Telecommunications Policy 39 (2015) 771–786

Contents lists available at ScienceDirect

Telecommunications Policy

URL: www.elsevier.com/locate/telpol

Youth and surveillance in the Facebook era: Policy interventions and social implications

Kathryn C. Montgomery*

School of Communication, American University, 4400 Massachusetts Avenue, NW, Washington, DC 20016, USA

ARTICLE INFO

Available online 5 March 2015

Keywords:
Internet
Youth
Privacy
Social media
Big Data
Facebook

ABSTRACT

Facebook's meteoric rise—from a small Harvard-based website that began in 2004, to a global digital platform with a membership of 1.2 billion people a decade later—has made it one of the most profitable and high-profile corporations in today's contemporary digital culture. Its aggressive marketing and data collection practices, however, have placed Facebook at the center of public policy debates over consumer privacy in the Big Data era. This paper explores those controversial practices, focusing especially on their effects on youth.

More than 80% of teens use social media, which have become an essential arena for personal and social development, and which may well be altering some of young peoples' behavior patterns. But except for a handful of studies (mostly published in marketing journals) the growing body of academic literature on social media and youth has ignored the role of marketplace forces. Yet economic imperatives and powerful e-commerce business models are fueling the growth of these new platforms, shaping their structures and operations, and both responding to and influencing user behaviors.

The driving force behind the growth of social media—and, indeed, all digital media—is a complex set of data collection, tracking, and targeting systems that monitor and monetize individual users' behaviors as well as their interactions with friends and acquaintances. Facebook's marketing, data collection, tracking, and targeting operations are specially attuned to key aspects of adolescent development, both tapping into young peoples' needs and taking advantage of their unique vulnerabilities. Because of adolescents' emotional volatility and their tendency to act impulsively, they are more vulnerable than adults to such techniques as real-time bidding, location targeting (especially when the user is near a point of purchase), and "dynamic creative" ads tailored to their individual profile and behavioral patterns.

Given the unique role that digital media play in the lives of young people, new strategies will be required to ensure that their privacy is enshrined as a fundamental right. One way to accomplish this is to develop a set of "Fair Information and Marketing Principles for Children and Teens," drawn from the long-established and well-recognized Fair Information Privacy Practices. These principles should take into account the unique needs and vulnerabilities of youth, and be designed to balance the ability of young people to participate fully in the contemporary media culture—as producers, consumers, and citizens—with the governmental and industry obligation to ensure they are not subjected

* Tel.: +1 202 885 2680.
E-mail address: kcm@american.edu

http://dx.doi.org/10.1016/j.telpol.2014.12.006

to unfair, manipulative, and deceptive data collection and marketing practices. In order to achieve these goals, advocacy organizations, educators, parents, scholars, and youth need to work together as part of a broad, social movement, making privacy for children and youth part of the larger policy agenda on behalf of all consumers and citizens.

1. Introduction

In 2013, the social media giant Facebook reached a major settlement with a California court (Kravets, 2012). The class-action lawsuit, filed on behalf of several teenagers and their parents, charged that Facebook's "Sponsored Stories" advertising platform invaded the teen's privacy by converting their actions regarding brands on the social network—e.g., status updates, check-ins, and "likes"—into paid ads targeted to their friends. The suit alleged that this practice violated California's Civil Code against "appropriating the names, photographs, likenesses and identities" of underage youth for commercial purposes without parental consent (Fraley et al., 2014). In addition to a multi-million-dollar payout, Facebook announced a proposed change to its "Statement of Rights and Responsibilities" and "Data Use Policy." Rather than stopping the practice of Sponsored Stories, it incorporated new language that automatically granted Facebook "permission to use your name, profile picture, content, and information in connection with commercial, sponsored or related content (such as a brand you like) served or enhanced by us" (Facebook, 2013a). The announcement sparked a protest from U.S. consumer watchdog and privacy groups, who immediately filed a complaint with the Federal Trade Commission urging the agency to reject the company's proposal on the basis that these changes would violate the terms of a 2011 Consent Decree requiring greater privacy protections and oversight (Center for Digital Democracy, 2013). Child advocates were particularly upset over a new clause pertaining to Facebook's teen users: "If you are under the age of eighteen (18), or under any other applicable age of majority, you represent that at least one of your parents or legal guardians has also agreed to the terms of this section (and the use of your name, profile picture, content, and information) on your behalf" (Rotenberg et al., 2013). In the face of public and government pressures, the company later deleted the controversial clause pertaining to teens, but kept the default approval allowing members' personal information to be used for commercial purposes (Facebook, 2013a; Goel, 2013; Guynn, 2013).

