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infinite POSSIBILITY

CREATING CUSTOMER VALUE ON THE DIGITAL FRONTIER

An Excerpt From

Infinite Possibility:
Creating Customer Value on the Digital Frontier

by B.Joseph Pine II, Kim C. Korn
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contents

Introduction

INNOVATION ON THE DIGITAL FRONTIER

A number of years ago I (Joe) gave a boardroom talk in Milan, Italy, to a number of executives from different companies. One was the vice president of a global coffee manufacturer, who said something that amazed me: "There's been no innovation in the coffee industry in fifteen years." I responded: "Have you never heard of *Starbucks*?" This gentleman could only conceive of innovation in physical *goods,* not in *experiences*—a particularly ironic stance given we were in one of the foremost coffee meccas of the world, the very city that inspired Howard Schultz to create the Starbucks coffee-drinking experience.

That is what we desperately need in business today: experience innovation. Why? Because we are now in an Experience Economy, where experiences—memorable events that engage people in inherently personal ways—have become the predominant economic offering. It eclipsed the Service Economy that flowered in the latter half of the twentieth century, which in turn superseded the Industrial Economy, which itself supplanted the Agrarian Economy.[1]

Experiences are not new, just newly identified as distinct economic offerings. They have always been around—think of traveling troubadours, Greek plays, Roman sporting events, *commedia dell'arte* performances—but now encompass so much of the economy that every company faces a stark choice: innovate goods and services ever faster as their productive lives get ever shorter, or focus on offering innovation further up the "Progression of Economic Value" (Figure I.1), on experiences that engage customers, or even transformations, built atop life-changing experiences, that guide customers in achieving their aspirations.[2] These higher-order offerings create greater value for customers, generally have longer

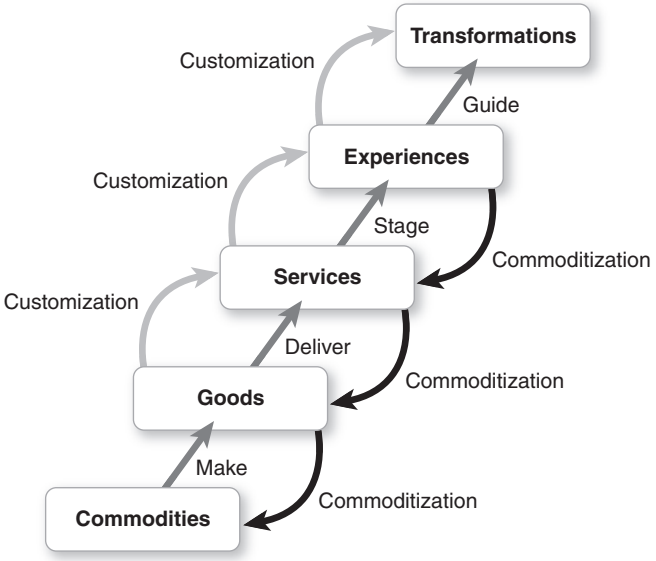

Figure I.1 The Progression of Economic Value. From B. Joseph Pine II and James H. Gilmore, *The Experience Economy*, Updated Edition (Boston: Harvard Business Review Press, 2011), 245.

life spans as they prove more difficult for competitors to imitate, enable premium prices, and let companies capture more economic value.

Innovation is the great decommoditizer, for by definition if it is truly new, it is truly differentiated, as no one else has the same capability; competitors cannot create that same value at any price. And today, taking either innovation path to stay ahead of the commoditization steamroller seeking to squeeze margins and flatten profits, a company must attune itself to the greatest source of offering innovation ever devised: digital technology.

The Digital Frontier

As coffee manufacturers the world over missed the shift to the Experience Economy, so too have many companies missed how digital technology has been remaking the competitive landscape. Consider Motorola, once the king of cellular phones. Its stay atop the pinnacle of the industry, however, resulted from *analog* phones; once the shift to digital washed over the industry in full force, it was Nokia that took over the crown. Nokia innovated far better in function and styling, providing more of

what customers wanted from the new capabilities digital technology brought to mobile phones and services. Motorola fought back and produced occasional successes, such as the RAZR, but could not consistently outperform Nokia and spun off the business into Motorola Mobility as it became one of many also-rans in the industry.

But so, really, did Nokia. For what both companies missed was the intersection of digital technology and experience innovation pioneered by Apple. When Apple entered the smartphone industry and took it over—in worldwide global mindshare if not in market share—it thought long and hard about the *phone-using experience* and created a device not just highly functional but a joy to use. It thought long and hard about how the experience we have *with* our phone could be a great part of its value, and then about how the experiences we have *on* our phone, via apps, could overwhelm every other consideration. It thought long and hard about how to turn the *purchasing* of the phone (and of course all its other technological offerings) into an experience itself and innovated the one-of-a-kind Apple Stores, which today generate over half the company's revenues. It even thought long and hard about the *box-opening* and *guide-reading experiences,* for goodness sake, and innovated ones for the iPhone and its App Store, respectively, about which people wax poetic![3] Apple still primarily *sells* digital-based goods (with many services, such as the iTunes store, and a few membership-based experiences, such as One to One), but it *markets* digitally infused experiences, and thereby reaps the rewards.

Thinking long and hard about using digital technology to create unique customer value—that is the theme of this book. The digital frontier, lying at this intersection of digital technology and offering innovation, beckons companies seeking to create new customer value by mining its rich veins of possibility. For digital innovations enrich our lives by augmenting and thereby enhancing our reality; by engaging us through alternate views of reality that make us active participants in the world around us; by letting us play with time in ways not otherwise possible; by engrossing us in virtual worlds that enchant and capture our time; by allowing us to interact with those worlds through material devices and even gestures; by letting us physically realize whatever we imagine; and by enabling virtual representations that mirror our reality to enlighten us from a new vantage point. Digital innovations can even give us a greater appreciation and desire for Reality itself, whenever we take the time to unplug and just be. But by far the greatest value will come from those innovations that create *third spaces* that fuse the real and the virtual.

