WHARTON | **EXECUTIVE EDUCATION**
UNIVERSITY of PENNSYLVANIA
Aresty Institute of Executive Education

HARNESS THE

POWER

OF DIGITAL

MARKETING

START HERE

Advance your ability to develop and execute an effective marketing strategy within today's rapidly changing digital economy in Wharton's newest program.
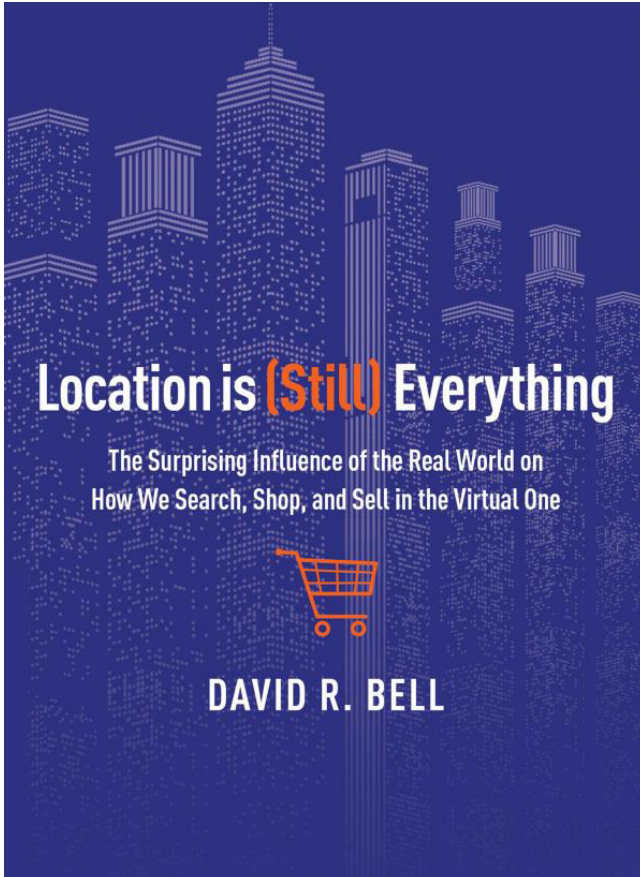
DIGITAL MARKETING
Strategies for the Digital Economy / December 5–8, 2016

> > WhartonDigitalMarketingStrategies.com < <

Location Is (Still) Everything

The Surprising Influence of the Real World on
How We Search, Shop, and Sell in the Virtual One

DAVID R. BELL

This is an excerpt of the book *Location is (Still) Everything* written by Wharton Professor David Bell. For more information about Professor Bell and his Wharton Executive Education program, ***Digital Marketing Strategies for the Digital Economy,*** please visit:

WhartonDigitalMarketingStrategies.com

ABOUT THE AUTHOR

David R. Bell is the Xinmei Zhang and Yongge Dai Professor at the Wharton School, University of Pennsylvania. An award-winning scholar and teacher, David developed Wharton's first course on digital marketing and electronic commerce. He holds a PhD from the Graduate School of Business at Stanford University and is an active angel investor in several digital marketing and e-commerce start-ups. David lives in Philadelphia and San Francisco, but he remains a citizen of his native home, New Zealand, and a fan of all things Kiwi.

The Surprising Influence of the Real World
on How We Search, Shop, and Sell
in the Virtual One

T he TV was on in the background.

"He's not the Messiah, he's a very naughty boy!" Brian's mom is half shouting, half shrieking to the hordes who've been following her son around in Monty Python's *Life of Brian,* after mixing him up with someone rather more important.

Distracted, I took a look at the *Daily Mail* on my iPad.

The leader of the free world, it seems, has a slightly different problem. President Barack Obama, unlike Brian, is certainly a legitimate leader, but he has been crowned the "King of the Fake Twitter Followers" for having more than 19.5 million followers who don't actually exist.[1]

This past summer I'd been following another Bryan (Cranston) myself, in the form of Walter White, the central character in the hit TV show *Breaking Bad.* Walter was mentioned on Twitter nearly 200,000 times during the screening of the show's finale in late September, and a disproportionate number came from real-world locations on the coasts

---

1   David Martosko, "Barack Obama Is Political King of the Fake Twitter Followers, with More Than 19.5 Million Online Fans Who Don't Really Exist," *Daily Mail*, September 24, 2013, www.dailymail.co.uk/news/article-2430875/Barack-Obama-19-5m-fake-Twitter-followers .html.

of the United States. After the East Coast showing began, the tweets peaked at over 22,000 per minute![2]

I looked around my apartment.

I needed to unpack those Soap.com and Harrys.com boxes containing my household supplies and razors, respectively. I'd had them delivered to work, so they'd been sitting in the marketing department at Wharton for a few days. Perhaps due to the striking packaging, some of my colleagues were now placing orders too. I wondered if there would be some ripple effect to their friends and neighbors as well.

In five days I was scheduled to travel to Tyler, Texas, and if I was going to catch the New Zealand All Blacks in their next big rugby game, I'd have to pipe the live feed from StreamHunter.eu and would probably join the commentary on Rugby365.com. There aren't too many real-world rugby fans in Tyler, so the virtual-world community was my way out. I then had a fleeting thought: Was all this virtual-world connectivity making me too insular in my interests? What real-world delights in Tyler would I miss as a result?

