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## CONTENTS

### Introduction 1

Pelle Snickars and Patrick Vonderau

### I. Data Archaeologies

#### 1. With Eyes, With Hands: The Relocation of Cinema Into the iPhone 19

Francesco Casetti and Sara Sampietro

#### 2. Navigating Screenspace: Toward Performative Cartography 33

Nanna Verhoeff

#### 3. The iPhone as an Object of Knowledge 49

Alexandra Schneider

#### 4. Media Archaeology, Installation Art, and the iPhone Experience 61

Jennifer Steetskamp

#### 5. Hard Candy 73

Kristopher L. Cannon and Jennifer M. Barker

## II. Politics of Redistribution

6. [Personal Media in the Digital Economy](#) 91  
[Göran Bolin](#)
7. [Big Hollywood, Small Screens](#) 104  
[Alisa Perren and Karen Petruska](#)
8. [Pushing the \(Red\) Envelope: Portable Video, Platform Mobility, and Pay-Per-View Culture](#) 124  
[Chuck Tryon](#)
9. [Platforms, Pipelines, and Politics: The iPhone and Regulatory Hangover](#) 140  
[Jennifer Holt](#)
10. [A Walled Garden Turned Into a Rain Forest](#) 155  
[Pelle Snickars](#)

## III. The App Revolution

11. [The iPhone Apps: A Digital Culture of Interactivity](#) 171  
[Barbara Flueckiger](#)
12. [Slingshot to Victory: Games, Play, and the iPhone](#) 184  
[Mia Consalvo](#)
13. [Reading \(with\) the iPhone](#) 195  
[Gerard Goggin](#)
14. [Ambient News and the Para-iMojo: Journalism in the Age of the iPhone](#) 211  
[Janey Gordon](#)
15. [Party Apps and Other Citizenship Calls](#) 223  
[Anu Koivunen](#)
16. [The iPhone's Failure: Protests and Resistances](#) 238  
[Oliver Leistert](#)

## IV. Mobile Lives

17. [I Phone, I Learn](#) 251  
[Anne Balsamo](#)

18. [EULA, Codec, API: On the Opacity of Digital Culture](#) 265  
[Lane DeNicola](#)

19. The Back of Our Devices Looks Better than the Front of  
Anyone Else's: On Apple and Interface Design 278  
Lev Manovich

20. Playing the iPhone 287  
Frauke Behrendt

21. [Mobile Media Life](#) 296  
[Mark Deuze and the Janissary Collective](#)

## V. [Coda](#)

22. [The End of Solitude](#) 311  
[Dalton Conley](#)

BIBLIOGRAPHY 317

LIST OF CONTRIBUTORS 329

INDEX 333



## MOVING DATA





# Introduction

PELLE SNICKARS AND PATRICK VONDERAU

**A**LTHOUGH HE DID not wear his trademark black mock turtleneck, it was unmistakably Steve Jobs walking the red carpet at the Oscars in 2010, handsomely dressed in a tuxedo. Some bloggers spotted him; tweets were sent out; and excitement echoed across Twitter. Eventually, some pictures were taken, and even though Jobs might not have been a celebrated actor, Apple's CEO definitively proved to have star qualities. Apart from media mogul Rupert Murdoch, he was likely the richest person in the audience and, more importantly, at least for some, the most famous. Or as one blogger put it: "OMG it's Steve Jobs! I'm the only one yelling at him."<sup>1</sup>

Jobs's Hollywood "red-carpet moment" in many ways signaled a rupture in the prevalent understanding of media culture, a shift nobody would have expected only ten years earlier. Before then Apple was almost on the brink of ruin, and it is arguably when Jobs returned to the company in 1997—after being exiled for a decade—that Apple turned into a global icon of personal computing. Since then the company has cast something of a spell on both consumers and investors with its unique reputation in the consumer-electronics industry, and it has cultivated a devoted customer base—a group whom some would maliciously label the "Cult of Apple." The company's rise to worldwide fame has in many ways been epitomized by the iPhone, and since its launch, mobile telephony and home computing have moved to the center of today's globalized, branded entertainment industries.