Why Digital Technology Changes the Game

As far back as 1984, pioneering computer scientist Alan Kay recognized the unique power of digital technology "The computer is a medium that can dynamically simulate the details of any other medium, including media that cannot exist physically. It is not a tool, although it can act like many tools. The computer is the first metamedium, and as such it has degrees of freedom for representation and expression never before encountered and as yet barely investigated."[4] Around that same time, one of those investigating the power of this new medium, Jaron Lanier, coined the term "virtual reality" as he envisioned the creation of a "virtual world with infinite abundance."[5] And less than a decade later, Brenda Laurel, in her wonderful exploration *Computers as Theatre,* told us that "computers are representation machines" and that designing the "human-computer experience" is "about creating imaginary worlds that have a special relationship to reality—worlds in which we can extend, amplify, and enrich our own capacities to think, feel, and act."[6] Now, what these visionaries foresaw two and three decades ago has become impossible for us to ignore because it underlies so very much of the value companies create today, so much of the value customers seek.

Digital technology differs from all other kinds of man-made technology due to the distinctive characteristics of the bits at its digital core. Although most readers will be familiar with these characteristics (and others that could be cited), it still is worth recognizing the following:

∞ *Bits are immaterial.* They weigh nothing, cost little or nothing to store or replicate, and do not "age" with time. They require no ongoing maintenance, are always as good as they were the first day they were produced, and do not wear out with use. For example, music recordings replicated on vinyl albums may get dirty, scratched, and wear a little each time a needle slides down the groove bouncing off the molded pattern of matter holding the analog information about the music. Even the CD, an intermediate technology somewhere between the analog vinyl record and the digital music file on a computer or iPod, is subject to damage, misplacement, and general deterioration over time. But much to the chagrin of the music industry, music in a lossless digital format can be replicated without limit and stored indefinitely while every copy remains as good as the original recording.

∞ *Bits are easily integrated, again at little or no cost.* Any digital device can talk to any other digital device—at the speed of light—in a wave of ongoing digital convergence. Your PC or Web-enabled mobile phone can now be used to control your home's lighting, pools, heating, air conditioning, and DVR (digital video recorder) from wherever you are in the world. And if you want to go out to eat while on the road, there's an app for that, as your iPhone can take your verbal request to locate a restaurant, give you the latest reviews, show it on a map, email the result, and get you a reservation. Apps even allow you to ask open-ended questions about what is available to do in your area today, tonight, or this weekend. Such capabilities come about from the mashup of a wide variety of once distinctly separate analog technologies, including telephone directories, road maps, newspaper and magazine reviews, and so forth, to provide a seamless, simpler, and more complete experience.

∞ *Bits are cheap when it comes to imagining, experimentation, and prototyping.* With purely digital offerings you can play around with them to your heart's content and market's readiness without every incurring the cost of physical production. Even with physical goods (including the goods required to support real-world services, experiences, and transformations) you can design/prototype/test, design/prototype/test, design/prototype/test until the forecasts come home before spending one dime on expensive machine tooling and full-scale physical production.

∞ *Bits enable the development of offerings otherwise flat-out impossible.* Long before virtual reality was a glint in Jaron Lanier's eye, in 1972 the first digital fly-by-wire (DFBW) system replaced conventional mechanical flight controls with electronic flight controls coupled to a computer. This new technology domain opened the door for a modern generation of inherently unstable military aircraft, unflyable by conventional controls but incredibly maneuverable when guided by DFBW controls.[7] Think bicycle versus tricycle: a bike is more unstable than a trike, but it is greatly more maneuverable.[8]

∞ *Bits are easily modified, combined, improved, and customized.* Who among us has not come to expect a never-ending stream of updates of, upgrades to, and personalizing of the software tools we

use, often at no or minimal incremental cost? Google has taken great advantage of this characteristic. Google e-mail has been a constant stream of delightful surprises that make it more feature-rich as time goes on without users ever having to lift a finger to perform an upgrade. The same holds true for the Google Chrome browser and thousands of other offerings from hundreds of other companies. Goodbye out-of-date software—and so long to being treated exactly the same as everyone else, as technology increasingly customizes itself to our every desire.

∞ *Bits are abundant.* Once you produce something digitally, you in effect have an infinite supply. There is no physical limit to how many copies you make or who can have or experience the digital offering as is the case with material offerings made of atoms and all of the associate production and logistics issues. You can share bits-based offerings, again at little or no cost, not just to anyone but to *everyone* in the world, not just theoretically but practically.[9]

Together, these characteristics make digital technology the *technology of experiences.* As former Intel chairman Andrew Grove foresaw back in a mid-1990s speech at the Comdex computer show, "We need to look at our business as more than simply the building and selling of personal computers [that is, as goods]. Our business is the delivery of information [that is, services] and lifelike interactive experiences."[10] That vision has certainly become the case in the past fifteen years, for digital technology today enables wholly new-to-the-world possibilities for the staging of such experiences by an ever-broadening array of methods. As just one example, I (Kim) conduct extensive online research, engage in raging Twitter discussions, Facebook, LinkedIn, iPhone, and iPad (all verbs) to my heart's content, attend WebEx meetings, participate in Ning communities, and even conduct virtual consulting engagements with a combination of Skype and GoToMeeting.

Or consider MyFord Touch. Its touch screen enables you to control your entire environment, including customizing your dashboard, while voice recognition enables on-the-fly control, not only of the car, but of your mobile phone and digital music player as well. You can browse your phonebook and make calls with the sound of your voice, get turn-by-turn directions, contact 911 emergency in the event of an accident, access a vehicle health report letting you know if your car needs servic-

ing (with the option to schedule that service immediately), do business searches or get traffic, sports, and weather reports—all at your fingertips, or, should we say, the tip of your tongue. As the great integrator, digital technology boosts the prospects of new discovery and invention, and hence the possibilities for new value creation, onto an even steeper upward trajectory.