It was getting late, but I needed to write a bit, so I reflected on a couple of my recent findings in a research project that had really intrigued me. One of my coauthors, Jeonghye Choi, and I had found that Diapers .com, a seller of baby products, had a dramatically *higher* demand for its services in locations where there were proportionally *fewer* households, percentagewise, with young children. Real-world sellers in these locations weren't too fussed about catering to these "minority" customers. So a virtual-world seller like Diapers.com was a godsend for these people.

Another coauthor, Jae Young Lee, and I had also just found that within real-world communities with high levels of trust and interaction, information about a virtual-world seller specializing in men's apparel, Bonobos.com, shared by existing customers was more believable to potential customers. In fact, this real-world information transmission was driving a lot of the virtual-world sales.

Finally, I decided to turn in, but something in the *New York Times* caught my eye: "To Catch Up, Walmart Moves to Amazon Turf"—and a

---

2   Julia Boorstin, "Why and How the 'Breaking Bad' Finale Broke Records," Media Money, CNBC, September 30, 2013, www.cnbc.com/id/101074132. See also Sara Morrison "'Breaking Bad' Finale . . . By the Tweets (Updated)," tv.yahoo.com/news/breaking-bad-finale-tweets-170345402.html.

(virtual) light went off before I flicked the real one down.[3] The real and the virtual worlds are coming together in exciting ways, and there is a story to be told about why and how this is happening.

For as long as we've had trade and commerce, much of the underlying economics has been explained by location. *Déjà vu!* It startled me how much this remains true in the borderless, and often anonymous, virtual world. It became clear to me that night that it isn't simply *who* you and I are that's important for the answers but also *where* we are. Even in the virtual world, it's *still* all about "location, location, location." Furthermore, virtual-world sellers of products and content have very predictable demand patterns—once you understand where the target customers are.

The Real World and the Virtual World

The voice-over that introduces *Star Trek* states that space is the "final frontier." It is out there, vast and different from everything we are used to on Earth. Similarly, the Internet and its related technologies give us access to incredible new worlds of products and information. Only a few short years ago, these things were inaccessible and perhaps even beyond comprehension.

Since the Internet is a transformative technology, it's obviously worth knowing how best to make use of what it offers. It can improve the way you spend your money, make your job more interesting (or even eliminate it!), transform entire industries, and connect you with others the world over. More broadly, it plays a key role in everything from the organic discovery of talented musicians like Lorde (the pop star from Devonport, New Zealand) to the trajectory of important political and cultural events like the Arab Spring, to why I stopped buying razors in the supermarket and get them directly from Harrys.com.

So while it's one thing to use the Internet (most of us do), it's another to understand how it might help, hurt, or alter our individual and

---

3   Claire Cain Miller and Stephanie Clifford, "To Catch Up, Walmart Moves to Amazon Turf," *New York Times*, October 19, 2013, www.nytimes.com/2013/10/20/technology/to-catch-up-walmart-moves-to-amazon-turf.html?_r=0&adxnnl=1&adxnnlx=1382332994-00wfCO eqN2362ZziCu9DvA.

collective lives. In fact, the impact it is having on our daily lives and on commerce all over the world exceeds anything that has preceded it. This includes momentous inventions such as the internal combustion engine and the printing press.

The sheer scale of the e-commerce sector in the economy gives some perspective as well. According to the most recent US Census e-commerce reports, about $5.5 trillion changes hands online versus about $19 trillion offline.[4] The rate of growth of e-commerce over the last decade exceeds 125 percent (more than four times the "nominal" rate for offline commerce). Among the four key sectors of the economy in general, manufacturing, wholesale, retail, and services, retail growth is the most explosive, exceeding 220 percent over the last decade.

What we are finding is that the way we use the *virtual world* of the Internet—for commerce and for information—is dictated to a large extent by the *physical world* that each of us resides in. This influence is pervasive, and sometimes counterintuitive, with implications for our lives in both worlds.

There is a key implication that I will explore throughout this book: if you and I live under different physical circumstances and in different physical environments, we will use the virtual world very differently— even if we are very similar people in terms of our ages, incomes, education levels, and so on. We'll shop differently, search differently, and won't be equally attractive to sellers.

So if we want to make sense of how we use the virtual world, we need to have a framework for understanding the different influences of the real world on how we shop, search, and sell online.

We'll also need to think about what people want (e.g., the desire to get things done quickly, to have access to reliable information, and to be able to find great deals on things they'd like to have) and what motivates these desires. Sometimes people want to be transparent—or at least we want others to be. At other times, we'd rather be anonymous.

If we're fully cognizant of these fundamental drivers of behavior, we can develop usable insights into the conditions under which the virtual

---

4   United States Census Bureau, "E-Stats," United States Department of Commerce, Economics and Statistics Administration, May 23, 2013, www.census.gov//econ/estats/2011reportfinal .pdf.

world enhances, supplants, augments, or replaces what we do in the real one.

This knowledge is not only interesting in its own right (share it and you'll be more popular at cocktail parties), but it is also practical for those of us who want to create new Internet businesses, turbocharge existing ones, or just better understand what these new technologies mean for us.

Young, wealthy, and well-educated citizens are the most active in the virtual world. This reflects the so-called digital divide, or the discrepancy between those who have access to the Internet and those who do not. Within a country, individuals who live in rural areas, or those with lower educational attainment and less income, tend to use the Internet less. Beyond this basic discrepancy in access, people in some locations are far more apt to shop online than those in others. Certain kinds of individuals use the Internet to "liberate themselves" from their lack of offline options.

