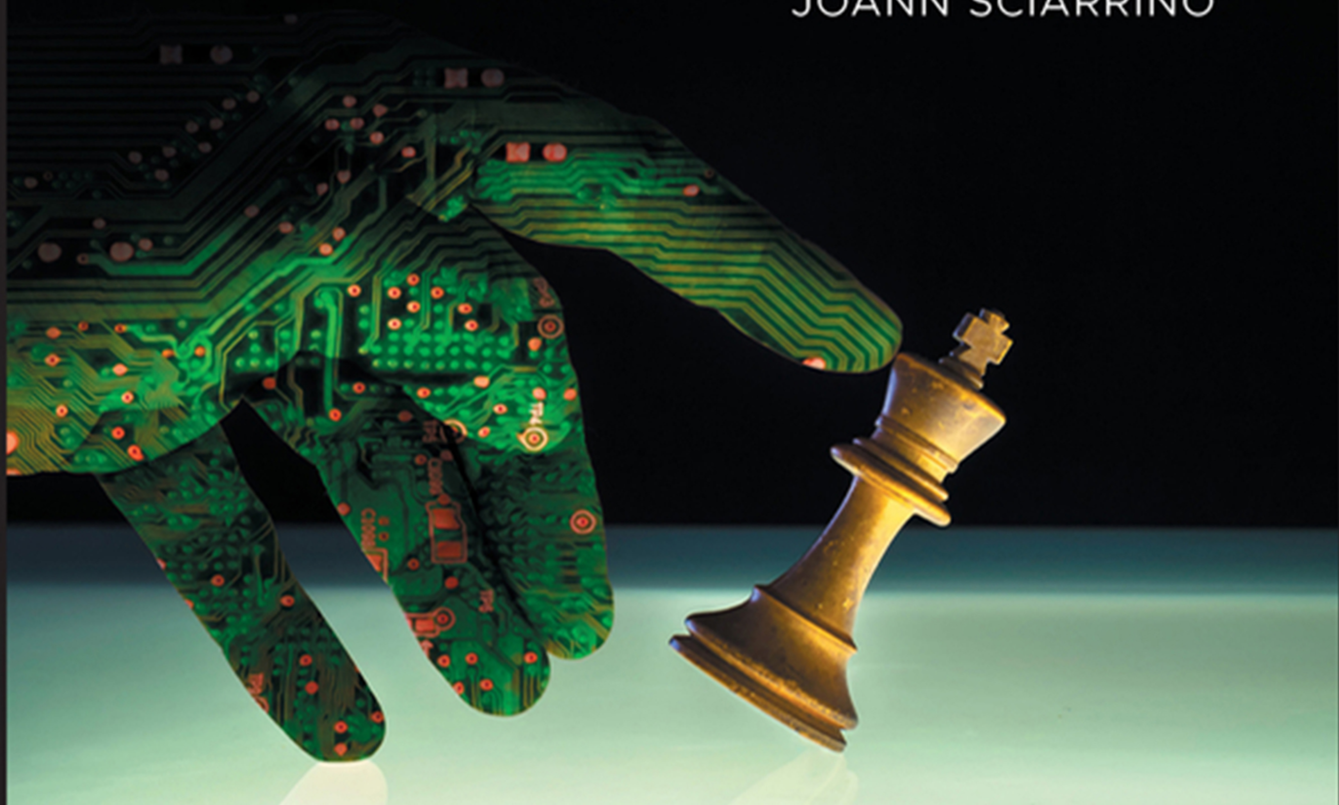
THE STRATEGIC DIGITAL MEDIA ENTREPRENEUR

PENELOPE MUSE ABERNATHY
JOANN SCIARRINO



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Preface

Sometimes innovation comes in an almost blinding flash of creative insight. More often those ideas result from a disciplined, strategic process of exploration and testing. Regardless of how innovation is born, the hard part is transforming that insight into a profitable business proposition. The most innovative and creative minds often fail as entrepreneurs.

The media industry is experiencing what the economist Joseph Schumpeter famously termed "creative destruction." A new technology has rendered business models obsolete that until recently sustained century-old media enterprises—from books and newspapers to television. Customers and investors are moving away from an aging industry, shifting their focus and resources to the new entrants. From the experience of other industries that have weathered "the gales of creative destruction," we know that those who thrive in this new environment will need to adapt quickly.

New business models are beginning to emerge as leaders in both the academy and the industry explore ways to tap into the potential unleashed by this interactive, always-on technology that connects media enterprises with their readers, viewers, and online visitors in revolutionary ways. Colleges and universities have established innovation and entrepreneurial centers that give students hands-on experience with "ideation" and prototyping, and that, maybe—just maybe—will inspire one or more of them to come up with the next Facebook. Leaders of established, century-old media empires commission innovation reports and encourage their employees to "think out of the box" about new ways to connect with current and potential customers. All of this occurs as the pace of change in the industry has increased significantly in recent years and shows no sign of slowing down. Indeed, many prognosticators predict it will increase.