All domains of technology, including computing, communication, entertainment, manufacturing, transportation, and genetic engineering, converge as their foundations each become digitized. Innovations increasingly make even matter itself programmable, and for those goods that resist digitization, companies digitize information *about* them so they can—often in collaboration with customers—virtually design and then after production track, monitor, and mirror them online.

Plain and simple, zeros and ones talk to zeros and ones. This provides a common language for the exchange of information and thus the integration between any forms of technology expressible in digital form. The ongoing digitization of broad swaths of technology, with no limit in sight, greatly extends the information revolution that began with the computer. The upshot: digital technology turbocharges innovation, becoming a super-catalyst for creating new value, for its ability to meet the needs of humanity is undisputed, unparalleled, unbounded—and *still* largely unexplored.

Thinking Long and Hard

In order to create that value, you must go on your own journey of exploration to the digital frontier, where infinite possibility awaits. This book presents a new way of thinking about the opportunities for creating new, wondrous, immersive, and fully engaging experiences that effectively fuse the real and the virtual. We illustrate it with copious examples throughout, although we (Joe and Kim) confess that in these fast-moving times we fully expect many to be out-of-date by publication—some maybe even out of business, as is endemic with any arena as fast-moving as this—with many even better examples brought to market after the book was written. So while the exemplars you see here may not be the latest and greatest at the time of your reading, they do well represent this book's concepts at the time of its writing. We also offer some thought experiments, numerous guiding principles, and, at the book's core, a novel framework—a three-dimensional sense-making tool—for discovering, depicting, and designing new offerings.

We won't sugarcoat it: this model is complex. You may have difficulty grasping it at first and remembering all of its facets. You will definitely have to think long and hard about what it means and, in particular, how to apply it. I (Joe) had a statistics professor at MIT, Arnold Barnett, who whenever the mathematical going got rough would say, "Fasten your seatbelts!" Well, here you're going to have to fasten your seatbelts just a few pages into Chapter 1, "Cosmos Incogniti," and keep them tight for most of the rest of the book.

But if you do so, and stick with it, you will be amply rewarded. For you will then be oriented to the framework central to employing digital technology in order to fulfill what customers seek in today's Experience Economy. You will be guided in learning multiple methods for generating ideas for new offerings that make sense for your company in particular, as well as techniques for mapping experiences that engage and compel. You will then not only have staked out your own region on the digital frontier, but you will be ready to advance your business in capturing the value there for the taking.

And along the way, you will further appreciate the greater implications for you, your business, and ultimately for society as we explore and then exploit these new possibilities—first in our imaginations, then with our technology, and finally through our direct experience.

Infinite possibility awaits those willing, able, and prepared to make the journey.

1

Cosmos Incogniti

INTRODUCING THE MULTIVERSE

Recall the maps of old where less-than-intrepid mapmakers marked unexplored territory with the words *terra incognita*: unknown land. This boundary, usually indistinct, marked the known frontier and separated it from the unexplored—that which was beyond our knowledge. Recall also that apprehensive phrase "Here be dragons" accompanied by drawings of fearsome beasts thought perhaps to inhabit such territories, providing a clear warning (or at least an expression of doubt and fear) of what lies beyond. It is hard to imagine such a need today, so thoroughly have we explored the earth and mapped it out (save perhaps the deep, dark depths of the sea, where—who knows?—fearsome creatures may still prowl).

A frontier remains, however. The digital frontier. Comprised of zeros and of ones, it leads us—unlike the earthbound frontier of old—to places entirely of our own making. It lies at the boundary of our imagination, where beyond it stretches out entire worlds not just to be explored but to be created! Think of what lies beyond the digital frontier as (if you'll excuse a slight abuse of linguistics) "*cosmos incogniti,*" a phrase we believe captures the essence of the possibilities that exist at the intersection of technology and the fertile ground of the mind's eye: "worlds unknown."

Should a modern-day cartographer label *cosmos incogniti* with an accompanying descriptor, surely it would be "Here be opportunity!" For at the digital frontier lay not dragons of doubt but new and wondrous offerings that create customer value by fusing the real and the virtual.

But what tool would such a cartographer use to chart these new worlds and indicate in which direction people could find such opportunities? A simple map would be grossly inadequate to capture the possibilities.

A single globe could never represent the fact that digital technology not only enables new opportunities, new offerings, and new value but can do so by creating entire new three-dimensional worlds, virtual though they may be—worlds of exploration, conquest, artistry, and just plain new fun. And even then such worlds represent just a small fraction of possibility. For again the digital frontier opens not to fixed country you may discover and settle but to original offerings you must imagine and create. It differs also in the number of explorers vying for such opportunities. These explorers number not in the handfuls but in the thousands and tens of thousands—companies rapidly pushing forward the boundary of the frontier as they innovate new offerings that customers value. There are no limits to a frontier such as this, for there are no limits to our imagination. Before us lies infinite possibility—if only we had a tool to adequately chart it.

That is the aim of this book. We present a new tool geared to the task of exploring the *cosmos incogniti* of our imagination. This guiding tool, or framework, is not as easily read as a map, nor as representational as a globe. It does not provide you with a detailed description of the lay of the land, nor a precise set of coordinates from which to set off. How can it with a boundary as fluid as the imagination, with unexplored territory as vast as human creativity? But like a map in the hands of explorers of old, this framework illustrates what we know today while pointing to the unknown worlds of opportunity, in order to give form, content, and intentionality to your explorations. Its vital foundation and dynamic architecture provoke inexhaustible discovery and idea generation. And its terminology provides you with a vocabulary for understanding the opportunities and for communicating them with colleagues, collaborators, and customers.