This incident is only one in a long series of controversies over Facebook's marketing and data collection practices that have placed it at the center of public policy debates over consumer privacy in the Big Data era (boyd, 2008; Hull, Lipford, & Latulipe, 2011). Facebook's meteoric rise—from a small Harvard-based website that began in 2004, to a global digital platform with a membership of 1.2 billion people a decade later—has made it one of the most profitable and high-profile corporations in today's contemporary digital culture (Goel, 2014). In its first decade of operation, the social network has been and continues to be at the forefront of innovation in the e-commerce business, developing and putting into place a series of increasingly sophisticated software applications, marketing tools, and user interfaces—all designed to maximize its ability to generate revenue by mining the interests, profiles, and behaviors of its users. As it has rolled out many of its innovations, the company has raised repeated privacy concerns—triggering consumer boycotts, regulatory actions, Congressional hearings, and lawsuits (Isidore, 2013; Johnson & Hirsch, 2009; Wheaton, 2007). In its ongoing tug-of-war with advocates, policy makers, and users, a familiar pattern has emerged: Facebook pushes the privacy envelope with a new practice or change in policy, sparking a public backlash; to assuage its critics, the company responds by appearing to dial back on the controversial technique, with CEO Mark Zuckerberg directly reaching out to users with explanations, occasional apologies, and promises to safeguard members' privacy. But often the contentious practice remerges shortly thereafter in a slightly altered form (Electronic Privacy Information Center; Facebook, 2013c; Schwartz, 2012; Zuckerberg, 2006, 2011).

Facebook is an influential leader in the rapidly growing social media ecosystem, which now includes dozens of players such as Twitter, LinkedIn, Google+, Pinterest, Instagram, YouTube, and Foursquare, to name only a few (Berthold, 2013; Freid, 2014). Though people of all ages are participating in social media, young people are among the most avid users. Ninety-five percent of U.S. youth ages 12–17 are online, outpacing adults in terms of adopting the technology (Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013). More than 80% of teens use social media, compared to 72% of users overall (Lepi, 2014). Social media have become an essential arena for personal and social development, and may well be altering some of young peoples' behavior patterns (Ahn, 2011; boyd, 2007, 2014; Subrahmanyam & Šmahel, 2012; Watkins, 2009c; Yong Zhao, Wei Qui, & Naiyi Xie, 2012). The affordances of online social networks are particularly attuned to the adolescent experience, and the dramatic rise in social media's popularity has spawned a number of academic studies focused on how key developmental tasks are addressed through engagement with social media (Bennett, 2007; Bennett, Wells, & Freelon, 2011; boyd, 2007, 2014; Greenfield, Gross, Subrahmanyam, Suzuki, & Tynes, 2006; Patchin & Hinduja, 2010; Subrahmanyam, 2008; Watkins, 2009a; Bennett, 2007).

Except for a handful of studies, mostly published in marketing journals, the growing body of academic literature on social media and youth has virtually ignored the role of marketplace forces (Khang, Ki, & Ye, 2012; Miyazaki, Stanaland, & Lwin, 2009; Shrum, Lowery, & Liu, 2009; Wang, Yu, & Wei, 2012; Wartella, Rideout, & Robb, 2009; Watkins, 2009b). Yet economic imperatives and powerful e-commerce business models are fueling the growth of these new platforms, shaping their

structures and operations, and both responding to and influencing user behaviors (van Dijck, 2013). At a surface level, social media appear primarily to serve the interests of users and their networks through information dissemination (posts, news feeds, and the like). But the expanding landscape of social networks is built upon its potential to generate billions in revenue (eMarketer, 2012). The driving force behind the growth of social media—and, indeed, all digital media—is a complex set of data collection, tracking, and targeting systems that monitor and monetize individual users' behaviors as well as their interactions with friends and acquaintances. With the growing influence of "Big Data," social media platforms are now part of an evolving integrated, ubiquitous media environment, where content, culture, and commerce are highly interconnected, reaching and engaging users across the Web, on mobile devices, and in the real world (Adobe; Acxiom; Merkle; Turow, 2013).