As former executives of media companies, and now as college professors, we have our feet firmly planted in both worlds. Whether we are teaching tomorrow's media leaders or conducting workshops for today's leaders in the industry, we have noticed there are three significant hurdles that both students and professionals face. First, many of them lack the financial and strategic background to assess whether their great idea will be a profitable and sustainable business enterprise. Second, they need a new way of thinking about strategy and business models, a new framework for the digital space. Third, they cannot do it alone; they need to nurture entrepreneurial leadership at all levels and in all functions in their organizations. Therefore, we have designed a book that attempts to address those three missing links.

Acknowledgements

Inspiration for *The Strategic Digital Media Entrepreneur* comes from the many media innovators and entrepreneurs we've met in the profession and the classroom. During a time of immense uncertainty in the industry, they have focused their sights and energies on developing strategies that will allow their enterprises to thrive in the digital age.

A book is always a collaborative effort with many participants, who have generously shared insights and provided feedback that helped us refine concepts and ideas, and then communicate them in multiple venues—in print, in person and through online outlets.

We are indebted to our colleagues in the School of Media and Journalism at the University of North Carolina at Chapel Hill, especially Dean Susan King and UNC Provost James Dean, who have been strong advocates for our research and for the Center for Innovation and Sustainability in Local Media. The Center is funded by generous grants from the Knight Foundation and the University. The mission of the Center is to support both start-up and existing news organizations by researching and developing sustainable business models, as well as innovative digital tools, and then disseminating that information widely. We have received invaluable support from both faculty and staff associated with the Center. We thank senior researcher Erinn Whitaker for her extensive and committed editing and research effort, Lorraine Ahearn for her editing advice, as well as John Prudente and Jill Fontaine for their research assistance. Craig Anderson, Madeline Brown and Pamela Evans provided timely administrative support.

Finally, our thanks to the editors at Wiley Blackwell. We are grateful to acquisitions editor Elizabeth Swayze, who saw the need for a book on this topic and approached us in 2015, and to Executive Editor Haze Humbert and Project Editor Janani Govindankutty and her team, who have seen the idea through to completion.

How to Use This Book

The book is divided into three Parts, each tackling a separate piece of the puzzle. The first section, "Understanding the Basics of Digital Entrepreneurship," authored by Penelope Muse Abernathy, consists of four chapters, and explores how the Internet has changed the business models for media enterprises. It is both a financial and strategic primer. It traces more than 550 years of innovation, identifies the prevailing business models of the past and present, and introduces the idea that successful entrepreneurs (as opposed to innovators and inventors) focus on getting the business model right. It has lessons on how to understand the difference between net income and cash flow, as well as examples of how to place a dollar value and rate of return on a media enterprise. It concludes by analyzing the various ways the Internet has attacked the traditional business models of media companies, and by identifying the strategic challenges and opportunities confronting all media entrepreneurs today.

Part II, "Creating Sustainable Strategies and Business Models," co-authored by JoAnn Sciarrino and Abernathy, develops a new customer-focused strategy roadmap for creating profitable and sustainable digital media business models. In the pre-digital age, successful media enterprises tended to control each of the processes involved in creating, packaging, producing, distributing, and selling their content to consumers. This led to inward-looking business strategies that focused on operational excellence and efficiency. The interconnectivity and immediacy of the Internet not only disrupted the economics of media enterprises, but also relationships with their customers—both their audiences and their advertisers. Strategies for companies in the digital space place the customer as the ultimate driver of profitability. Therefore, this section begins by posing five customer-focused strategic questions, and then establishing a step-by-step process for answering each question. This process provides the tools to define a company's unique value proposition, reach current and potential customers and strengthen relationships with them, utilize partnerships, and prioritize investments in key assets.

The concluding Part, "Leadership in a Time of Change," authored by Abernathy, focuses on the leadership challenges and opportunities facing media entrepreneurs today and in the near future. It concludes by asking readers to consider the possibilities that are yet to be realized around artificial intelligence, augmented reality, and blockchain, to name but a few. Each chapter has timely case studies focusing on media enterprises that are attempting to transform their digital media business models.

Our complementary website for this book, www.cislm.org/digitalentrepreneurs, has an extensive amount of supplemental material, such as instructional videos, essays by media leaders about significant issues they are confronting, and updates on topics covered in the book. In addition, at www.cislm.org/digitalstrategy, we have provided materials

(PowerPoints, study guides) for instructors using this book in either the academy or the profession.