We recognize that readers may be veteran explorers well versed in digital technology or beginners seeking new ways of creating value. Therefore, we travel in this chapter at a pace that gives all explorers a chance to adapt to the atmosphere, to grow step-by-step into an understanding of the language, the meaning of the core concepts, the robustness of its dimensions, and the implications of the framework as a whole. We will deepen our understanding in successive chapters that dive into the framework to discover its fullness, and then we will provide you with approaches for applying the framework to your own company, in your own circumstances, for your own customers, so that you can chart the meaningful, substantive ways of creating value for your own business.

We stand on a platform poised to launch into an exploration of *cosmos incogniti*. It promises to breathe into existence extraordinary offerings once imagined only as fiction but now truly at our fingertips. Possibility abounds. Territory may stretch before us without limit, but value lies within our reach. Here be opportunity!

The Known Universe

To introduce the framework that explicates the unknown worlds lying beyond the digital frontier, let us first understand the nature of *cosmos cognitus,* the universe we know and in which all reality exists—particularly as it applies to and impacts on business. To do that, let us revisit Stan Davis' classic business book *Future Perfect* (as applicable today as when he wrote it over two decades ago). Davis expressed the inspiration for his thinking this way: "A basic progression governs the evolution of management in all market economies: fundamental properties of the *universe* are transformed into *scientific* understanding, then developed into new *technologies,* which are applied to create products and services for *business,* which then ultimately define our models of *organization*."[1] He goes on to write:

> These new models first get articulated in our scientific and technological understanding of how the universe works. My intention in this book is to give new meaning to time, space, and matter in shaping tomorrow's business and organization. In the industrial economy managers considered time, space, and matter as *constraints,* whereas in the new economy they will come to think of them as *resources.* This will require profound transformations in the way we think about time, space, and matter. Just as the scientific shift from the mechanistic age of Newton to the holistic age of Einstein affected notions of what was meant by time, space, and matter, these new notions in turn will affect the managerial transformation from an industrial mindset to a fundamentally new one.[2]

That new economy, the Experience Economy, is now here. As we create new experience offerings, we can see more clearly the way in which the universal dimensions of time, space, and matter shape the opportunities businesses have today.

These three dimensions comprise the known universe and come together as a true trinity to fashion the entirety of physical reality. As represented in Figure 1.1, all experience consists of objects made of

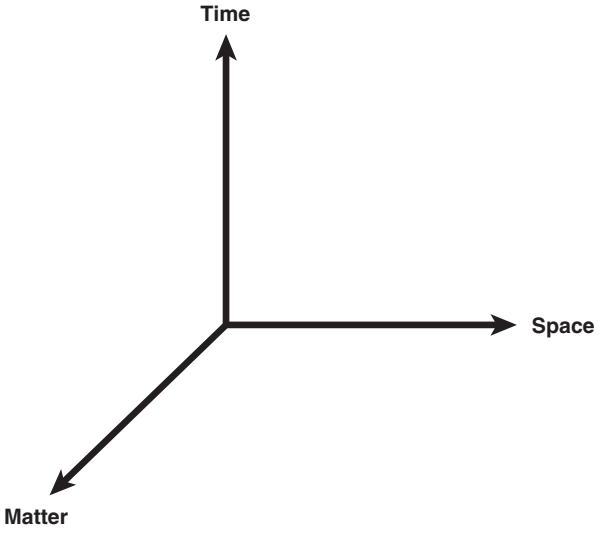

Figure 1.1 The universe

matter (physical entities, including the humans doing the experiencing and the sensory stimuli they experience) that move in time (the measure of change and therefore of experiencing) and across space (the background source and context of everything that is experienced).

One of the "profound transformations" Davis introduces in how we think about these dimensions is "**No-Matter,**" the title of a chapter in which he discusses how "in the new economy, the value added will come increasingly from intangibles . . . whose importance does not lie in their material existence."[3] Think of how much of the value of economic offerings has shifted over the past century from the tangible (goods) to the intangible (services) and on to the ephemeral (experiences). Further, think of how the design, production, marketing, and distribution of each kind of offering (commodities included) have all become more and more digitized over the past few decades, so that today there is scarcely a company of any size almost anywhere in the world that does not use computers at some stage of its processes, if not at the very heart of everything it does. If you could weigh the material component of all offerings, think how much higher the ratio of GDP to the mass required to produce it is today than in our industrial past.[4] To use the distinction made famous by Nicholas Negroponte, the founding director of the MIT Media Lab, in his book *Being Digital,* Matter and No-Matter are about *atoms* and *bits,*[5] about that which has materiality and

resides in the physical world and that which has no materiality and resides within the zeros and ones of digital technology.

If No-Matter exists, it follows there must be **No-Space,** where experiences are not *real* but *virtual*; they do not take place in the physical world but happen virtually, in a place (or world) that does not really exist. The primary activity instead happens on (or in) a screen of some sort—movie, TV, PC, tablet, PDA, smartphone, watch, headset, goggles, or glasses, as well as windshield, wall, or anything else on which an image could be projected (including the retina itself once projectors become small enough).[6] Although virtual experiences still happen inside of us, in our mind's eye, the place conjured within the mind is not the same one in which our physical body resides.

And if there is No-Matter and No-Space, then there must be **No-Time,** where the nature of the experience is no longer tied to actual time—the moment-by-moment unspooling of synchronous events in the linear, sequential order of time as it exists in the real world. Rather, it becomes autonomous, independent of actual time, whether by being nonlinear, asynchronous, nonchronological, or transient, by shifting into the past or future, by slowing down, speeding up, or otherwise playing with one's awareness of time, or by any other way in which an experience creates a distinct, disparate sense of time (or timelessness) that does not truly exist.