Why are these things so?

The value of reviews and information depends a lot on from where (and not just from whom) they come from. Some sites generate almost all their traffic from particular locations. Buyers in online auctions prefer to deal with sellers who live close to them. When we shop offline, the distance that we need to travel to reach sellers always matters for our choices, but as I explain later, we're even less willing to travel further when we're searching for sellers on our mobile devices.

What's behind these and other effects of the physical world on how we shop, sell, and search in the virtual world?

That's what this book is all about.

Location, as it turns out, is (still) everything.

First Things First—Physical Location Before the Virtual One

In the story of the chicken and the egg, it's hard to tell which came first. Not so with the physical and virtual worlds. The physical world, including the cities and many of the communities that we inhabit, has been around for a while. You've no doubt put some thought into where you're currently living.

Your station in the real world is, in large part, a choice.

It's unlikely that you simply fell into the flat, town house, apartment, or suburban McMansion that you currently live in. There probably are good reasons behind the housing choices that you've made. The same goes for your choice of city.[5] And for the company that you keep, including friends, acquaintances, and the people you follow online.

These decisions are not like the "decision" that occurred just prior to the Colgate toothpaste falling into your shopping cart. They are, for the most part, and for most of us, carefully considered decisions. They have a long shelf life.

That's good news for this book.

It means that the relationships that exist between our *physical-world locations* and our *virtual-world behaviors* will be robust. They'll be pretty stable and quite predictable. Indeed, the very idea that your circumstances in the physical world shape your behavior in the virtual world may seem rather obvious after you've seen the reasons why. (Good and lasting ideas always seem intuitive once you have the means to appreciate them.)

Nevertheless, elaboration is required because many of the nuanced observations that support this central idea are not obvious. So, too, are the implications for what this means for consumers, for entrepreneurs, for investors, for regulators, and really, for all of us.

"Newton Got Beaned by the Apple Good"

Even if you didn't pay much attention to science lessons in high school, you probably still have a good idea of what Newton discovered. When the apple (literally) dropped, Newton was hit with the concept of gravity. A parallel concept, the "theory of (commercial) gravity" is central to, and very important for, this book.

Here's why.

Gravitational pull is the reason I'd be better off taking the elevator

---

5 Although people do of course end up in cities they don't seem to like a whole lot. The derisive and provocative site phillysucks.com is a testament to some Philadelphians' dissatisfaction with their city. If you're curious about people's negative reactions to *your* city, just go to Google and type, "Why is [your city] so . . ." and see what comes up.

in my apartment building rather than the "shortcut" of jumping out the window onto the street. Similarly, the real world imposes gravitylike forces and other frictions on all of us as we search, shop, and sell.[6] The practical nuances are a bit different from those exerted by the Earth's physical gravity, but the principle at work is very comparable.

Say that I want a cold beer to combat the oppressive Philadelphia summer heat (I do). Consider too that I'm a lousy planner (I am) and that my fridge is barren (it is). This means that I've got to get up out of my chair and head to the store.

The liquor stores that are closer to me exert more "pull" over me. Other stores are simply too far away and will have no (gravitational) pull.

I like beer, but I am not driving to Wilmington, Delaware, to get it!

However, before I visit *any* of the stores that have enough "pull" over me to get me in the door, I won't know exactly what they have in stock or how much I'll have to pay. I usually can't figure that out until I get to the stores and start scanning the shelves. On top of all this, if it's a Sunday, then because of where I live (Philadelphia), all of the liquor stores will be closed.

So there you have it. The real world is throwing a few obstacles in front of me before I get that cold ale. I need to transport myself to a store; I don't quite know what I'll have to pay (or sometimes even whether I am getting ripped off by my local proprietor); and, if my thirst coincides with a particular day of the week, I am in deep trouble.

Why am I bringing all of this up?

Well, it's often said that the Internet and its related technologies "reduce frictions" and therefore "make the world flat."[7] The virtual world sits there above us (or perhaps below), and it can be accessed at any time, anywhere, by anybody. This is an appealing idea, but it's not quite right.

---

6 The word "friction" is a good one. Economists like it a lot because it conveys the idea that searching and shopping for goods and services takes effort and involves "resistance." Hence, it's a good way to think about what is going on when we have difficulty getting the products and information that we want in real markets.

7 A fascinating piece by Richard Florida from George Mason University highlights this point from another angle. He shows in map form that there are enormous "spikes" of creativity and talent in certain cities around the world (as measured by, say, the number of patents and scientific citations). See "The World Is Spiky," *Atlantic Monthly*, October 2005, 48–51, www.theatlantic.com/past/docs/images/issues/200510/world-is-spiky.pdf.

For starters, it's only *half* true.

Now the first part is certainly correct. Frictions get reduced and, in some cases, are practically eliminated in the virtual world (we will see this in detail in chapter 2). And it's definitely true that many of us now have access to products and information, largely independent of the physical world that we inhabit.

The second part, however, is not true.

Even though the Internet has the *potential* to make the real world flat,[8] this potential is not always realized, and for a very good reason. As long as we still live in the real world, its gravity and frictions will still impact the choices we make there. And, because they impact our choices, they will also affect the *relative* attractiveness of things available online. The real-world landscape we live in even influences our motivations to utilize the virtual world in the first place.