As you may have concluded by now, this is not a classic economics textbook. Nor does it cover the sociological or policy implications of the disruption occurring in the media space. Those subjects require separate texts, and there are several excellent ones already. Rather, this book is about the business of media, so it relies on the language of business, often referring to readers and viewers as "customers," or "consumers of products and services." With apologies to journalists everywhere, we do not intend to diminish in any way the value of your vitally important work, communicating the news and information that feeds democracy at all levels of society. We are simply using business shorthand when we describe your journalism as "content" (undifferentiated from other types of content), or as a "product or service." However, since one of us is a journalist, we would also make the point that if you care about the future of journalism, you should learn everything you can about the business of media.

We hope that the book will be used in its entirety in both the academy and the profession, since we believe, for example, marketing students and journalism practitioners benefit from learning about the finances of media enterprises, just as those specializing in accounting and finance need to understand how putting the customer first contributes to bottom line performance. However, given the scope of this book, we also realize that there may not be enough time in a semester to cover all of the material we included. Therefore, we have envisioned each section as potentially a stand-alone entity that can be incorporated into the curriculum of existing marketing, strategy or journalism courses, as well as entrepreneurial centers.

This book reflects the insights gained from our strategy work with numerous media organizations, as well as what we have learned from our own professional experiences, research and teaching. We hope that what we offer in the following pages will be relevant for both the classroom and the profession, for college professors, as well as for those in the industry hoping to get funding for a new venture or transform their current media operations. We hope it both informs and inspires current and aspiring media entrepreneurs.

About the Companion Websites

This book is accompanied by two companion websites.

www.wiley.com/go/abernathy/StrategicDigitalMediaEntrepreneur

www.cislm.org/digitalstrategy

The Instructor Website (at www.wiley.com) contains:

- PowerPoints
- Lesson Plans
- Study Questions
- Syllabi

The Student and Professional Website (at www.cislm.org) contains:

- Videos and podcasts
- Essay and blogs by digital entrepreneurs
- Updates to the case studies and other relevant material

Part I

Understanding the Basics of Digital Entrepreneurship

> *In fact, no one can tell whether a given innovation will end up a big business or a modest achievement. But even if the results are modest, the successful innovation aims from the beginning to become the standard setter, to determine the direction of a new technology or new industry, to create the business that is—and remains—ahead of the pack. If an innovation does not aim at leadership from the beginning, it is unlikely to be innovative enough.*
>
> (Peter Drucker, "The Discipline of Innovation," *Harvard Business Review*, August 2002)

The Strategic Digital Media Entrepreneur, First Edition. Penelope Muse Abernathy and JoAnn Sciarrino.

Companion website: www.wiley.com/go/abernathy/StrategicDigitalMediaEntrepreneur

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Gutenberg to Zuckerberg: Innovation and Entrepreneurship

It is 1450 in the medieval town of Mainz in Central Europe. A former blacksmith and engraver is seeking investors for a secret project he refers to simply as "the work of books." Until now, Johannes Gutenberg, the youngest son of aristocrats, has led a rather peripatetic life shuttling among cities along the Rhine River as he seeks to make his own fortune. With money he inherited from his mother's estate, he's invested in a number of commercial ventures, including a plan to manufacture and sell handheld mirrors that are supposed to reflect a "holy light" on pilgrims visiting a 1439 exhibition of Emperor Charlemagne's relics in Aachen. Unfortunately, floods delay the pilgrimage for more than a year. As with many of his ventures, the profit he envisioned never materializes. With his inheritance gone, he has returned to the city where he was born and sets up a workshop in a building owned by a distant cousin.

Far from being discouraged, Gutenberg, who is now in his early fifties, is once again dreaming of striking it rich. Over the past decade, he has acquired a grab bag of skills, including metallurgy, and has invented several new manufacturing processes that he hopes to use in this new venture of printing and selling Bibles. But first, he needs an investor to advance him the funds. A local banker by the name of Johann Fust steps forward, lending Gutenberg 1,600 guilders (which is several hundred thousand euros in today's currency). Fust also introduces him to Peter Schoeffer, who signs on as an apprentice. Using the calligraphy skills he has developed working as a scribe in Paris, Schoeffer begins designing the typeface for the Bible while Gutenberg, the alchemist, attempts to bring all of his inventions together in a sequential printing process.

History recognizes Gutenberg as the inventor of the printing press. In fact, in his workshop, he invents, not one, but four separate products and processes. First, he develops a hand mold that he uses to cast individual letters of the alphabet. Once his moveable letters are cast in metal, they are fitted into a frame, and used to make multiple impressions of the same word onto a page. He then turns his attention to ink and paper, experimenting with formulas, adjusting the viscosity of the ink so that it bonds firmly with the paper, which also must be just the right thickness so it will not be shredded by the metal type. As a final step, he invents a new type of press—one with a screw that can be manually tightened using a wooden handle that compresses the type onto a flatbed surface onto which the image will be imprinted.