Each dimension, in other words, has a positive side and a negative side (not in any moral sense, of course, but in the mathematical or logical sense), each one the opposite of the other. The original axes of Time, Space, and Matter all extend through the origin (the point in the middle of Figure 1.1 where they all intersect) to open up new ways of experiencing—and therefore of creating value in your business. As seen in Figure 1.2, which we have reoriented graphically to emphasize the new possibilities inherent in our logical extensions, the three fundamental dimensions of the universe decompose into six variables—Time and No-Time, Space and No-Space, Matter and No-Matter. These together comprise a $2\times2\times2$ matrix, with each pairing two sides of the same coin (or two variables lying along the same dimension in this case). Since $2\times2\times2=8$, this matrix delineates eight distinct universes, or *realms of experiences* (within which lie many worlds, or *cosmos,* to be discovered). Because "Octoverse" seems awfully clunky (not to mention conjuring connotations of the fearsome creatures prowling the depths of the sea on the maps of old), let's borrow a term from the discipline of cosmology that inspired this framework and call it the *Multiverse.*[7]

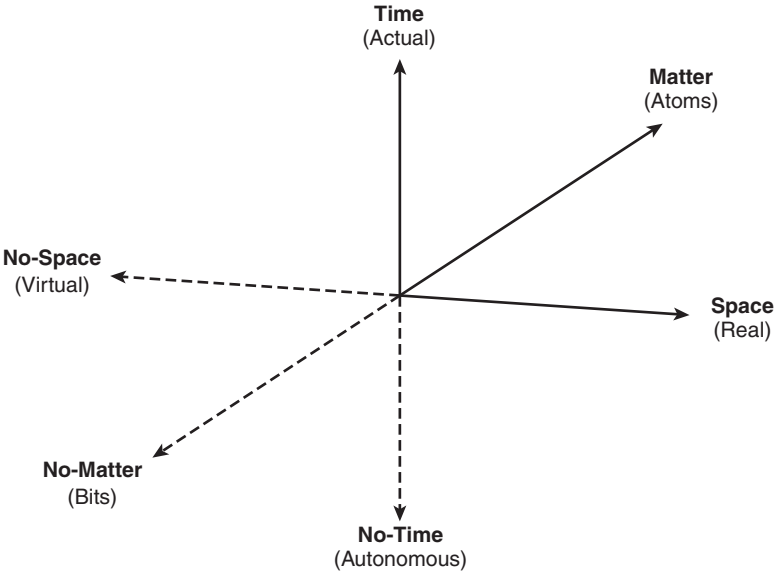

Figure 1.2 The Multiverse

The Unfamiliar Multiverse

This seems the best title for it, as this framework encompasses the multiple ways for *when* [Time↔No-Time] experiences happen, *where* [Space↔No-Space] they occur, and *what* [Matter↔No-Matter] they act on. The known universe of physical experiences [Time – Space – Matter] is just one of the octants within the Multiverse. Reality, as it seems most appropriate to call it, is of course the realm with which we are most familiar and within which most innovation still occurs. We will not ignore Reality, but we will focus on the seven other realms vitalized by the advent of digital technology. These realms are less known, not as well understood, more difficult to apply, and therefore abounding with possibility.

Infinite possibility, as a matter of fact, for the Multiverse furnishes the tool we need to explore the *cosmos incogniti* of our imagination. It helps us make sense of our explorations by showing us how to create offerings on the digital frontier that customers value.

Figure 1.3 visually depicts this framework, revealing the complete Multiverse and labeling each octant. Let us delineate the exact nature of each, realm by realm in logical sequence, to ensure every reader understands what is going on in this admittedly somewhat complex 2×2×2 framework:

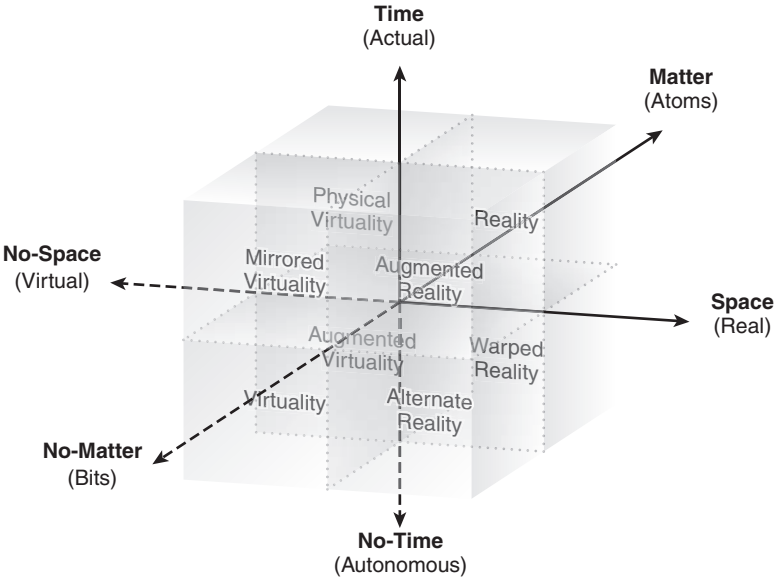

Figure 1.3 The eight Realms of the Multiverse

VARIABLES			REALM
1. Time	Space	Matter	Reality
2. Time	Space	No-Matter	Augmented Reality
3. Time	No-Space	Matter	Physical Virtuality
4. Time	No-Space	No-Matter	Mirrored Virtuality
5. No-Time	Space	Matter	Warped Reality
6. No-Time	Space	No-Matter	Alternate Reality
7. No-Time	No-Space	Matter	Augmented Virtuality
8. No-Time	No-Space	No-Matter	Virtuality

Each and every combination of the variables yields a distinct realm. Some are familiar, some intriguing, and some downright strange. But all ready to be explored.