Since its premiere in late June 2007, the iPhone has become not only the fastest-selling smartphone of all time but also a significant symbol of change in media engagement worldwide. Integrating communication and location services with motion pictures, sound, music, text—and more than 500,000 software apps to date—Apple’s gadget has fulfilled the promise of an ever-expandable mobile media machine. It constantly invites its users to consume, produce, and share code; to connect and transmit; to talk and watch; to play and listen, to choose and buy; to search and organize; to measure and store—and by doing so, to translate all these practices into media experiences.

## Cultures, Technologies, and Marketing Practices

The iPhone (and the iPad) indeed point to a convergence of technologies, cultures, and marketing practices that were previously deemed incommensurable. To begin with the last, Apple now rivals Hollywood in terms of average marketing expenditures: its advertising costs in 2010 rose to about \$700 million dollars, and the Apple brand had product placements in at least ten out of the thirty-three number-one box office hits in the United States that year. Apple also constantly leaves promotional traces in print and pixel through a tight promotional symbiosis with news media in general and with tech blogs and technology sections in the press in particular. Apple products had about 2,500 unpaid appearances in U.S. television during September 2010, for instance, and the iPhone has been mentioned in almost 5,000 articles in the *New York Times* alone. It is with the appearance of its “Jesus phone,” then, that the Apple brand seems to have become a phenomenon discussed globally in terms of its makers’ infallibility, and some industry observers credit Apple with having overtaken Google as the world’s most valuable brand in 2011.<sup>2</sup>

Apart from its advertising or branding practices, the iPhone is also symptomatic of the technologies that the entertainment industries have come to depend on for the computers, consoles, and software that constitute their infrastructural backbone. In a broader media-historical perspective, nothing seems to have shaken up established Hollywood distribution models as much as Apple’s idea of marrying the iPod to iTunes. When the iPod was launched in 2001, it certainly was not the first MP3 player on the market, just as the iPhone was not the first—or best—smartphone around. But by synchronizing iTunes with the iPod (and later the iPhone and iPad), Apple integrated hard- and software in a way that would mark its shift into a global media company. Once advertised as turning “your Mac into a nifty digital jukebox,”

iTunes has over the years expanded to allegedly contain “everything you need to be entertained.”<sup>3</sup>

Even though Apple’s technologies have turned out to be highly functional for gaining control over music distribution through its iTunes store—which today holds a market share of 70 percent of global online music sales—Hollywood’s media conglomerates are still ambivalent about letting Apple assume a similar role regarding film and television.<sup>4</sup> There is no doubt, however, that with its integration of hardware and software, Apple has become strategically involved in the media-distribution business to the point that Steve Jobs’s appearance on the Oscar red carpet prompted bloggers to see him as sidestepping traditional Hollywood dealmakers, even claiming that the industry “had now officially been taken over by the geeks”—Jobs: “You make the content (or at least some of it), I’ll deliver it.”<sup>5</sup> If Hollywood (still mostly) deals in moving pictures, Apple is devoted to moving data.

Last but not least, if one considers the way the iPhone has affected culture or, more precisely, the production and consumption of cultural meaning, the circulating “texts” provided by the media industries, and the practices associated with their creation and experience, it might actually be design rather than content that one thinks of. Design, in fact, not only superficially but also substantially relates to the iPhone’s capacity to innovate cultural and creative practices on a large, even global scale. Design establishes a correspondence between the technology and the market, thus allowing the coordination—within a single product like the iPhone—of different or even competing logics, ranging from questions about ways of using it (why buy it?), to actual usage (what to do with it in a particular situation), to the object itself (is it well made, functional, adaptive?).<sup>6</sup> The amazement so often associated with this device as a design object pertains to its capacity to fully answer these questions.