It takes several years of experimentation and adjustment to get the printing process just right. All the while, Gutenberg employs more than 20 people in his workshop because producing a quality reproduction of the Bible is a huge undertaking. Setting the 42 lines of type on each of the 1,282 pages requires at least a half day. Gutenberg attempts to cover his day-to-day payroll and operating expenses by printing a variety of other less

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prestigious materials, including indulgences, pamphlets, poems, and a Latin grammar book. By 1455, Gutenberg is finally ready to go to market, having produced almost 180 copies of his masterpiece. He tentatively decides to charge the princely sum of 40 guilders for each Bible.

Unfortunately, his investor has grown impatient. Fust sues Gutenberg for 2,000 guilders, claiming that over the past three years he has made no interest payments on the original loan of 1,600.

Gutenberg's apprentice, Schoeffer, testifies for Fust, who prevails in court. In addition to receiving a financial settlement from Gutenberg, Fust is awarded possession of almost all of the Bibles that have been printed, as well as the equipment in the workshop. With proceeds from the sale of the Bibles and using the tools and processes that Gutenberg had invented, Fust and Schoeffer set up their own workshop. In 1457, they become the first printers in Europe to publish a book stamped with their own branded imprint. On his own after Fust's death a decade later, Schoeffer becomes one of Europe's most successful and famous early printers, publishing his own version of the Bible, as well as catalogues and dictionaries that are sold through a far-flung network that stretches across the western half of the continent.

In contrast, Gutenberg's finances are apparently in tatters. In the years after the lawsuit, Gutenberg continues doing some minor print work, maybe even furnishing type for another Bible produced in 1459. He dies around the age of 70 in 1468, unknown outside his small circle of friends and former associates, the significance of his innovations largely unrecognized. He is buried in a churchyard cemetery near Mainz that has since been destroyed, his gravesite lost to posterity.

Gutenberg was the original "disruptive innovator." His inventions and improvements wrenched civilization from the age of the scribe whose works were available only to an elite few into a secular age of mass-produced, widely circulated texts that spawned social, political, and economic revolutions. Today, there are statues of Gutenberg throughout Europe, a university named after him, and a museum dedicated to him and his inventions in his hometown, right across from the imposing, 1,000-year-old Mainz Cathedral, under the spires where he set up his now famous workshop. In 2000, at the dawn of the third millennium, both scholars and journalists for the popular press that his inventions fostered proclaimed Gutenberg as one of the most important figures in the history of mankind.

Yet it was not until 50 years after his death that Gutenberg was finally acknowledged in historical texts as the inventor of typography and modern printing processes. From the vantage point of the twenty-first century, it is instructive to contemplate the supreme ironies of Gutenberg's life and the lessons it holds for today's digital innovators and entrepreneurs. Why were his innovations in printing processes and products—which revolutionized communication—unrecognized during his lifetime? Why did the world's first media innovator fail to capitalize financially on his own transformative inventions and become a successful media entrepreneur?

In this chapter, we will explore the difference between successful innovators and successful entrepreneurs. Among the questions we'll consider are:

- What is a media enterprise and what are the core competencies of economically successful media companies?
- What are the key transformative media innovations? How have business models for media enterprises changed over time in response to those innovations?
- What is the difference between a disruptive innovation and a sustaining innovation?
- What are the key mistakes that Gutenberg made? What are the lessons for today's media entrepreneurs?

Defining a Media Enterprise

Prior to Gutenberg, publishing was a solitary artistic endeavor. A wealthy benefactor would commission a scribe, skilled in the art of calligraphy, to hand-copy a text onto either parchment or paper. Most of the transcription occurred in the monasteries and most of the texts were of an exclusively religious nature. Transcribing a single book typically took at least a year, sometimes as much as two years, depending on the length of the text. Because the scribes were creating a new text by copying from an existing one (which most likely was itself a copy of the original document), they often codified errors that had been made by previous scribes in the new version, or they unintentionally edited in their own errors. Additionally, the quality of the actual reproduction depended on the calligraphy skills of the craftsman doing the transcription. Therefore, most accomplished scribes were considered "artists," and they tended to have only a handful of very wealthy clients who paid for their services.

After Gutenberg, publishing was a commercial endeavor. In contrast to the artist-scribe, a successful publisher needed to understand not only the economics underpinning every phase of producing a book, but also those involved in selling and distributing his products to many customers. Successful publishers began mastering the art and science of marketing, as well as manufacturing. They quickly developed a rudimentary understanding of such modern-day terms as "target market," "pricing sensitivity," and "competitive threat," while simultaneously moving toward a more efficient division of labor on the manufacturing side.