Although we will more fully describe each experience realm in the succeeding chapters, here we wish only to give you a short preview of where we're heading. To highlight the distinctions between realms, we'll begin with the anchors of Reality and Virtuality, and then go on to introduce successive realms followed by their polar opposites. Note how in each case here we associate each realm with a particular visual icon (as shown in Figure 1.4) that we believe best captures its essence.

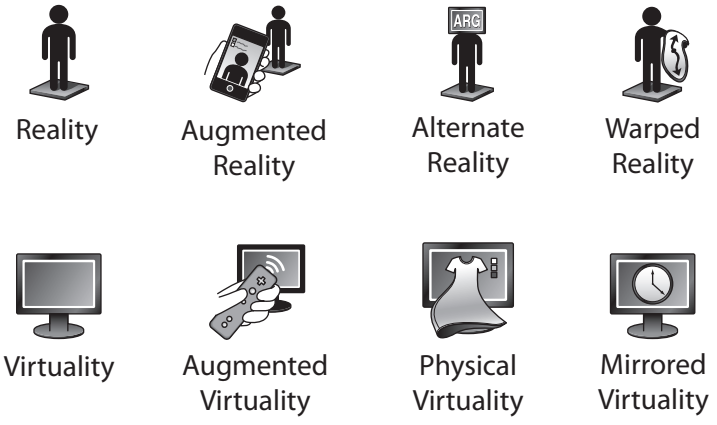

Figure 1.4 Icons representing the realms of the Multiverse

We use these icons throughout the book, albeit sparingly, to make it easy for you to remember quickly and easily what each realm is about (while recognizing, too, that every realm encompasses experiences far beyond what can be represented by these small icons).

A Quick Tour of the Multiverse

Reality, of course, consists of the variables [Time – Space – Matter] or, as an equivalent way of looking at it, [actual, real, atoms]. Reality requires the least explanation of all the realms, for we experience it through the age-old medium of real life, where the sheer physicality of the experience reigns supreme. Think of such quintessential experiences as taking a walk in the woods, dining with family or friends, watching a sunset from a balcony, going to a raucous rock concert, skiing down a mountain, or playing a round of golf. And then think in each case of how the experience is situated in a particular point in time, set apart from what comes before and what happens after; how the specific place (in space) impacts the experience and affects its very nature; and what physical objects support and enhance the experience. Even as you explore the other seven realms for the new opportunities they provide, never forget the richness of Reality.

Virtuality lies exactly opposite Reality in the realm of [No-Time – No-Space – No-Matter], consisting of [autonomous – virtual – bits]. Quintessential Virtuality experiences—also now very familiar to nearly all of us—include playing computer games, exploring virtual worlds, prob-

ing real-world simulations, connecting via social media, or even just surfing the World Wide Web. They are not bound to a particular time or place, with the physical aspect of all activity receding away to a vanishing point. Yes, of course, anyone having a Virtuality experience resides in some physical place, at a particular point in time, using a material keyboard and mouse (or other interaction devices), but these are all irrelevant—*im*material to the experience unfolding within the mind in reaction to the digital information displayed in front of the eyes (as well as sound waves hitting the ears).[8] So although all Virtuality experiences really sit atop Reality, for the purposes of exploring the digital frontier we will generally ignore this aspect of it to concentrate on using No-Time, No-Space, and No-Matter as resources for creating customer value.

These two realms, then, anchor the Multiverse. Reality is grounded firmly in our physical universe of [Time – Space – Matter], with Virtuality residing ethereally in the immaterial realm of [No-Time – No-Space – No-Matter]. Each could be labeled any number of ways. Reality could be called the Known Universe, the Real World, the Physical World, or a number of other commonplace names, whereas Virtuality could similarly be called the Virtual World (or Worlds), Virtual Reality, the Metaverse, and so forth. We decided the parallelism of the chosen words works best, for then the name of each of the other octants can relate directly to the two anchors. The names of each realm on the right half of the framework—the four revolving around the real Space axis and thereby rooted in physical Reality—therefore all denote their Reality-based nature, whereas the names of each realm on the left half of the framework—the four revolving around the virtual No-Space axis, embedded in immaterial Virtuality—denote their Virtuality-based nature.

So beyond these two anchors lay the six other realms, each one enhancing, extending, or amending either our Reality- or Virtuality-based experiences. These six are less well known, less thought about and explored—and therefore perhaps hold out greater possibility for value creation.

Of these, surely the most familiar is **Augmented Reality** [Time – Space – No-Matter], a term of increasing currency, where companies employ digital technology (the bits of No-Matter) to enhance our experience of the physical world. The profuse number of applications in this realm where [actual, real, bits] hold sway shows up in everything from day-to-day living, travel, and recreation to medical procedures, manufacturing, and the military. The most obvious example, however, is surely a GPS navigation system (such as those made by TomTom or

Garmin), which overlays the physical scene outside your windshield with a digital representation of it on your car dashboard. It enhances—or augments—your experience of the real world by making sense of it, providing directions to help you find your way, and even relieving the stress of a trip in unfamiliar environs.

If bits can augment Reality, then logically atoms should be able to augment Virtuality. This is exactly what happens in the opposite realm of **Augmented Virtuality** [No-Time – No-Space – Matter], which effectively flips a Virtuality experience from No-Matter to Matter, from bits to atoms. That means we're taking something material and tactile and using it to augment an otherwise virtual offering, resulting in an [autonomous, virtual, atoms] experience. Although high-tech examples exist, such as the haptic technology of sensor gloves that can manipulate virtual objects on screen, the clearest example here is the simplest: Nintendo's Wii, whose remote device detects movement in all directions to affect the digital play of on-screen games from tennis and golf to yoga and general fitness exercise. For the first time, players at home can get physically, materially engaged in computer games, removing the experience from one residing primarily between the fingers and the brain to one involving the whole body.