Youth are at the center of this new social and digital media economy. Their spending power, combined with their intense engagement with social networks, online video, mobile and interactive gaming makes them a particularly lucrative demographic group (Howell, 2013; Nielsen, 2013). Since the beginning of e-commerce in the 1990s, the advertising and new media industries have closely analyzed how young people are interacting with digital media, conducting ongoing market research, developing and refining services, and designing strategies tailored specifically to them (Montgomery, 2012; Montgomery, 2007). Digital marketers routinely amass an ongoing stream of rich and granular data for creating and refining their campaigns to target young people. (According to the 2012 Harris Poll YouthPulse study, the purchasing power of 8–24-year-olds had reached $211 billion) (Harris Interactive; Montgomery, Chester, Grier, & Dorfman, 2012) For Facebook, as with other social media companies, reaching and engaging young people is a core business strategy. When recent youth surveys indicated that Twitter and other newer social media platforms were threatening to steal teens' attention away from Facebook, investors and industry observers raised alarms that these migrations would result in declining profits for the company (Madden et al., 2014; Van Grove, 2013). But these fears were allayed when subsequent market research revealed that teens were using Facebook in significantly greater numbers than they were a year before (Albergotti, 2014; Chokkattu, 2014; Dockterman, 2014). Industry researchers have predicted that increasing penetration of smartphones will drive even more teens to Facebook (Albergotti). As a consequence, even as young people continue to embrace an ever-expanding array of new digital platforms, Facebook continues to be "the common denominator of teens' social usage" (eMarketer, 2014; Montgomery).

In the following pages, I will explain how the imperatives and practices of the Big Data era are shaping social media business operations, creating a powerful and pervasive commercial surveillance system, which is unprecedented in its scope and penetration in young peoples' lives. I will focus my analysis on Facebook, which is the most high profile social media company in today's digital media culture, and whose data-driven practices are emblematic of major trends affecting the entire industry. I will present a framework for understanding how the key features of Facebook's marketing, data collection, tracking, and targeting operations are specially attuned to key aspects of adolescent development, both tapping into young peoples' needs and taking advantage of their unique vulnerabilities. I will provide an overview of current privacy debates and policy initiatives underway in Washington, identifying those that have significant implications for both children and adolescents. And I will argue for the development of "Fair Information and Marketing Principles for Children and Teens," designed to ensure that youth continue to be beneficiaries of the digital revolution without being subjected to manipulation and exploitation.[1]

2. Facebook, big data, and the "surveillance economy"

The growth of social media platforms during the last decade has coincided with the rise of the so-called Big Data era (boyd & Crawford, 2011; Mayer-Schönberger & Cukier, 2013; Sicular, 2013). Because of the unique role that social media play in users' lives, these platforms are able to sweep up enormous amounts of information, including not only what users post about themselves, but also what is collected from them throughout their daily social interactions (Smith, 2014a,b). Recent advances in artificial intelligence research, and the growing sophistication of machines that can perform high-level thought and abstractions, have produced an expanding arsenal of analytic tools that are enhancing the ability of social media companies and their advertisers to glean valuable insights from the oceans of data they generate (Smith, 2014a,b). In today's social media (and indeed, in the entire digital media environment), an elaborate and pervasive system can track and analyze a complex range of behaviors, actions, and networked relationships taking place online and offline, and increasingly on mobile devices, which are considered one of the key drivers of data around the world (Campbell, 2011; Couldry & Turow, 2014; Dăniasă, 2010; Leonhard, 2014; Murdough, 2009; Turow, 2013; Tufekci, 2014). Vast amounts of user data are now regularly mined and stored in behavioral targeting warehouses and other databases—and used in an instant to update online-targeting profiles, part of a widespread trend that scholar Vincent Mosco refers to as "immanent commodification" (Econsultancy, 2011). The entire digital media enterprise has been structured to facilitate and maximize user interaction with brand promotion and marketing, and to enable continuous monitoring and analysis of all of these interactions in real

[1] The primary data for this research is drawn from a variety of sources, both online and off, including digital media industry reports and trade publications, government white papers, FTC filings, Congressional testimony, and advocacy group materials. The article also draws from the author's personal involvement in policy deliberations and debates, working closely with the Center for Digital Democracy and other privacy and child advocacy organizations.

time. All of these developments have created what Natasha Singer of *The New York Times* has called the "surveillance economy" (Singer, 2012).