Economics is the study of how individuals and firms make choices, given that we have limited resources, such as time and money, available to us. Economists define a firm, or company, as an enterprise that converts raw materials into products or services, which are then distributed to consumers. Media firms straddle the line between traditional manufacturers of physical products, such as autos, and service providers, such as banks and financial institutions, since they create and distribute *both* products and services. An idea might well remain ephemeral—a momentary thought passing through in our own minds or a joke shared between two people and then forgotten—unless it is transformed (packaged) into a product that is distributed to others.

Media companies provide a service by creating or acquiring content that serves the needs and wants of society—such as information or entertainment. That content may then be packaged with other content to form a product, such as a newspaper, television show, or website. *Therefore, we can define a media enterprise—distinct from other firms—as one that is involved in acquiring or creating content, which is then packaged and distributed to various individuals and groups in society that will consume that content.* In business lingo, we can say that the creation, packaging, and distribution of content are the "*core competencies*" of a media firm.

The type of content produced by media enterprises determines the potential audience, and that, in turn, determines the business model of a specific media industry. Today's media companies produce a wide variety of content that has traditionally been grouped into four broad categories:

- *News*, such as the content in the *New York Times* and on the *NBC Nightly News* broadcast.
- *Information*, including business-to-business providers of proprietary research and analytics, such as Reed Elsevier's Lexis-Nexus for lawyers and Bloomberg's Business Wire for Wall Street traders.
- *Persuasion*, such as Ogilvy and Mather and other advertising and marketing agencies, or the commentary news shows on cable networks such as Fox.
- *Entertainment*, such as Viacom, with its cable channels and Paramount film studios.

Some media companies, such as the New York Times Company, specialize, providing primarily general interest news and information. Others, such as the Walt Disney Company, produce a variety of content that spans the spectrum from news to entertainment to retail. Therefore, Disney has a different business model than the New York Times Company. It also has a distinct model for each of its business divisions, which range from theme parks to movies. More and more, in the digital environment there has been a blurring of the lines between the four distinct categories, as media companies seek to engage audiences who want to interact with the content, both online and in-person, and in a variety of forms, including quizzes and video games as well as theme park rides. In the process, consumers have also become creators of content.

However, many of the underlying economics of today's media enterprises were established during the Gutenberg era when he began to separate the processes involved in publishing a book. Let's briefly consider the economics of each of the three processes—creating, packaging, and distributing content—for two types of publishers, a newspaper and a book publisher. First, a media enterprise needs to either create content or acquire it. A newspaper will hire a journalist to do original research and reporting that are then transformed into an article. Once the article is written, an editor will then package that content together with other articles written by other reporters. The package becomes an "edition" that is distributed to consumers—either physically (by carriers) or via the Internet. Book publishers, on the other hand, tend to acquire content, contracting with a specific author to produce a manuscript, or paying someone for the right to reproduce material that already exists. Once a manuscript is submitted, an editor packages the content into a finished book, which is then distributed through retail outlets—either book stores or online.

Both newspapers and book publishers incur significant costs as they create, package, and distribute content. Historically, consumers have been more willing to pay for certain types of information and entertainment than for general interest news. Book publishers cover their costs of producing content by selling directly to consumers. In contrast, newspapers, which traffic in general interest news, typically sell access to the audience the content attracts. They charge readers only a fraction of the costs associated with producing and distributing the content, and instead rely on revenue from their advertisers to cover the majority of the expenses and also provide them with a profit.

Even though they have two revenue models, both types of publishers need to have a thorough understanding of their audience: How large is the target audience? What is the best method for distributing content to that audience? How much are the consumers of the content willing to pay in order to receive it? Or, conversely, how much will someone else pay to have access to that audience?

This means that successful managers of today's media enterprises—whether commercial ventures or non-profit entities, such as the Public Broadcasting Corporation—must develop an economic mastery of the processes and procedures necessary to produce and distribute a firm's unique content. They must also possess a strategic understanding of how the various processes can be enhanced or disrupted by innovation.

How Innovation Drives the Business Models of Media Companies

Disruptive technological innovation has given rise to three distinct eras in communication: print, electronic, and digital. Over the past 550 years, each technological breakthrough has built on previous innovations and expanded the influence of the media industry and its reach. Each met an existing market demand or created a new one. Each technological breakthrough spawned new business models.

The Print Era (1450–1900)

This era is divided into two periods: pre- and post-1800. Figure 1.1 summarizes some of the main innovations in the print era. The early years of the print era coincided with the Renaissance movement of the fifteenth century, which had started in the city of Florence and created an interest among the educated classes in reading Greek and Roman classics. By 1450, there were a number of innovators across Europe attempting to solve the riddle of printing books on a press in order to meet a new market demand for secular texts that could be produced much more quickly and inexpensively than the manuscripts produced by scribes.

