes a few not necessarily intuitive steps. This naturally discourages people from turning the feature off.

This may seem a paternalistic suggestion, but making such repetition an opt-in feature would give users a chance to make a more conscious decision before they are trained to expect auto-play. In pausing, we temporarily break a pattern, returning decision-making to our conscious minds and establishing a fresh opportunity to sidestep or counter our addictive behaviors. And the rarity with which tech and application vendors allow users to opt in rather than opt out—or even to pause—puts the lie to any claims of innocence. They know that far fewer users would consciously decide to drink repeatedly from the bottomless well; and profit maintenance takes precedence over user choice.

*FOMO: The Gnawing Fear That We
Are Missing Something Important*

Fifty years ago, when we left the office or the job, we heard from our managers or employees only if there was a real emergency. Such communication would take the shape of a phone call. Today, notification inflation is part of every job. During an eight-hour workday, on average we check our e-mails nine times an hour.²⁴ We send texts to update our progress while we're in transit to the office or to let people know when we'll emerge from a meeting. Each of those notifications that we send in turn demands attention from its recipients. How many of those interruptions are necessary or even helpful? Probably fewer than 5 percent of them.

But these notifications are perceived as exceptionally valuable by the companies that make communication tools for work. For example, Slack was the fastest-growing

business chat tool in 2017. It was worth more than \$5 billion as of July 2017.²⁵ It looks a lot like nearly every other chat tool ever made, going back to IRC (Internet Relay Chat), but Slack uses numerous tricks to hook users and entice them to spend more time using the application.

In fact, the company is so convinced that constant notifications are a positive feature that its product designers resort to scare tactics should a user wish to turn them off. To ensure that Slack users buy into all this notification noise, Slack presents a stark warning when someone decides not to enable desktop notifications of Slack conversations: “Desktop notifications are currently disabled. We strongly recommend enabling them.” Slack would probably counter that its users can turn on Do Not Disturb mode inside the app whenever they wish to concentrate, but that very argument implies that interruption as a default state is optimal. We beg to differ: interruption as a default state appears to be miserable, unproductive, and bad for our health.

On top of notification inflation, then, we have built a culture of FOMO: fear of missing out. We check our e-mail first thing in the morning to see what happened while we were sleeping. This fills our brain with unnecessary conversations during its otherwise most productive and creative time, the morning. (That would be a lesser problem if the average e-mail message were more useful.) Productivity gurus such as Tim Ferris and Cal Newport intentionally avoid answering e-mails or texts until after they have completed their most important tasks of the day. This makes perfect sense when we consider how often we check e-mail.

University of California Irvine researcher Gloria Mark and colleagues found that workers check e-mail an average of seventy-seven times a day—and that checking e-mail constantly tends to increase worker frustration and stress.²⁶ If we had checked our e-mails seventy-seven times on the days when we were writing this book, we would never have finished writing the book!

We keep people on as Facebook friends even though we don't really want to, because we are afraid that we might miss out on something that people in our high-school class are doing, saying, or experiencing. We refrain from unfollowing people on Twitter because they might notice and take offense. Yet we keep those same people unmuted in our feed just in case they post something interesting. We use tools such as Nuzzel to save time by giving us a newsfeed of everything that our friends are reading (or at least posting on Twitter), although this also means we have more to read and are less focused in our reading.

And we spend time on Facebook Messenger or WhatsApp chatting about things that have little to do with our work, to see what we've missed out on around the virtual office watercooler. In the tech world, Slack is very popular. The neighborhood version of Slack is NextDoor. On NextDoor, neighbors connect in useful ways to share information and to chat, but they also spend many hours in vitriolic arguments over whether dogs should be leashed in the park or whether it's okay to light a wood-fired stove in the winter. NextDoor, too, strongly encourages accepting notifications.

In our use of every screen device, and on nearly every app and website, some kind of Do Not Disturb function exists: on our laptop or phone, there are options to control notifications; in the various applications themselves, there are notification options; and of course there is the on/off switch. But somehow we rarely use them. And many work environments have unspoken understandings that a worker must respond to any e-mail, text, or chat from a superior within a certain period or face unpleasant consequences. Being labelled “unresponsive” and “not a team player” is often the code phrasing for someone who prefers to focus on his or her work rather than constantly monitor e-mail and chat messages in order to respond to superiors or colleagues.

*Forcing Us to Follow Their Agenda
to Reach Our Agenda*

Tristan Harris discusses how technology companies set our agendas for us by mirroring and magnifying brick-and-mortar stores’ strategies for influencing shoppers. For example, grocery stores put the most popular products—milk and prescriptions—at the back of the store in order to draw shoppers past as many products as possible, and they put things such as produce and deli and dairy displays along the outer walls to encourage shoppers to circle the stores.

Tech companies place similar distractions in the way of their own customers. Facebook, for instance, routes people through the newsfeed before they can see an event they are interested in. Naturally, we get distracted by our newsfeed

because there is always something new there. This results in further consumption of Facebook but slower progress toward our original goal (checking out an event).

Of course, whenever we use a free service, such as most of the social networks, bending users to the company's agenda to increase consumption of advertising is part of the price of entry. We all know and understand that. But maybe we would prefer a paid option with a direct-access option for key tasks and screens? Or maybe there's a better way to help us get directly to our intended destination. These are wishful and wistful questions. We have no illusions that such options will be forthcoming, as they would enable us to reduce our time in the application and redirect our attention for a few seconds or minutes per month, to the chagrin of shareholders and the cadres of mathematicians and computer scientists whose primary job it is to get us to click on ads. To be fair, Facebook announced in January 2018 that it would switch its algorithms to show in the newsfeed far more news from friends and family. But it remains unclear whether that also includes news articles or just personal updates. Alex, for one, has relatives with strong political views that oppose his own, and he would rather not see their postings of hyperbolic (and sometimes fake) news articles.

Tristan Harris dreams of a digital bill of rights that would mandate direct access: "Imagine a digital 'bill of rights' outlining design standards that forced the products used by billions of people to let them navigate directly to what they want without needing to go through

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