Facebook's commercial operations are emblematic of how the principles and practices of Big Data are shaping today's contemporary media system. Not only is it allied with the most powerful data brokers in the industry—including Datalogix, Acxiom, and Epsilon—but it has also invested in data centers and advanced data viewing platforms, and has created its own in-house engineering team focused on data analysis and research (Bruich, 2013; Facebook; Lunden, 2013). The company is continually improving its data-processing capabilities, building on the already robust analysis and retrieval performance possible today using server software that drives clusters of computers (Borthakur et al., 2011; Chan, 2013; Dean & Ghemawat, 2004; Fehrenbacher, 2012; Giraph; Hadoop, 2014; Hines, 2012; Vance, 2013). This has enhanced Facebook's big data capabilities, enabling it to marry the vast amount of information it collects and analyzes on its users with third-party databases, which have been amassed from public and private sources, both online and offline (Ching, 2013; Smith, 2014).

With the bulk of its revenues coming from advertising, Facebook has created a powerful and efficient platform that fully integrates an array of highly appealing social networking functions with its data collection and targeting software applications. The system embodies two key principles that have guided the evolution of e-commerce since the 1990s. The first is the concept of "one-to-one" marketing, which means that advertising is increasingly directed at individual consumers instead of demographic groups (Peppers & Rogers, 1993). The second is the notion of "engagement," which refers to an individual's ongoing interactive relationship—cognitive, emotional, and behavioral/physical—with brands (IAB, 2014). The Facebook Platform allows outside marketers and other developers to offer their own APIs (application program interfaces), which can be integrated into the Facebook "ecosystem." The social network also conducts its own advertising efforts on the platform (Facebook Marketing Bible, 2014; Facebook Developers; Mashable; Mashable). Facebook's marketing applications, business partnerships, and tools are constantly changing, as the social media giant engages in ongoing innovation, launching new products and retooling existing ones on a regular basis.

Information about Facebook's marketing, data collection, measurement, and targeting operations can be found quite easily online, including on the company's own Developers Page and on Facebook Studio (Facebook Developers, 2014). Numerous reports, guides, and trade publications also describe the company's marketing tools, strategies, and techniques (Facebook Marketing Bible). However, while this information is readily available, it is not easy to fully understand, especially for those who are not already well versed in the lexicon of software development or the lingo of digital marketing. For the most part, the general public remains uniformed about the full extent of Facebook's commercial surveillance system.

3. Facebook's commercial platform and the adolescent experience

Below, I will identify and explain several key features of Facebook's platform, which are closely intertwined with the social practices facilitated and encouraged on the social network. Each embodies both a social function and a marketing strategy. While these features involve all of Facebook's members, they resonate particularly strongly with adolescents, who are engaged in a variety of essential "developmental tasks" in their ongoing progression into adulthood. As they begin to turn away from their families, they spend more time with peers, seeking autonomy for themselves, developing their own sense of agency, and acquiring skills for civic engagement (Bennett, 2007; Greenfield, 2008; Greenfield, Gross, Subrahmanyam, Suzuki, and Tynes, 2006; Subrahmanyam, 2008; Subrahmanyam, Garcia, Horsono, Li, & Lipana, 2009). For scholar danah boyd, social media have become "the civil society of teenage culture," one of the few spaces—in a culture dominated by helicopter parents, over-programmed schedules, and rule-bound educational institutions—where young people can freely interact with each other (boyd). Facebook has purposefully positioned itself as a necessary part of every teen's daily routine, a place for constant, repeated, and routine social engagement. Members are encouraged to check their profiles throughout the day, post updates, remain connected to friends, and participate in the ongoing cultural conversation among their peers. If a member is away from the platform for any time at all, she is beckoned back with reminders and notifications. Because they are so seamlessly woven into the Facebook experience, all of the features described below are designed not only to promote ongoing engagement, but also to foster and reward the purposeful sharing of personal information, while enabling the invisible tracking and targeting that take place "under the hood."