Anyone in the United States (or even the world) *could*, for example, go to Bonobos.com and buy a pair of comfortable and stylish pants. (In fact, I encourage any male aged roughly twenty to forty-five who has not already done so to visit the site; "pantsformation" awaits!) But *the chance that a specific individual actually visits the site depends a lot on where he or she lives.*

The presence of local stores, as well as that of trendy and friendly neighbors who may have already tried the product, or who have endorsed it, will play a role in this decision. So too will the prices charged by the local stores, their selections, and whether or not they add sales tax to the final price.

Linking the Real World and the Virtual World

So, the *virtual world* of the Internet— with its products and information—sits there, offering us all kinds of stuff. And, importantly for our purposes, it offers us things (almost) *regardless* of where we live. Pretty much wherever we are, we can get anything we want.

In theory, products and information can traverse the world very

---

8   If you're interested in more details, see Frances Cairncross, *The Death of Distance: How the Communication Revolution Will Change Our Lives* (Boston: Harvard Business School Press, 2001).

easily via the Internet. For example, I can be anywhere in the United States (or even the world) and follow @fancyckn's missives on Twitter. Whether I live in Los Angeles or Iowa City, I can buy a pair of stylish Warby Parker glasses for $95. I have 24-7 access to flights on the United Airlines app, and the prices and flights available are the same at any time, regardless of where I happen to be.

So wherever I am, the virtual world doesn't really change at all. Conversely, the *real world* varies dramatically from one location to the next, in terms of products, information, and entertainment available offline. Depending on where I live, I will have more or less time to spend on social media sites, or even more or less inclination to use them. I'll have more or less need to shop online and be more or less willing to interact with others in either world. Additionally, my local options for eyewear (and even the need to be stylish or trendy) change as I head from place to place.

So, let's get back to what's flat and what's not. Even my desire to leave once in a while and book a United Airlines flight out of my hometown depends a lot on where I call home to begin with.

The virtual world *is* flat in terms of the opportunity that it delivers to all of us, but it *is not* flat in the way that we use it.

And the reason is simple.

Because the way we use it to search, shop, and sell depends on where we live in the *real world,* which is anything but flat.

My own personal journey through the real world has shaped the way I think about the virtual world. And where I currently live most of the time (Philadelphia) causes me to use the Internet differently than I have when I've lived elsewhere (e.g., Los Angeles or New York City).

Adventures in the Real and Virtual Worlds

I grew up in a place famous for, among other things, a large sheep-to-person ratio. In Invercargill, New Zealand, during the late 1970s and early 1980s, the real world was simple and quite pleasant, but somewhat limited in its offerings.

I was fascinated by the seemingly endless variation in the real world that I saw not only in my own country when my family vacationed in

Christchurch and when we ultimately moved to Auckland, but also on television. There I saw the gray skies of London in *EastEnders*, the sunny open highways of Los Angeles in *L.A. Law*, and the urban intricacy of the Bay Area in *The Streets of San Francisco*. At that time, little did I know that I'd visit all of those places, and that I'd even do a bit of real- and virtual-world shopping and searching in each. (I haven't done any selling in these places as of yet, though.)

As a PhD student at the Stanford Graduate School of Business in the mid-1990s, I was drawn to study two very basic human activities, shopping and consuming. (Unfortunately, as a PhD student, I had neither the time nor the money for either activity!)

It was at Stanford that I learned about Reilly's law of retail gravitation, which describes in simple terms how you and I as consumers decide where to buy the goods and services that we consume. When William J. Reilly published this idea in 1931, there was, of course, no virtual world of the Internet. But his idea—that your choice to visit "location A" over "location B" as a place to shop depends on the relative populations of those two places and their relative distances from you—is still a powerful one.[9] The bigger that a place is, the more attractive it will be for shopping (it will have a greater selection of products and more favorable prices), and the farther away it is, the less attractive it will be (it will have less pull).

---

9   Specifically, the retail gravity model gives us a simple way of calculating the point at which a shopper is indifferent to the choice of shopping in either location A or location B. (Jean-Paul Rodrigue, PhD, of Hofstra University has a nice illustration available at http://people .hofstra.edu/geotrans/eng/methods/reillylaw.html.) If city A and city B are 75km apart, then a naive answer would be that someone living at the halfway point (37.5km) is indifferent between visiting either one. However, since more populous cities have more stuff, we need to take that into account. This leads to the following formula: Indifference Point Between City A and City B =

$$\frac{D}{1 + \sqrt{P_A/P_B}}$$

where D is the distance between the cities (75km in the example) and P_A and P_B are the populations of cities A and B. If we assume them to be 250,000 and 100,000 respectively, then a shopper located 45.9 km from city A and 29.1km from city B would be indifferent to the two.

This core framework is a very good starting point for trying to figure out how offline options for selling, searching, and shopping impact our online options for doing the same thing. If "big places" (that is, shopping options with attractive pricing and lots of variety) are far from you, then the offline world has little pull over your behavior, making the online world quite attractive.

Since I'd already been studying shopping and consuming in the offline world as a student, I was able to make this connection a few years later when, as a faculty member at the Wharton School of the University of Pennsylvania, I was suddenly confronted with the new and exciting world of the Internet.