As part of this effort, the invention of “apps” has been particularly powerful in its combination of software design and price modeling. Today, apps fill Apple’s phone with strings of code and equip it with functionalities not even imagined in the corporate headquarters at the product’s 2007 launch, redistributing content produced elsewhere and adding genuinely new meanings to an object not originally conceived as a mobile platform for consumers to download data in a standardized format. In Apple’s first iPhone TV commercials, for example, not a word was mentioned about “apps.” The early advertisements, in fact, looked backward rather than forward, stating that “there has never been an iPod that can do this.”<sup>7</sup> Hence, while Apple’s understanding of the cultural logic of new forms of mobile computation was,

at the time, as limited as anyone else's, after ten billion downloads from its App Store, accomplished in January 2011, the iPhone software platform has become "the most innovative in the history of computing."<sup>8</sup>

Still, since technology has increasingly turned into an integral part of both distributing and creating content, and since deals and partnerships that get that content onto different devices are crucial for companies operating in today's mediascape, Apple's rigorous regulation of access to content has prompted considerable objections. The criticism is not confined to the App Store's rigid terms of business but arguably pertains more to the company's latest corporate move to control and master cloud-based media solutions. Analogous to the long-promised celestial jukebox, cloud computing promises users free storage and automatic synchronization for all their media content. The possibility of accessing iCloud from any Internet-connected device certainly holds rich potential for digital multiplatform distribution, with the "app editions" of Warner Bros. films such as *Inception* (2010) and *The Dark Knight* (2008) forming a pertinent example of integrating feature film into online streaming services and social-networking sites. However, given Apple's competitive edge over companies such as Amazon and Google, which have introduced similar services, and given its ready consumer base of more than 200 million iTunes users, questions about its new market power still have to be explored.<sup>9</sup> How might iCloud services affect the production, distribution, and experience of media, and what challenges can we expect regarding media ownership, ecology, and, most importantly, the regulatory policies of the future? Moving slowly but steadily toward a media environment based on device control and a tightened hold on payment for and delivery of content, Apple has begun to be seen as something of a tech bully. This criticism can be expected to increase given that Apple shot past Microsoft in May 2010, as measured by the value of its stock, to become the world's most valuable technology company. As one blogger put it, "neither Hollywood nor the music industry wants a walled garden ecosystem that doesn't play well (or at all) with non-Apple devices."<sup>10</sup>

## A History of Possibilities

In order to come to terms with Apple's iPhone, it is important to consider the dynamic intersection among these marketing, technological, and cultural forces. Despite the iPhone's economic success, elegance, and "revolutionary" newness, the question still remains how and why to engage in studying the

iPhone as a media object in the first place. In their seminal book, *Digital Play: The Interaction of Technology, Culture, and Marketing*, Stephen Kline, Nick Dyer-Whiteford, and Greig de Peuter suggest investigating this interdependent dynamic of technology, culture, and marketing efforts as propelling the “circuit of capital” and growth in information capitalism. The political economy of media provides a critical but fairly general perspective on the iPhone as an “ideal-type commodity form,” one that reflects the social organization of capitalism at its present moment.<sup>11</sup> Recent ventures into the field of media-industry analysis have testified to the productivity of this critical tradition.<sup>12</sup> Focusing solely on the iPhone “moment” in the media history of consumer capitalism, however, also introduces a number of fallacies that obscure—rather than clarify—what seems to be at stake. To favor the emergent and the immediate at the expense of the old and the contingent, or of failures and devaluation, often leads to a skewed picture of innovation processes and of media history generally, and potentially even to a fetishization of branded consumer products, which the iPhone epitomizes.