3.1. Curating identity

Media have always played an important role in adolescents' identity exploration and construction process, exposing teens to a wide variety of cultural role models and enabling them to explore their "possible selves" (Marcus & Nurius, 1986). Social media are particularly adept at facilitating identity construction (Subrahmanyam & Smahel). "In the online environment," explains scholar Jose van Dijck, "people want to *show* who they are; they have a vested interest in identity construction by sharing pieces of information because disclosing information about one's self is closely linked with popularity" (Mayer-Schönberger & Cukier). When teens create an online profile on Facebook (or any social networking site), they are engaging in what scholars refer to as "identity performance," where they "write themselves into being" (boyd; Livingstone, 2008; Subrahmanyam & Smahel, 2012).

Facebook's business model is designed to capitalize on this basic need, urging its marketers and developers to "curate the identity" of Facebook users, by providing tools that encourage users to post information about themselves, their interests, their likes and dislikes, their friends, and their actions (Facebook; Fisher, 2014). Among Facebook's key assets is what

industry observers refer to as the *interest graph*, "a window into what people care about," which produces a huge treasure trove of data that can be monetized. For example, users press Facebook's popular "like" button 2.7 billion times every day as they navigate across the Web, generating "more data on personal interests for its API than any other prominent social network," according to industry research (Smith). In its Identity Research and Modeling Group, Facebook's team of data scientists mines this data in order to "gain deeper insights into how people interact with the digital world" (Facebook, 2014a,b,c,d,e).

This identity function is clearly a beneficial aspect of teen involvement with Facebook as the scholarly literature cited above shows. However, the process of self discovery is also inextricably woven into the system of data collection and surveillance, which sweeps up every expression of that identity exploration, combining it with ongoing analysis of each individual's behaviors and relationships.

3.2. "Datafying" relationships

According to scholar Mizuko Ito and her colleagues, social media foster "friendship-driven" forms of participation in digital media culture, creating a sense of "being always on and engaged with one's peers," part of a "full time intimate community" where teens are engaged in a variety of practices, which can range from browsing through profiles in their "extended networks" to "more intense, ongoing exchanges among close friends and romantic partners" (Ito et al.). Such routinized social practices have brought about "transformations in the meaning of friends and friendship" (Ito et al.). As researchers Kaveri Subrahmanyam and Patricia Greenfield explain, such digitally mediated friendship patterns "have become an essential part of adolescent peer social life while leading to a redefinition of the word 'friend'" (Subrahmanyam & Greenfield).

One of the keys to Facebook's business model is that it has found a way to "datafy" these social relationships through a data analysis system called the *social graph.* "The Social Graph," Facebook CEO Mark Zuckerberg explained in a letter to investors, "represents the connections between people and their friends and interests. Every person or entity is represented by a point within the graph, and the affiliations between people and their friends and interests form billions of connections between the points" (). The network's terms of service require members to use their real names and to connect with their real friends, a feature that works well not only with the participants on the site but also with marketers wishing to take advantage of the social graph (Chester, 2011).

A study published by Facebook's research team provides a glimpse at the granularity of tracking and analysis involved in the social graph, by providing a description of a hypothetical set of user interactions that are captured by the platform's analytics. In this instance, one Facebook user ("Alice"), used her mobile phone to share her visit to a famous landmark with another user ("Bob"): "She 'checked in' to the Golden Gate Bridge and 'tagged' Bob to indicate that he is with her. Cathy added a comment that David has 'liked.' The social graph includes the users (Alice, Bob, Cathy, and David), their relationships, their actions (checking in, commenting, and liking), and a physical location (the Golden Gate Bridge)." (Bronson et al., 2014)

This brief account illustrates how the daily social interactions and movements of Facebook members are now tracked and monitored on a 24/7 basis. The information gathered through the social graph goes far beyond a member's purposeful declarations about the nature and status of his or her relationships, incorporating a range of online behaviors, locations tracked through mobile phones, and other routine actions. This monitoring and analysis of the intricacies and nuances of social relationships raises particular concerns for teens, who spend very large amounts of time online, and in many ways, conduct their friendships through social networks, largely unaware of the level and intensity of scrutiny that takes place.