"Internet 1.0" was bubbling right along when I arrived at Wharton. In the late 1990s and early 2000s, I watched with great amazement as new businesses like Pets.com (pet supplies), Webvan.com (groceries), and Kozmo.com (delivery) came and went. My curiosity was piqued, and I was determined to try to understand what was driving these opportunities, the spectacular successes, and these equally impressive failures.[10]

It was with a sense of optimism rather than schadenfreude that more than ten years later I spoke at the commemoration of the tenth anniversary of Wharton San Francisco. My talk was titled "From Webvan to Wag: Why the New Internet Retailing Works." By then I'd seen some interesting things—such as Netgrocer.com "defying" the law of gravity and acquiring customers from over eighteen thousand separate zip codes in its first three years of operation.[11] (When it started in May 1997, it had customers in a mere thirty-four zip codes.)

I'd seen Marc Lore and Vinnie Bharara found Diapers.com back in 2005, and then add a host of other sites to it under the umbrella com-

---

10 We'll talk more about this later, but for those who are interested, here is a nice look at "10 Big Dot.Com Flops" from CNN Money: http://money.cnn.com/galleries/2010/technology/1003/gallery.dot_com_busts/index.html. Suffice to say that Pets.com, Webvan.com, and Kozmo.com all made the cut, entering at first, second, and ninth, respectively, on this rather ignominious list!

11 What's cool about this company (and many others) is that while it does in a sense defy gravity by acquiring customers from everywhere, a deeper understanding of what local gravity means almost perfectly explains its sales patterns.

pany Quidsi.com, from Soap.com (household supplies) to Yoyo.com (toys). In 2011, they sold the business to Amazon for $545 million.[12]

In October 2007, two graduates of the Stanford Graduate School of Business, Andy Dunn and Brian Spaly, launched Bonobos.com, the first online fashion brand to exclusively target men. Bonobos operated almost entirely in the virtual world at first, but it has since become much more active in the real one through a partnership with the retailer Nordstrom and its own Guideshops. Andy and Brian had the vision to take a "touch and feel" product (clothes) to a medium that seemed, on the surface at least, ill suited to it (pardon the pun).

In February 2010, while in their final semester of classes, Wharton School graduates Neil Blumenthal, Dave Gilboa, Andy Hunt, and Jeff Raider kicked off WarbyParker.com. They targeted a category, eyewear, that they believed was "broken" in the sense that there is a great disparity between what consumers pay for products (often several hundred dollars), and what those products actually cost to produce (perhaps twenty-five dollars). Back then (and even now) a pair of glasses produced for say $25 and labeled with a fancy brand name cost more than an iPhone.

When the team started, they estimated the annual worldwide addressable eyewear market as about $65 billion, and also noted that no more than 1 to 2 percent of the $22 billion US market was conducted online. To the founders, this seemed to be a tremendous opportunity, rather than an indication that hardly anyone wanted to buy their glasses online. Since then, Warby Parker has opened stores and showrooms, including flagship stores in Manhattan, and has sold over 500,000 pairs of glasses, most of them through WarbyParker.com. I'll return to this exciting story in the epilogue to illustrate the key ideas in this book.

In short, I've spent the past decade at the Wharton School trying to understand how these and countless other virtual-world companies get off the ground, and why some succeed and some don't. In the process,

---

12 If you'd like to listen to a wonderful interview by Jessica Harris with Marc and Vinnie on the NPR show *From Scratch* and hear more about their friendship and business, go to www .npr.org/2013/09/18/223785364/marc-lore-and-vinnie-bharara-founders-of-diapers-com. It's a great human story of family and friendship, as well as a great business story.

I've figured out that a lot of the answers rest on where customers reside and what they do in the real world.

Of course, this is not the *only* reason that some e-commerce businesses succeed and others do not. It is, however, an essential piece of the puzzle, precisely because the real world and the options available there help to define and constrain the attractiveness of specific offerings in the virtual world.

In many ways, some things seem to have come full circle since I first started studying and working with Internet companies. On June 16, 2013, Reuters covered Amazon's foray into groceries and reported that "Webvan may have been the single most expensive flame-out of the dot-com era, blowing through more than $800 million in venture capital and IPO proceeds in just over three years before shutting its doors in 2001."[13] Time will tell whether Amazon Fresh will succeed where others have failed.

Of course, there is a lot more to life than just grocery shopping—we eat out, date, learn, and buy all manner of things—so we'll be looking at a lot of other examples as well. But this book is less about trends and specific business models, and much more about everyday human behaviors: things like interacting with friends and colleagues, looking for information, and shopping for stuff offline and online—and how they are affected by where we've chosen to live in the real world.

What This Book Offers *You*, the Reader

This book is really for anyone who is curious about how and why we use the virtual world of the Internet and its related technologies to shop, sell, and search. And, more than that, it's for anyone interested in understanding how our motivations and patterns for using the Internet are rooted in our physical locations and circumstances—and how those patterns may evolve.

This group of readers includes start-up founders, managers in the

---

13 Alistair Barr, "From the Ashes of Webvan, Amazon Builds a Grocery Business," Reuters, June 16, 2013, http://in.reuters.com/article/2013/06/16/amazon-webvan-idINDEE95F04H20130616.

e-commerce sector, current and future entrepreneurs, business and economics students, professional investors, and others, such as policy makers and regulators. So, if you want a framework to bolster your knowledge of how the virtual world works, and how to succeed in it, this book is for you.