Archeological sensitivity is thus needed to unearth the wider network of technologies, discourses, and cultural practices within which the iPhone appeared, and also the detours, dead ends, and abandoned and discarded models that accompanied or preceded its rise to fame. Consider, for instance, how the American journalist Robert Thompson Sloss (1872–1920) in 1908 envisioned the future of mobile media in his contribution to the German book *Die Welt in hundert Jahren*. One century before the iPhone was launched, Sloss rightly predicted the advent of a “wireless century” marked by the availability of “pocket phones” that would allow instant and worldwide connections between individuals or even groups, for personal conversations from the North Pole as much as for conference calls to New York City; for transmitting sounds and music, moving images, and written documents; and even for making bank payments.<sup>13</sup> Although Sloss erred in stating that the mobile phone would drastically diminish criminality, he correctly identified its role as a medium of surveillance and news reporting in situations of crisis and political change. Somewhat unique in their precision, his observations still have to be seen as part of a much broader discourse of the imaginary, as one example of a sense of anticipation informing the history of ideas and technological try-outs on which our present understanding of “new media” is founded.<sup>14</sup> Following the development of photography (1810s), telegraphy (1830s), the telephone (1876), the phonograph (1877), moving pictures (1880s), and wireless telegraphy (1895), the “liveness” of simultaneity had become an experience and an object of experimentation by the late nineteenth

century. Crystallizing around ideas of mobile televisuality, as exemplified in Sloss's 1908 vision of a pocket wireless, this cultural imagination took form in endless patents and variants before "smartphoning" developed as its current cultural practice. For evidence of the arbitrariness of the trajectories that led to the present, one might point to early plans for videophone systems such as the (never realized) telectroscope in 1877, for instance, or to the close interrelation of transportation, music listening, and wireless (radio) communication since the 1920s or to the attempts to develop portable electronic devices to increase workplace efficiency in the 1990s.<sup>15</sup> To stick to this last point, it was with the "Palm-Pilot," the first generation of handheld digital assistants, that the notion of "palms" entered the vernacular as a synonym for such devices. Research in Motion released its iPhone variant, the BlackBerry, in 2002, and as one of the first convergent mobile gadgets it instantly became popular within the marketplace by concentrating on e-mail functionality for the business sector. As with other smartphones, the BlackBerry surfed the Web, yet its small screen size and lack of a multitouch display made it a weak competitor after the introduction of the iPhone.<sup>16</sup> Today, RIM and its BlackBerry still hold a fair share of worldwide smartphone sales, yet even with a constant line of new models, the company has not come close to matching the cultural impact of the iPhone. One key reason is that Apple has been aiming its smartphone toward the individual user rather than enterprise sales—though this is not to say that Apple is *all* about "communicative capitalism," to invoke Jodi Dean's suggestive term.<sup>17</sup>

Situating the iPhone within this wider history of possibilities allows distance from the spectacle of innovation and the "mise-en-scène of advertising" that characterize the current view on transient media.<sup>18</sup> Today, one may easily tap into the truism of convergence by declaring the iPhone to be the "universal remote" for all sorts of available media content,<sup>19</sup> thus reducing media change to techno-teleologies and downplaying the wildly divergent meanings that the iPhone or any other medium might take on, depending on the contexts of its use. But even if one is sensitive to the political dimension of the iPhone's uses and to the ways "its presence activates and embodies a variety of heterogeneous forces within and around a space,"<sup>20</sup> the question remains how to address or, rather, how to nail down this particular device analytically, given its slippery, hybrid, ever-changing nature. Is this about mobile communication, smartphones, or the impact of a global brand on the entertainment sector? Or rather about innovative forms and formats and the platforms by which they are disseminated and made part of everyday practices? Or, again, about a medium and the way it regulates access to apps, music, games, vid-

eos, people, and media practices? And then, of course, there is not one single iPhone but rather four consecutive models so far, with a constantly modified operating system. So, what, indeed, are we talking about?

## A Focus on Protocols

A frequently suggested solution to this problem, linked to the analysis of current media industries, consists in adopting the logic and terminology of industrial strategizing while maintaining an interest in, or possibly nostalgia for, the “cultural” and “social” aspects of media-commodification processes. Henry Jenkins famously introduced “transmedia” as a key term to label practices associated with media convergence, and the term has been readily taken up by industry professionals and academics alike because of its capacity to describe (and legitimize) industrial phenomena such as franchising, synergies, and product-line extensions, mainly by pointing out the relation to what storytelling, meaning making, and affective experiences seem to require. In a similar vein, Frank Rose’s book *The Art of Immersion* argues that the Web is changing storytelling by addressing the way users *are* media—an approach that would be easily adaptable for the iPhone experience.<sup>21</sup> As productive as these and related accounts may be, replicating the logic of industrial planning and the rationalist agenda on which it is based often oversimplifies the contradictory and complex character of media change. While it is without any doubt vital to keep up with and study new industrial phenomena, it also seems key to adopt a different attitude to our particular object of study.