We don't even know how the first printing press looked since all we have as guides are artists' renderings of wooden presses built in the late 1400s. By 1600, hand-operated wooden presses, very similar to the one we suppose Gutenberg had built 150 years earlier, were ubiquitous throughout the towns in Europe. An estimated 200 million books of varying quality were in circulation. The most expensive included engraved illustrations and maps, using a technique perfected and introduced around 1550. Simultaneously, pamphlets were evolving into newspapers. The first printed newspaper was published in 1605 in Strasbourg and the first English language newspaper in 1622 in London, followed by the first daily in 1702. However, despite incremental refinements in the printing process, books and newspapers published prior to 1800 looked very similar to those published in 1700. Publishing was not a mass medium and was often a side business.

Innovations of the early nineteenth century—starting with the introduction of the steam-powered rotary press—vastly improved the quality and speed of producing printed material and heralded the arrival of the era of mass communication, as well as the establishment of modern-day media business models.

The Steam-Powered Rotary Press

After the introduction and swift adoption of the steam-powered press with rotary cylinders in the early 1800s, the business models of book publishers and newspaper publishers diverged, and a new media industry—advertising—was born. Prior to the early 1800s, newspaper publishers were limited in the number of copies they could sell by the capacity

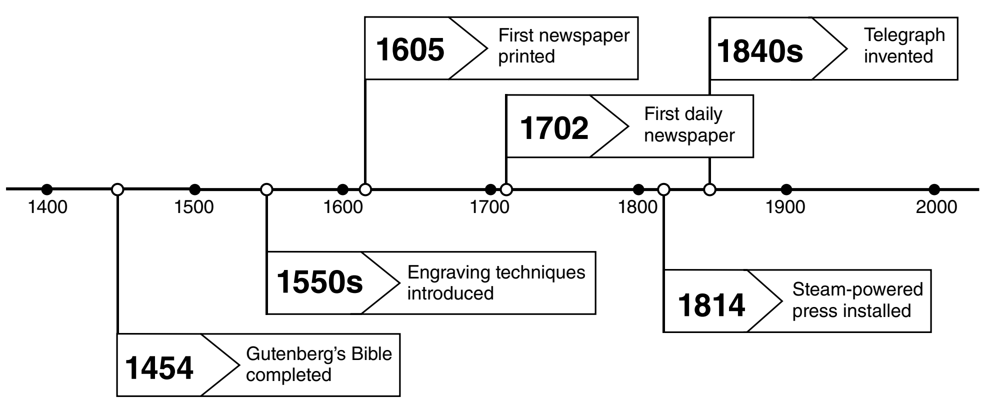

Figure 1.1 Timeline of some major innovations in the print era (1450–1900).

of hand-operated presses, which could only print about 3,600 page impressions a day. Circulation of a typical paper ranged from a few hundred copies to a couple of thousand and was confined to a small geographic area near the printer's shop.

The invention of the steam-powered press, which could print several thousand copies an hour, coincided with the Industrial Revolution and the mass migration of people throughout Europe and North America to cities. Businesses wanted to entice new urban residents to their establishments, and daily newspapers suddenly had the ability to distribute thousands of copies. The Penny Press era was born. Newspapers dropped the price they charged readers from 6 cents to 1 cent and made up the difference by charging businesses to advertise their goods and services. The lower price attracted more readers, which allowed newspapers to increase the price they charged advertisers. This established a new business model for both newspapers and the mass-circulation magazines that came on the scene shortly afterwards. In contrast to the book publishing industry, mass circulation newspapers and magazines increasingly relied on advertisers—not readers—to provide the majority of their revenue. Previously, newspaper publishing was a marginally profitable business, if that. After the introduction of paid advertising, it became a much more profitable enterprise, leading to the rise of the first media barons.

The Division of Labor and Economies of Scale

As publishing evolved into a modern-day business enterprise, a division of labor began to emerge. The steam-operated printing presses required skills very different from those in the past and led to a *division of labor*. Previously, one or two people—perhaps the printer and his apprentice—could write, compose, and then print a four-page weekly paper. The publisher of a multi-page daily paper, printed and distributed daily to thousands of people, could no longer be a master of all trades. He needed more people with specialized skills. He needed people to write and edit stories, set type (perhaps on the linotype machines that were invented in the 1850s), operate the expensive press, and then deliver and sell thousands of printed copies. By 1845, the *New York Herald* had a staff of 12 in the news room and 20 in the composing and press room. Large US and European daily newspapers in the 1850s and 1860s employed as many as one hundred people, and by the end of the century, famous writers and journalists, such as Horace Greeley and Nellie Bly, had become household names. The process of creating and packaging content had evolved into a profession—that of the writer and editor—while that of printing and distributing had become a craft.

The steam-powered presses were much more efficient than the hand-operated type, but they were also much more expensive. However, the more copies that were printed and circulated, the more advertising a newspaper could attract. Therefore, there was a tremendous incentive to grow circulation, and this, in turn, brought down the *marginal cost* of each paper that was produced on the new press. This is called *economies of scale* since fixed costs (the cost of purchasing and operating the press) are spread over more and more copies that are printed and distributed.