With my friends and coauthors, I've conducted much of the core research for this book myself, seeking answers to the following:

- Why do sales patterns for Internet businesses often evolve in clusters?
- Why do locations that are far apart sometimes respond in the same way to new Internet businesses, and why does "similarity" of location go way beyond geographic closeness?
- Why do people who are "different" from their neighbors, in terms of their tastes and preferences, find the virtual world especially attractive?
- Why do trust and information sharing in local offline communities help Internet businesses grow?
- Why does location matter for information to be considered credible, and who accesses that information and relies on it?

In order to answer these questions, we've analyzed data from tens of thousands of US zip codes and examined millions of transactions from consumers all over the country. We've also thought a lot about theories that explain how and why one location differs from another. On top of that, we spent countless hours running statistical models on our computers. I've also learned a tremendous amount from the work of many colleagues, writers, and commentators with whom I have not worked directly. I draw heavily on all of these sources in this book.

The use of academic research as the foundation for the book provides at least two key benefits. First, academic articles can be hard to read and access—and in this book, I do the translation work for you. The phrase "it's only academic" exists for a reason, as some academic writing can be dry and, dare I say it, a bit obvious as well. Thankfully, there is also a lot of really insightful and creative work going on in the academic world and I was able to pick out the "good bits" for this book.

Second, the studies underlying an academic article are rigorously

conducted, and the final article has passed through peer review. This means that the insights we build together will be based upon robust foundations. An example of a fantastic, research-based book is *Mindless Eating*, written by my friend Brian Wansink. In describing how context shapes behavior, Brian does a great job of drawing out the key ideas from his academic work and making them accessible, fun, and interesting.

I've tried to write this book in much the same way.

Recently, I developed a new course at the Wharton School called "Digital Marketing and Electronic Commerce," and many of the ideas in this book were shaped and tested there. It goes without saying that my students in those sessions were an invaluable source of inspiration and enthusiasm for this book. While I greatly enjoyed doing the research required to prepare the course, I was frustrated by the lack of a single and unified resource on what I consider to be a defining element of the Internet: that its use and innovations are largely and systematically driven by real-world factors.

When students asked me questions, I had to refer them either to purely academic papers (not always the favorite reading material of MBAs, or undergraduates either, for that matter) or to stories and anecdotes in the business and popular press. While these latter sources are insightful and often entertaining, they are best understood when viewed through the lens of an integrative framework in a research-based book.

That's what the next two hundred or so pages are about—integrating and understanding what is currently known through principles that are more enduring. By the time you've completed this book, you'll have a firm grasp of the six key elements of real-world/virtual-world interaction. And you'll possess a structured approach, the GRAVITY framework, for understanding how virtual-world businesses become successful in particular physical locations, as well as a handy formula for testing your own ideas.

And who knows? You might even create the next Diapers.com![14]

---

14 If you're thinking of pursuing the same model in a different country, that's not a bad idea either. In fact, the Wharton graduate Davis Smith and his cousin and HBS graduate Kimball Thomas did just that, founding Baby.com.br.

GRAVITY: How the Real World Influences
the Virtual One

While this book's six chapters are self-contained, the concepts presented in each build on one another quite a bit, and for that reason the chapters in this book are probably best read in order.

In fact, there is a strong underlying logic to the layout of this book. The first two chapters set the foundation. The next three elaborate on key nuances of how the real world influences the virtual one, and the final chapter looks to the future and ties everything together.

In GEOGRAPHY I look at the key principles that explain how we decide where to live and what influences the kinds of goods and services that are available in our locations. Once we know how the real world is organized and varies from one location to another, we have a platform for understanding how the virtual world is used.

RESISTANCE shows how the real world and the virtual world interact with each other—in the consumption of both products and services as well as information and content. The real world often places obstacles in the way of our getting what we want, and the virtual world often helps us remove them.

ADJACENCY explains why it matters who is next to whom. Specifically, this chapter examines how demand patterns for virtual-world sellers spread systematically from one real-world location to the next.

VICINITY demonstrates that there is more to how things cluster in the virtual world than is explained by adjacency alone. When groups are formed in the virtual world, whether around the consumption of content or products, they are often made up of people who live far apart. The twist, however, is that these people who live far apart do share common real-world circumstances and preferences. This, in turn, drives similarities in their behavior.

ISOLATION explains the importance of the relationship we have with the people who live near us in the real world and how that affects what we do in the virtual world. On average (like it or not!), we are quite similar to our neighbors in many regards, but in situations in which we have different tastes for products and information, the virtual world liberates us in special ways.

TOPOGRAPHY concludes the book and looks to the future by ex-

plaining how products, information, and people move through and traverse the landscape of both the real and virtual worlds. I consider what happens, for example, when the virtual world goes mobile, and how the variation of real-world landscapes predicts the behavior of buyers and sellers in the virtual world.

YOU is the Epilogue. This postscript illustrates the GRAVITY framework at work, through a short case study on WarbyParker.com. It provides the key principles for how you might build a champion business or brand (including your own) in the virtual world, by leveraging your knowledge of how it's shaped by the real one.

I developed the GRAVITY framework to give you a cohesive and powerful way to understand real-world/virtual-world interaction. The idea of "commercial gravitation" is so central to how searching, shopping, and selling decisions come about that it is uniquely suited to serve as the organizing theme.