Alternate Reality [No-Time – Space – No-Matter] derives its name from alternate reality games, or ARGs. Such games have become increasingly prominent in the past decade in marketing circles as platforms for reaching the online gaming crowd, with examples including the *I Love Bees* promotion for Microsoft's *Halo 2* game, *The Dark Knight,* a marketing experience designed to generate demand for the Batman movie of the same name, and *The Lost Ring,* designed to promote the 2008 Beijing Olympics. Jane McGonigal, the "puppet master" for *I Love Bees,* defines an Alternate Reality Game as an "interactive drama played out online and in real-world spaces taking place over several weeks or months, in which dozens, hundreds, or thousands form collaborative social networks, and work together to solve a mystery or problem that would be impossible to solve alone."[9] In this realm of the Multiverse, [autonomous – real – bits] experiences take games (and increasingly other activities) of the sort that normally play out online and take them from No-Space to Space, making the physical world a technologically infused playground of hyperlinked activity. With implications far beyond marketing, this octant starts with Reality and superimposes an *alternate* view on top of it.

Where Alternate Reality takes an otherwise virtual experience and plays it out in the real world, its opposite, **Physical Virtuality,** takes

real-world objects (atoms residing in actual time) and designs them virtually. Such a [Time – No-Space – Matter] experience occurs when virtually designed artifacts—created, viewed, usually customized, and generally sold online—take material shape. The most familiar include the mass customized T-shirts, coffee mugs, mousepads, and business cards available on sites like Zazzle and CafePress. The technology of 3D printing perhaps best captures the [actual – virtual – atoms] nature of Physical Virtuality. Here something designed virtually is printed, physical layer by physical layer in precise time sequence, to build up a material object from the experience. Originally used in industrial applications for prototyping or remote part creation, such companies as Shapeways and Ponoko have brought this to the masses, taking your own virtual design (or that of someone else offering designs for sale, which you can often further customize), printing it out physically, and shipping it to you.

The last realm on the real side of the Space dimension, **Warped Reality** [No-Time – Space – Matter], is named as much for how people use the term "warped" in conversation to describe something bent, twisted, or just plain weird as for Einstein's General Theory of Relativity (with gravity's warping of Space-Time) or for *Star Trek*'s warp drive. For Warped Reality differs from Reality only by flipping Time to No-Time. This realm of [autonomous, real, atoms] is not infused with the digital technology of No-Matter, nor does it reside in the virtual arena of No-Space. It just requires the offering to play with or manipulate time in some way that makes it clearly distinct and different from normal, workaday experience. Such reality-based time travel happens whenever experiences simulate another time and (physical) place, such as Renaissance Fairs and living history museums (Plimoth Plantation, Colonial Williamsburg, and the like) or transport us (in both senses of the word) into the past or even into the future (albeit a fictional future) such as at, yes, *Star Trek* conventions.

Though not exactly burning up the digital frontier, truly understanding Warped Reality will help you figure out how to embrace No-Time in the context of No-Space and/or No-Matter. Recall also those quintessential experiences of Reality: taking a walk in the woods, dining with family or friends, watching a sunset from a balcony, and so forth. Many such experiences alter our sense of time, slowing it down or speeding it up, heightening our awareness of the experience unfolding before us, which whenever it happens shifts the experience, even if subtly, from Reality to Warped Reality.[10] Think of it as Reality with a twist of time.

We arrive finally at **Mirrored Virtuality** [Time – No-Space – No-Matter], the exact opposite to Warped Reality: here Virtuality is tied to

real time. This realm derives its name from the term "Mirror Worlds," coined by Yale computer scientist David Gelernter in 1992 to describe "software models of some chunk of reality, some piece of the real world going on outside your window."[11] Gerlenter's vision of what digital technology could bring about is now, if you pardon the expression, a reality, as more and more virtual experiences tether themselves to what is going in the real world, in real time. The best examples of such [actual, virtual, bits] models today can be found in myriad Google Maps mashups, such as HealthMap, a real-time view of infectious diseases around the globe, or the company's own Google Flu Trends, which beats the Center for Disease Control to the punch by analyzing searches for flu symptoms. The use of any sort of online tracking tool or any dashboard, whether in a car or plane or computer screen, qualifies as Mirrored Virtuality. For this realm offers a real-time view, a mirrored perspective, of what is going on out there, in the world.

Each one of these realms, in and of themselves, offers tremendous promise for creating customer value. In the succeeding chapters you will encounter them again, in more depth, to better understand the possibilities, learn about many more companies already operating within each realm, and then discern the principles that you can apply to your offerings, in your own situation. You will discover how embracing the realms of the Multiverse enables experiences impossible within the confines of Reality alone.

An Architecture of Experience

All the elements of the Multiverse—its three dimensions, six variables, and eight realms—fashion an architecture delineating all experiences. Its structure helps us perceive the distinct composition of the *when, where,* and *what* of an experience. This architectural perspective calls attention to the makeup and relationship of the experiential variables we discovered by extending Time, Space, and Matter to encompass their opposite. It also deepens our understanding of experience design by focusing on the qualitative nature of how these come together to form the three full dimensions of the Multiverse, as seen in Figure 1.5. Time and No-Time, being measures of change, mutually comprise a single dimension that defines what happens in an experience, or its *event.* Space and No-Space likewise jointly define the dimension of *place,* whether a real or virtual one. And Matter and No-Matter come together to define the *substance* of what makes up the experience.