New Products (Telegraph, Photography, and the Typewriter)

Three other innovations improved the quality of the content that was being created, packaged, and sold to readers. The invention of the telegraph in the 1840s gave writers an ability to relay news and other information in a timely fashion, and led to the establishment of the first news co-operative, the Associated Press, in which a group of newspapers shared stories and information among themselves, defraying the costs for an individual enterprise. This is also an example of the *network effect*: the more papers that joined the Associated Press, the more stories that were shared, which benefited all the member newspapers in the cooperative.

Beginning in the 1870s, the adoption of the typewriter as the preferred method of writing stories greatly speeded up the process of both creating written prose and transcribing dictated content. The QWERTY typewriter keyboard, named for the first six letters on the top row, was invented and patented by a newspaper publisher, and was designed to prevent the keys on typewriters from jamming. This keyboard is an example of how a standard once accepted endures, even though more efficient alternatives are invented. Economists call this *path dependence*. Once enough industries have adopted a standard, and enough consumers are proficient with a certain way of doing things, we stay the course unless an alternative of vastly superior quality induces us to switch. So, the hundred-year-old QWERTY keyboard was incorporated into the first personal computers and remains a standard in the digital age.

The use of photography in publications began the transition from the print era of unbroken columns of type to the electronic era of images and moving pictures. It also created yet another journalism profession, that of the photojournalist. Engraved illustrations were the only artwork printed in books, newspapers and magazines prior to the 1850s. By the 1860s, rudimentary hand-engraving processes—some involving wood, others involving copper—allowed for the reproductions of art prints and the Civil War photos Matthew Brady in fine books and magazines (such as *Harper's Weekly*). The first halftone image (in which a photo is converted into dots of varying size) was published in a newspaper in 1873, and by the 1880s, photography was in widespread use in papers and magazines, bringing a you-are-there realism that was previously missing.

You did not have to be literate to appreciate a photograph. But perhaps more importantly, refinement and improvements in both cameras and film throughout the nineteenth century led directly to the introduction of moving pictures, which are really a series of still photos that appear to be moving when shown in rapid sequence on a screen. While reading was oftentimes a solitary endeavor, the consumption of motion pictures—and later radio and television shows—could be a communal one, enjoyed by many people simultaneously.

By the end of the nineteenth century, there were two established and distinct business models for media enterprises. Book publishers, and later motion picture producers, sold their content directly to consumers, while newspapers and magazines relied on advertisers to provide the majority of their revenue. A number of economic concepts that underpin today's digital enterprises had also begun to emerge, including economies of scale, the network effect, and path dependence.

The Electronic Era (1900–1990)

The technological innovations of the print era—especially the telegraph, telephone, and photography—laid the groundwork for the electronic era, which is divided into two periods, marked by the rise of radio and then television. Figure 1.2 summarizes the major innovations of the electronic era. The first AM radio stations of the early twentieth century ushered in a new era in mass communication, as they transmitted audio signals through the air as radio waves, which were received by thousands of antennas and then routed to thousands of individual radio sets. This new era coincided with a number of technological breakthroughs, such as the installation of electricity in most homes in the United States and Europe, leading to a quick adoption of this new medium. This

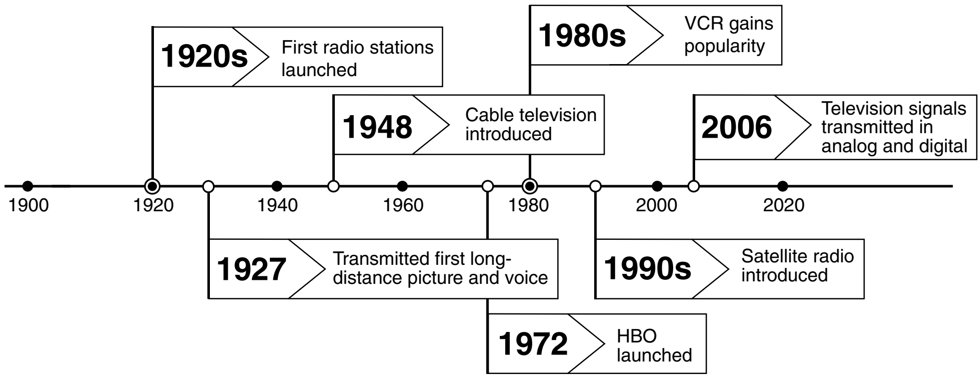

Figure 1.2 Timeline of some major innovations in the electronic era (1920–2006).

expansion of media enterprises into the broadcasting arena also led to the creation of totally new media enterprises which were regulated by the government and the creation of a variety of new business models.