Grounded in the lived experience of our mediated everyday, this book investigates the iPhone as a media *dispositif* or apparatus: as emblemizing a radical shift in the relationships among the technological affordances, modes of address, and subject positions that once marked such “old media” as television or cinema.<sup>22</sup> Rather than retelling a story of unprecedented industrial innovation, this book sets out to critically scrutinize the iPhone as a media *dispositif* that is associated with specific technologies and with concrete protocols orienting its use. As Lisa Gitelman notes, the success of all media relies on our “inattention or ‘blindness’ to the media technologies themselves (and all of their supporting protocols) in favor of attention to the phenomena, ‘the content,’ that they represent for users’ edification and enjoyment. . . . When media are new, they offer a look into the different ways that their jobs get constructed as such.”<sup>23</sup> One of the many aspects that make the iPhone such an interesting object of study is its capability to turn its “job” immediately

into a blind spot, making us forget about Apple's intricate commercial and technological infrastructure by the way it offers play and recreation when we are just about to make—and pay for—a phone call. In fact, while traditional mobile-phone use has been one of the iPhone's weakest features, with dropped calls (and accidentally dropped phones) widely reported, Apple's smartphone offers a vast new potential for control technologies. On the one hand, this relates to “control” and “technology” in a narrow sense, as exemplified by the iPhone's hidden location tracker—discovered in spring 2011 by Alasdair Allan and Pete Warden—or by independently developed locative social-media apps for the iPhone such as Foursquare, BrightKite, Google Latitude, Whrrrl, or Loopt, which function as what Alice E. Marwick has described in terms of “prescriptive social software”: “applications that encourage particular social behaviors and provide very clear rewards for behaving in the ‘right’ way.”<sup>24</sup> On the other hand, “control” also pertains more broadly, and less negatively, to the study of media technology and protocols accompanying large societal transformations and the crises that occasionally follow. What the invention of photography, telegraphy, or the telephone meant for solving the crisis of control brought about by nineteenth-century advances in heavy industry, one might argue, the mobile Internet and the iPhone mean for today's advances in the media industries and for the “creative classes” on whose existence these industries' current growth relies.<sup>25</sup>

If there is a one common theoretical interest in the contributions collected in this book, it is in studying the various protocols associated with the iPhone's technological form. Gitelman's notion of “protocol” refers to the concrete arrangement of heterogeneous elements framing and expressing a variety of social, economic, and material relationships.<sup>26</sup> In the case of the iPhone, protocols include the aforementioned default conditions, normative rules, and control functionalities gathering around what specifies the iPhone technologically. The analysis of iPhone protocols also entails descriptions of its diverse forms of use (such as self-locating activities) and may even include billing cycles (famously illustrated by YouTube character iJustine of the viral video comedian Justine Erziak in her clip about the “300 page iPhone bill”).<sup>27</sup> Studying protocols not least implies a closer look at the iPhone's technical protocols: the cellular, digital, and high-speed IP data networks without which today's mobile media would not be possible and the carriers operating those networks.

In fact, if the more than 180 million units sold since 2007 position the iPhone as the most central information technology of the last decade, its centrality also comes from its impact on mobile carriers. One crucial aspect of



the device—that is, compared with other smartphones on the market—is the way it has altered the relation between phone manufacturers and carriers, at least in the United States. Without losing control over design, manufacturing, or marketing, Apple in early 2007 was able to negotiate a significant deal with AT&T. This was unusual since wireless carriers had traditionally treated phone manufacturers “like serfs,” as *Wired* put it. The iPhone changed the balance of power: carriers were suddenly “learning that the right phone—even a pricey one—[could] win customers and bring in revenue.”<sup>28</sup>