3.3. Orchestrating influence

Viral marketing has been a linchpin of online e-commerce since the 1990s, especially for targeting and engaging teens (Montgomery, 2007). With the advent of social networking platforms and measurement tools, the practice has become increasingly sophisticated (Dăniasă, 2010; Fogel, 2010). Metrics designed to identify potential "brand advocates" have evolved to include data on age, gender, income, marital status, and interests, as well as how they interact and share with their social connections. All of these measures are part of what the industry calls the "fan economy." For example, 33 Across's SocialDNA platform predicts potential brand loyalists through the analysis of user behavior online (Kuchinskas, 2012). Facebook's Page Post Ads are just one of the many marketing tools on the platform that promote viral marketing, illustrating the increasingly automated process of "fanning brands" (Weekly Social Scorecard, 2012). As a popular marketing guide explains, "Page Post Ads begin as posts on a fan page but get additional paid distribution among fans, friends of fans, or non fans within News Feed or the sidebar." They can be "links, photos, videos, offers, events, questions or statuses," and "can be shown to anyone on Facebook, even if users are not connected to the page themselves or through a friend" (Darwell, 2013). Other Facebook techniques include referral apps and "refer-a-friend" techniques that reward fans by getting their friends to sign up for sweepstakes and promotions, as well as a variety of other "Fan Acquisition" and "Fan Engagement" tools that trigger and measure actions by individual consumers (Hemley, 2013). By tapping into the online social graph, marketers can orchestrate elaborate, instantaneous viral marketing campaigns, identifying the individuals who are most likely to create their own user-generated marketing messages among their wide circle of social relationships, and providing incentives to encourage brand promotion.

A recent social media marketing campaign featured on Facebook Studio described how an amusement park in Vancouver, Canada, tapped into its 65,000 Facebook fans to orchestrate a stunt involving a group of teens on its "Hot Seat" ride, whose actions were streamed live on Facebook, and inviting fans and their friends to participate in the event:

> By engaging with our site and content on Facebook, fans could choose what ride was next, answer park-related trivia for prizes, and even decide how many mini-donuts our Hot Seater would eat. Targeted promoted posts and sponsored stories delivered relevant content to the more-than-eager-to-help friends of our fans …. Our posts reached a total of 266,775 people on Facebook, generated 566,914 impressions and engaged 28,961 fans—and within a four-day period, fans and their friends created 5,188 stories (Playland Hot Seat, 2014).

These kinds of campaigns are designed to facilitate, accelerate, and in many ways automate the process of brand or product endorsement among young people whose lives and social interactions are linked and monitored online. Some of the largest snack food and soft drink brands, including Doritos and Mountain Dew, have designed sophisticated social media campaigns using Facebook and other popular platforms to promote their products (Center for Digital Democracy, 2011). Such practices are particularly problematic when used to target adolescents, for whom peer relationships are powerful and influential and may contribute to impulsive and unhealthy behaviors (Leslie, Levine, Loughlin, & Pechmann).

3.4. Storytelling

Marketers see storytelling as fundamental to their strategies for engaging customers with brands (Christina Gleason, 2012). Facebook has positioned itself as an essential tool for enabling users to tell and share the "stories" of their own lives—ranging from moment-to-moment "status updates," to chronicles of daily activities, to documentation of the major (and minor) events of a person's entire life (Facebook, 2012a). Ahn, 2011 the company unveiled a major and far-reaching redesign of its site called "Timeline," which changed the default on a user's profile from a list of one's most recent updates to a more comprehensive, chronological account of the individual's life story, including photos, videos, status updates, and locations visited by the user. Timeline uses an algorithm to identify and highlight the most important moments in one's life. If information is unavailable, or events occurred prior to membership on Facebook, users are prompted to fill in the missing information (Facebook, 2014a,b,c,d,e). Timeline is presented to users as a tool to help them record and share memories and events with their friends, which can be particularly appealing to teens. However, the online digital scrapbook is actually designed to help the social network cement lifelong relationships with its marketing partners, deepening user profiles, and offering an ongoing stream of additional data about individual's lives (Facebook).

3.5. Facilitating and tracking mobility

Mobile phones are yet another tool for gaining autonomy from family, enabling teens to be untethered from restrictions at home. Teens remain quintessential early adopters in their use of mobile phones, avidly embracing a variety of Web applications and communication tools (Friedman, 2014). Many lower-income teens are much more likely than other young people to use their mobile phones as the primary means to access the Internet (Christian, Keeter, Kristen, & Smith, 2010; Fire Engine Red, 2014; Lenhart, Ling, Campbell, & Purcell, 2010).