The Broadcast Model

First with radio, and then with television, which was developed in the 1930s and 1940s, a networked system evolved. This system tied together multiple stations, which were required to have a government license to broadcast their signal across a region. In the UK. the British Broadcasting Company (BBC), founded in the 1920s and funded primarily by a fee charged to all households in the country, became the first non-profit, government-supported broadcasting organization. This model was adopted and is still prevalent in many countries today. In the United States, where a listener or viewer of a broadcast program could receive the over-the-air signal of a broadcasting network without paying any fee for the privilege, a for-profit model prevails. Even from its earliest day, the potential audience for radio and television shows was many times larger than that of the largest newspapers of the day. Therefore, early for-profit radio networks in the United States (such as CBS and NBC), and the for-profit television networks that succeeded them, relied solely on the revenue they received from advertisers who wanted to reach a large audience in a certain region.

The Cable Model

The wired cable companies that arose in the United States in the 1950s and the 1960s developed yet a different business model, charging a monthly fee to customers who signed up for their services. They justified this charge because their large antennas could receive broadcast signals from multiple stations across a wide geographic area—signals that were often too weak to be received by the smaller rooftop antennas perched on houses. Initially, most households that subscribed to a cable service could only receive two or three network channels. That began to change in the 1970s, when Time-Life launched Home Box Office (HBO), the first subscription-based television channel. The HBO signal was delivered via satellite transmission to cable operators throughout the country, who then retransmitted the programming to customers who paid an additional monthly surcharge. Simultaneously, Ted Turner, the owner of an outdoor advertising company in Atlanta, purchased a small, struggling, local ultra-high frequency (UHF) station, and also began delivering that station's signal to remote cable operators via satellite.

Other Business Models

Primetime television viewing peaked in the 1980s, a decade that witnessed the introduction of video cassette recorders (VCRs), video games (Pong), and the first cellular telephones, as well as the rollout of several new cable-only channels, including CNN, the first all-news station. These new channels, which were aimed at smaller, niche audiences, established another business model, relying on revenue from both advertisers, as well as from the cable operators, which paid a fee to the station owners to carry their programming. VCRs and video gaming introduced yet another business model, in which consumers paid twice—for the machine and then for the individual games or tapes.

The 1990s saw a continued ramping up of ancillary products and services, including the introduction of satellite radio (SiriusXM) and television (DISH and DIRECTV) providers, the swift adoption of the DVD player (and demise of the VCR) and the launch of TiVo (interactive TV services).

By the end of the century, two dominant economic models had emerged around the two largest electronic media segments—the networks and the cable providers. The original broadcast networks continued to rely overwhelmingly on revenue from advertisers who wanted to reach a mass audience. This made their business model vulnerable as new cable channels, and later the Internet, siphoned off customers. In contrast, the cable operators relied on revenue from consumers, and this put them on a collision course in the twenty-first century with digital services, such as Netflix and Amazon that also charge consumers a monthly fee for the privilege of streaming or downloading content. The number of cable subscribers in the United States peaked in 2012, while the number of consumers streaming content continues to grow.

The Digital Era (1990 to present)

The adoption and rapid spread of digital technology are often referred to as the Third Industrial Revolution—the first occurring in the early 1800s with the invention of steam-powered engines, and the second occurring at the turn of the twentieth century as mechanized manufacturing took hold. Like the electronic and print eras, the digital revolution in media occurred in stages, only this time it occurred over a much shorter timeframe. There are three main inflexion points that greatly influenced the speed with which this new technology was adopted. Figure 1.3 summarizes the major innovations in the digital era.

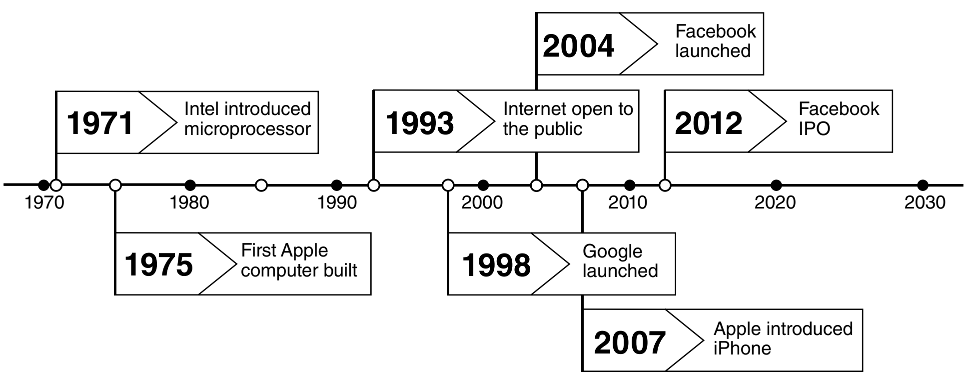

Figure 1.3 Timeline of some major innovations in the digital era (1970–2012).