Hence, studying the iPhone means not only paying attention to its technological form and modes of use but also describing the ways this particular device hooks up to different networks, be they mobile or wifi. The iPhone has become the prototype of the constantly connected gadget, and together with the iPod Touch and the iPad it forms part of the ubiquitous computing continuum. In general, smartphone sales have grown five times faster than those of personal computers in recent years, although smartphone platforms account for less than 20 percent of all mobile handsets shipped globally. Industry observers predict that 2012 will be the year when the mobile becomes the new default for the tech industry. Carriers thus have a natural interest in getting a share of the increasing revenue, and they supposedly will because mobile data continue to grow at an exhilarating pace. According to some estimates, by 2015 there will be more than five billion smartphones and tablets connected to various mobile networks.<sup>29</sup>

At the same time, the liaison between Apple and AT&T has not been unproblematic. Thanks to this alliance, AT&T effectively has outperformed competitors such as T-Mobile USA, which lost 390,000 contract customers in 2010 because of its inability to sell the iPhone. AT&T’s rise has occurred despite enduring network quality issues, failed preorders, and security leaks, which have contributed to its image as the “BP of cellphone carriers.”<sup>30</sup> U.S. iPhone customers have long envied Europeans, who have been able to choose among many different carriers, and if the iPhone 4 has become Apple’s most successful phone introduction so far, it was hardly because of AT&T’s service. Consequently, in early 2011 Apple began to offer the iPhone 4 via Verizon Wireless, prompting what some would call a “U.S. iPhone war” between the two networks.<sup>31</sup>

In addition, for all of its success in the mobile smartphone business, the Apple iOS has lately been surpassed by other mobile operating systems. In 2011, Americans were buying more Android mobiles than iPhones—mainly because there are so many models using the latter operating system. The current and rapidly changing market positions of iOS, Android, and Windows

Mobile will likely give open standards an advantage in the future. Some bloggers have even suggested that Apple's current leadership in the smartphone (and tablet) market may erode because the company no longer pays enough attention to the Mac. Apple might lose out on the smartphone market, especially to Android, because it abandoned an open-source approach. Major components of the Mac OSX, including the UNIX core, are open source, which is not the case with the mobile iOS. And the open-source software community's immense pool of developers is, naturally, an advantage for all open mobile operating systems. The same goes for apps. Android's Market now has more than 400,000 apps and will soon numerically overtake the App Store because of the vast number of developers. Still, as a number of commentators have remarked, paid "quality apps" in Android's Market are scarce, and while the App Store is generating billions for developers, hardly anybody is getting rich in the Android Market.<sup>32</sup>

## Disciplinary Frameworks

Whatever future economic developments may bring, the iPhone remains a cultural and technological prototype worthy of study in its own right. No other mobile phone has approached the iPhone's sociocultural impact or demonstrated the extent to which mobile technology shapes and alters media culture. Focusing on one specific mobile gadget such as the iPhone runs counter to earlier mobile-technology studies, which in most cases adopt broader perspectives—with only a few exceptional case studies, notably on Nokia. For instance, Richard Ling's *The Mobile Connection* opens a vivid panorama on the cell phone's "impact on society."<sup>33</sup> However, studies of mobile technology have mostly been concerned with the general rather than the particular, speculating on the consequences of mobile communication for our everyday lives, teenage text messaging behavior, or new forms of coordinated communication and accessibility, to give just a few examples. In addition, before 2005 mobile studies did not pay much attention to the media dimension of cell phones. But as these devices started to become more sophisticated, integrating the features of an Internet-enabled personal digital assistant with that of a mobile phone, a camera, and a portable media player, scholarly interests naturally shifted toward issues of mediality. For instance, in his pioneering study *Cell Phone Culture* (2006), Gerard Goggin reflected about "the growing cultural importance of mobile technologies" and the new status of cell

phones as “mobile media.” Goggin’s book was published before the launch of the iPhone, yet many of his insights were spot on, stressing the centrality of cell phones “for media today and in the near future.”<sup>34</sup> The present volume can, in fact, be seen as taking off where the Goggin’s book ended. Then again, this book is less concerned with mobile technology studies. The essays in this collection take up not only the way moving pictures have turned into moving data, or the way data are moving with and via new mobile media, but also the various ways we are addressed, organized, and moved around by the concrete protocols launched with Apple’s first phone a few years ago.