CHAPTER 1: GEOGRAPHY

How the Real World Organizes: Individual Decisions, Neighborhood Composition, and Country-Level Patterns

Chapter 1 is the foundation for this book. We can't understand how people use the virtual world unless we internalize some key ideas about GEOGRAPHY. These ideas tell us that the physical world is organized according to some simple and surprisingly robust principles.

First, I show how the choice of where we live (which city and which neighborhood) impacts the relationship that we have with the Internet. In the same way that we all have preferences for different environments—beaches versus mountains, towns and suburbs versus dense urban environments, and so on—how much we like a location as a place to live also depends on the kinds of goods and services that are offered there. This means that where we live dictates, to a great extent, how much we "need" the Internet, and for what kinds of things in particular.

I kick off chapter 1 by explaining one of my favorite research find-

ings: the location in which we live causes us to favor one brand (e.g., Folgers coffee) over that brand's closest competitor (e.g., Maxwell House), and if we move locations, we gradually adjust our preferences to whatever the majority in the new place prefers. Next, I examine how neighborhoods are formed, who decides to live together, and what this might mean for searching, shopping, and selling online. I briefly discuss Zipf's law and central place theory, two clever ideas that show us how our offline world organizes itself. With this foundation in place, we will have a nice starting point for relating our physical geography to our online behavior. The remaining five chapters explore what this implies for our virtual-world decisions (i.e., how we shop, sell, and search online).

CHAPTER 2: RESISTANCE

Why Frictions Exist and How to Overcome Them

Chapter 2 establishes the central idea of RESISTANCE. If you've ever needed a beer on a hot day or a new TV to watch the Rugby World Cup Final or the Super Bowl, you've probably experienced the two main impediments that the real world throws in the way of our getting what we want—*search frictions* and *geographic frictions*.

Specifically, we can find it costly and irritating to search for better products and services, better prices, and so on. More fundamentally, our choice of where to live makes us captive to whatever real-world options that location throws our way. In chapter 2, I explore how local constraints and conditions influence activity that takes place in the real world, and how the Internet helps us overcome these two restrictions.

The size and demographics of a city have a major influence on whether the Internet is used mainly by those who live there as a tool for searching or as a tool for shopping. In chapter 2, I explain why, all else being equal, residents of locations that are smaller, more remote, and more homogenous are more likely to use the Internet for shopping than residents of larger locations are. In locations that are larger, more urban, and more diverse, residents are more apt to use the Internet as a source of information than residents of smaller locations would be.

Even though everything in the virtual world is just a click away in theory, in practice our real-world location constrains where we go in the virtual one. In chapter 2, I explain why rugby lovers in Philadelphia are more likely to read rugby blogs from South Africa than they are those from Australia, and why most American consumers of pornography get it from Canada and not from England.

CHAPTER 3: ADJACENCY

Why Proximity Matters: Individual Interaction,
Mechanics of Adjacency, and Neighborhood Effects

In chapter 3, I describe the kinds of patterns that emerge when new Internet businesses get going, why they take the forms that they do, and why the most common and important pattern is fueled by ADJACENCY as a business evolves. This is because before we try new products we often talk to friends and acquaintances who share locations with us. In addition, we often just copy and emulate other people in our local neighborhoods. We adopt whatever they are doing after observing their behavior directly. In chapter 3, I explain why these two powerful habits—learning from others directly and copying them—underlie geographic contagion—that is, given the geography of a location and the reality of local options, there are good reasons why sales move systematically from one neighborhood to the next.

Of course, within a country or even a state, cities and neighborhoods can be quite different from each another. However, most people live in locations that contain neighbors who are similar to them in key ways. Birds of a feather do indeed flock together (something we academics call "homophily"), and this flocking has profound effects on virtual-world behavior.

Communication, emulation, and the co-location of similar kinds of people, help generate specific and predictable patterns of searching, shopping, and selling online. Whether you acknowledge it or not, you're actually quite similar to your neighbor in ways that really matter for predicting your behavior. The upshot is that customers do not simply find out about Internet sellers at random. Rather, Internet sellers

will see new customers emerge from real-world locations that are adjacent to other locations that already contain similar customers.

CHAPTER 4: VICINITY

Ties That Bind: Physical Distance, Social Distance, and the Spatial Long Tail

Here I build on our discussion in chapter 3 by introducing a richer notion of "similarity" between locations. This chapter shows the many ways locations can be related, beyond just their proximate or geographic relationship and why the meaning of "vicinity" changes over the life of an Internet business. Early on, new customers are generated through "local hot spots" and tend to be clustered geographically. Over time, the pattern of customer acquisition stops being driven mainly by *proximity*. The firm starts to acquire customers in more distant—but similar—locations in terms of demographics and tastes. For example, I demonstrate how sales for a new Internet business initially took hold among a few customers in Philadelphia and Pittsburgh, and later spread to more distant locations within the state of Pennsylvania—but these distant locations were quite similar in some important ways.

For example, although Philadelphia is closer to Harrisburg (about seventy miles away) than it is to Pittsburgh (about three hundred miles away), a large fraction of the individuals who live in Philadelphia are more likely to have tastes and traits in common with their counterparts in Pittsburgh than with those living in Harrisburg.