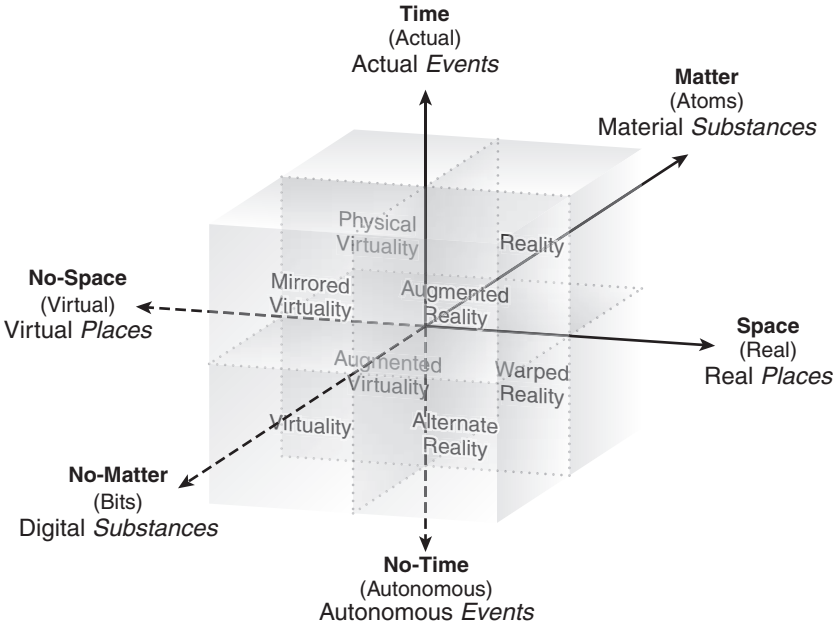

Figure 1.5 Eight Realms, six variables, three dimensions, one Multiverse

Think of the architecture of our tool of exploration as 8-6-3-1: eight realms flow from six variables that comprise three dimensions making up the one Multiverse. Although we will spend the most time developing the view from the perspective of the eight octants, we will examine the other views as well for additional ideas for new offerings, beginning here with a quick tour of what the three dimensions entail.

The Substance dimension speaks to the body of an experience, to all that a person encounters and how it is created. Designers develop experiences from *material substances* and *digital substances,* choosing from the variables of Matter and No-Matter. The choices made here thus *construct* the Substance dimension of the experience out of atoms or bits.

The Place dimension addresses the experience's venue, the setting of its activity made up of the arrangements of its substances. Designers develop experiences with *real places* and *virtual places,* choosing between the variables of Space and No-Space. The choices made here thus *form* the Place dimension out of real space and virtual space.

The Event dimension speaks to the activity of an experience, the order of what people do and encounter as they move from its beginning to its end. Designers develop experiences from *actual events* and *autonomous*

events, choosing from the variables of Time and No-Time. The choices made here thus *enact* the Event dimension of the experience out of actual and autonomous time.

Notice that you need not limit your experience to one side or the other of the Substance dimension: you can construct an experience to incorporate both Matter and No-Matter, to be *both* material *and* digital concomitantly. Likewise, you can form an experience to encapsulate both Space and No-Space, to be *both* real *and* virtual in parallel. And you can even enact an experience to involve both Time and No-Time, to be *both* actual *and* autonomous simultaneously.[12]

Surely some of the greatest opportunities for creating customer value beyond the digital frontier will be discovered by operating on all the variables concurrently, effectively *fusing* realms into cohesive and compelling, rich and robust, individual and authentic *transversal* experiences never before envisioned, engendered, or encountered. For whereas the realms are introduced here as quite distinct entities with rather definite boundaries, our experiences rarely fit neatly into one of these eight boxes (as we shall see more clearly in Part IV, "Guiding"). These realms, with their distinguishing characteristics and clear labels, exist to help frame your thinking, not bind you to a rigid, constraining architecture. On the contrary, the boundaries within the Multiverse are permeable and its classifications elastic. We do not present this framework in order to have you argue over what box this or that experience belongs in, but to use it as a sense-making guide for exploring the digital frontier spreading out before you.

Therein lies the power of viewing the singular Multiverse as three dimensions with six variables that you can play with and vary independently. Viewing it solely through the lens of the eight realms tends to restrict the possibilities you explore, for naming an octant confers a linguistic bias on that particular combination of when the experience happens, where it occurs, and what it acts on. If, for example, you believe Augmented Reality not only lies within [Time – Space – No-Matter] but that these three variables *signify* what we mean by the term Augmented Reality, then you will never explore other ways of incorporating bits within an actual, real experience.

So, yes, fully understand the nature of Augmented Reality and each of the other realms as we examine them together in the successive chapters. But look at each example for the *enacting* of its event, the *forming* of its place, and the *constructing* of its substance. This qualitative perspective helps not only in decoding existing experiences but more importantly

in depicting and staging new ones. Experience stagers must consciously pay attention to the verbs—to the *enacting, forming,* and *constructing*—to best create the nouns—the most engaging experiential events, places, and substances. Keep the full 8-6-3-1 experience architecture in mind—eight realms, six variables, and three dimensions within one Multiverse—as you read through the rich collection of examples throughout the rest of the book and ponder the infinite possibility available to experience stagers.

For as digital technology pushes the frontier of experience outward, opening up new galaxies begging for ambitious exploration, the Multiverse is the instrument by which you set the direction and chart the course. Its ongoing mission: to help you explore strange new dimensions, seek out new technologies and new experiences, and boldly go where no company has gone before. Therefore think of the Multiverse, with its distinct ways of harboring meaning to help frame your thinking, as more a flexible tool for taking you into the far reaches of your imagination than as a blunt instrument restricting where you can go and what you can dream.

And dream big. Recognize that the three dimensions of the Multiverse do not stop where we have drawn the boundaries of each box on the pages of this book. Those little arrows on both ends of the three dimensions mean the lines representing each variable extend out, further and further, reaching to infinity. With them go the eight realms, expanding ever outward, encompassing ever more possibility, creating deeper and more intense experiences through the innovations resulting from our imaginings.

And of that there is no end.

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