Despite its topical subject matter, the basic rationale of *Moving Data* is not the ambition to lay the grounds for yet another subdisciplinary label, an ambition whose productivity has been suggested by “mobile studies,” “off-screen studies,” or “transmedia studies,” to name just three recent examples.<sup>35</sup> In turning from moving pictures to moving data, we do not need to reinvent our field of inquiry. Media studies offers a disciplinary framework for this collection of articles less in the sense that its contributions directly refer to notions of textuality, histories of production, and the televisual or cinematic experience—although some articles explicitly do so. Rather, the contributions to this book employ interests and issues brought up within the interdisciplinary media-studies tradition over the course of almost a hundred years, including institutions and practices, art and agency, and policies and politics. If we agree that media studies has never been a discipline in the strict sense of the word but rather has formed part of a transdisciplinary field of inquiry funneled by conceptual crossbreeding and constantly changing objects of study, then this book testifies to the ongoing vitality of this field.<sup>36</sup>

The studies of the media industry collected in this book extend more traditional analyses of film and television in three different ways. First, they put humanities-based research in dialogue with the social sciences, most notably sociology, anthropology, and economics. Second, the essays here go beyond traditional textual analysis or industrial history by engaging in a dialogue with practitioners working in the field and by attempting to explain industrial processes as they occur—that is, not only in retrospect. Third, analysis of Apple and the media industries more generally, as something worthwhile in itself, accommodates the interests of an increasingly media-savvy public while critically distinguishing itself from the promotional agenda and descriptive methods of journalism.<sup>37</sup> One might argue that these attempts to move beyond traditional media scholarship form a necessary response to key challenges within our field. Thus, the present book is also a follow-up to our

previous jointly edited collection, *The YouTube Reader* (2009), which confronted similar challenges by focusing on Apple's archrival, Google.

## About This Book

Returning to Steve Jobs's 2010 Oscar appearance, one indeed may wonder about the shifting alliances and the patterns of ownership and control linking and separating Apple, Google, and Hollywood. Having become Disney's largest individual shareholder, a member of Disney's board of directors, and a representative for Pixar, Steve Jobs arguably stood for an entirely different relationship with Hollywood than Google—and it has to be seen how this position will be maintained or be renegotiated following his untimely death on 5 October 2011. Both Apple and Google are essentially in the distribution business and have made the Internet a default option for their corporate strategies. YouTube, which Google owns, and the iPhone are net-based platforms to disseminate user-generated content of various kinds, with the former originally marketed as a “killer app” for the latter. But the responses of Hollywood and Madison Avenue to the two companies' endeavors have been almost antithetic. At the same time, as suggested earlier, Apple and Google have become fierce competitors on the smartphone market, with some bloggers predicting in 2011 that Google's freely distributed Android OS will erase the iPhone's once enormous lead. Whatever the outcome, the dynamics of this competition certainly are one reason that mobiles have become key to the future of media entertainment.

Yet what do today's embodied experiences of movement (and movies), the constant movement of data between multiple platforms, and the dynamic personalization of media actually imply? To what extent are the haptic pleasures of a gesture-based interface and a 3.5-inch display with touch controls challenging conventional notions of media usage and experience? How are ideas about user-led innovation, collaborative mapping, or creative empowerment to be understood and reconciled, if at all, with techniques of mobile surveillance, personal rights, and prescriptive social software? What about the economy of the App Store and the perceived “crisis of choice” in the digital era? Finally, in what ways might studying the iPhone contribute to the analysis of digital media, the history or philosophy of media technology, or a theoretical understanding of media as data? Addressing these and other questions, this book contains a mix of critical and conceptual articles exploring the

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37. Still, it certainly is a research challenge to keep track of the voluminous press coverage of Apple. Although speculations make up the bulk of company news and