I also explain how Internet firms should "seed" markets to best capitalize on the effects of proximity and similarity. To conclude the chapter, I illuminate something I call the Spatial Long Tail (SLT).[15] In the SLT, initial sales arise from *proximity* among close neighborhoods in

---

15 If you've read Chris Anderson's excellent book *The Long Tail: Why the Future of Business Is Selling Less of More*, you're familiar with the idea of a "Long Tail" based on the sales ranks of products. While products in the "head" sell the most units, products in the "tail," which have small sales individually, contribute a lot to the company's overall profitability when they are all added together. I give a more complete explanation of this in chapter 4 and show that a parallel idea extends to sales ranks by geographies.

large markets or "hot spots," and later sales arise from *similarity* among distant but comparable smaller neighborhoods.

This concept shows that demand often comes first from customers who are adjacent to each other, and then through customers who are similar to each other, but live increasingly farther apart.

CHAPTER 5: ISOLATION

Why Isolation Offline Means Liberation Online: How the Virtual World Empowers "Preference Minorities"

Now, of course we can't be like our neighbors in each and every regard. I like lamb shank, but some of my neighbors are vegetarian. I like to work out at home using my friend Mike Karpenko's TapoutXT routine,[16] but my neighbor Paul prefers the gym. We all have unique tastes, styles, preferences, and needs. So some of our choices inevitably fall far outside the majority in our locations. When they do, *preference isolation* results. Preference isolation is an extreme form of geographic friction. You can't get what you want locally offline because your preferences differ from the tastes of the local majority.

Almost all local sellers, including supermarkets, clothing retailers, and restaurants, cater primarily to the tastes of the local majority. If they didn't, they would go out of business. As a result, those of us who end up in the minority (in terms of preferences) have a hard time getting what we need.

For example, no matter how often and how hard I've looked, I've never found find Vegemite[17] (which is great on toast in the morning) in a Philadelphia supermarket. It could be time to stop looking (and buy it online!).

The cool takeaway here is that certain Internet sellers get disproportionately greater demand from locations where their customers are *pref-*

---

16 In addition to the great routines at www.tapoutxt.com, I really enjoy Mike's commentary. "It's a water break, not a water stoppage!" and "'To quit' does not exist!" are two favorites.

17 Vegemite is a black paste that is a by-product of the process of brewing beer. It's delicious on toast with cheese and avocado, and it is much loved by "down under" residents from Australia and New Zealand.

erence minorities. I also explain why preference isolation leads customers to be less price-sensitive, and why for a given virtual-world seller (like Diapers.com) it has a different effect for market-leading brands (like Pampers diapers) compared with niche brands (like Seventh Generation diapers).

CHAPTER 6: TOPOGRAPHY

The Evolving Landscape of the Real and Virtual Worlds: People, Goods, and Information in Play and on the Move

Chapter 6 integrates everything I discuss in chapters 1 through 5 and looks to the future. Specifically, I explain how products and information are moved around and how they end up where they need to be—in short, what characterizes the TOPOGRAPHY, or landscape, when the real and virtual worlds start to meld together.

I look at the dramatic changes in behavior that occur as we all move from a fixed to a mobile virtual world. Among other things, I show that when you take the virtual world with you, via a device such as the iPhone or Galaxy, your local environment exerts an even stronger pull on your behavior than it does when you're on a laptop.

"Social capital," or how much we like and trust each other in our local communities, has a big influence on how easy it is to learn about new things from our friends and neighbors.[18] It also plays an important role in making the transmission of information about virtual-world sellers more efficient, and it can be a big help to those sellers.

Real-world location is also a key determinant of whether word of mouth (WOM) or some other method of customer acquisition (e.g., online search) is more effective for sellers. To illustrate this point, I introduce the idea of "benefit matching" by location. That is, when you and I live next to each other in the same real-world location, a given

---

18 Broadly speaking, social capital refers to the level of trust and interaction present among members in a local community. This book uses data on social capital collected from over thirty thousand US residents by Robert Putnam of the Kennedy School at Harvard University, which are discussed in his book *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon & Schuster, 2000)

virtual-world seller offers both of us an identical set of benefits, relative to our *real-world* options. So if I engage in WOM and tell you about the seller, what I'm saying will be relevant to you, and so you're more likely to act on it.

The real-world landscape impacts not only how the virtual world gets searched and delivers information, but also how physical goods are distributed. The local "topography" (e.g., tax rates, delivery times, and shopping environments) is different in each place. Continuous improvements in the information delivery and fulfillment are critical in this new landscape. Companies like Bonobos.com and WarbyParker .com that sell their own brands focus on provision of information and enhance their offerings by opening real-world locations, whereas sellers of commodities like Amazon focus on fulfillment and enhance their offerings through improved terms and delivery speed.[19]

EPILOGUE

Making GRAVITY Work For You

The epilogue shows the framework in action. To help the key ideas stick, I tell the epilogue using the inspiring story of the Warby Parker eyewear company.

You may be developing a business based on particular content or products, or you may simply be interested in furthering and enhancing your own personal brand online. Whatever you're doing, you'll be able to do it better if you understand the implications of the GRAVITY framework for charting the best way to proceed.

---

19 In a recent *60 Minutes* television interview, Jeff Bezos indicated that Amazon might use drones or "octocopters" for delivery. See Lily Hay Newman, "Amazon PrimeAir Could Deliver Your Stuff on Drones," *GizModo*, December 1, 2013.