Facebook's mobile app makes the social networking experience seamless, allowing young people to remain in constant contact throughout their daily routines. Mobile has ushered in a range of new marketing practices that were not possible before, including geotargeting, which enables marketers to identify and target individuals in real time based on their location (Blank, 2013). Facebook has become a major promoter of mobile and gaming apps, creating a myriad of data-driven ways for those developers to identify and then target potential customers on its platform (Shepard, 2011). "App developers can now reach and reengage their current user base even if they have not registered with the mobile app upon installing it," explained a marketing guide. "For example, a retailer can reach and engage a person on Facebook who installed their mobile app and browsed particular products, but who may not have necessarily registered their email address or phone number with the retailer" (Morris, 2013).

Facebook has made significant investments to enhance its capacity for mobile data collection and targeting (Goel, 2013). Its expansion onto mobile devices has not only increased revenues substantially, but also extended its reach even more deeply into the lives of young people, who can now be followed and targeted continuously.

4. The expanding Facebook marketing apparatus

The above features are only a part of Facebook's elaborate and sophisticated marketing system, with new products and software applications being introduced almost daily (Internet Advertising Bureau UK, 2011). As the company's 2014 Annual Report explains, this system "manages our entire set of ads, the selected audiences, and the marketers' bids to determine which ads to show each person and how to display them for every page on Facebook" (Facebook, 2014a,b,c,d,e). The EdgeRank algorithm illustrates how this works. eConsultancy, a digital marketing information company, describes EdgeRank as "one of the most important algorithms in marketing" (Newman, 2012). Every interaction a user has with Facebook creates a piece of content known as an "Edge." So, for example, uploading a photo or liking a status update are "edges" that can be

carefully measured and given a weight based on their value to marketers. This algorithm determines which items appear in a user's News Feed (What is EdgeRank). As the company explains, "the newsfeed isn't really a feed of news, instead it's a chart of the most 'important' Edges which are determined by the EdgeRank Algorithm" (Newman). Through Facebook Connect, users are encouraged to keep signed in regardless of where they are and what device they may be using (BBDO Proximity). Facebook Exchange (FBX) enables Facebook advertisers to tap into large stores of information from third-party data brokers, link that information to what Facebook has collected from users, and target specific individuals not only on the social networking platform, but also on other sites and on their mobile devices (Rodgers, 2012; Facebook, 2012b; Heussner, 2012). Through an automated process known as "real-time bidding," individual users are assigned a value based on their behaviors and other profile attributes, allowing marketers to purchase an opportunity to reach the individual with a targeted ad. All of this happens in milliseconds without the user's knowledge of the process (Elmeleegy et al., 2013). Marketers can also engage in "retargeting," which uses sophisticated data analysis to monitor a user's reaction to an ad, "learns" from the reaction, follows the user's online or mobile movements, and delivers another ad in "real time" with altered content (known as "dynamic creative") specifically designed to appeal to that individual (Cutts, 2014). Facebook's heavy investment in facial recognition technologies will ensure that marketers are able to identify and target individuals through the photos they have posted of themselves, as well as images in pictures posted online by their friends (Electronic Privacy Information Center, 2012; Federal Trade Commission, 2012a,b,c,d,e).

4.1. Youth's vulnerability to social media marketing

The growth of data collection and measurement in digital and social media is far outpacing our ability to understand what this system is and how it works. Because most of these software applications and measurement tools are proprietary, they are likely to remain inaccessible to the research and policy communities, except for highly technical articles or brief mentions that appear in trade publications and industry reports. Most users, who are focused on their social experiences in the online environment, are likely to remain largely uninformed about the nature and extent of commercial surveillance on social networking platforms. These practices have already been woven inextricably into the fabric of the new media culture, operating with very little transparency or public accountability. The breadth and depth of information currently generated through these new data collection and measurement tools are unprecedented, and promise to become even more extensive in the near future.

While these trends should raise concerns for all social media users, they have particularly important implications for young people (Institute for Public Representation, 2012). For most of them, engagement with social media has become an integral part of growing up; their experiences on Facebook and other social media platforms are influencing their behaviors, social norms, and internalized expectations. Yet, precisely at the times in their lives when they are forging their own identities, navigating their social worlds, and developing their abilities to form and sustain lasting relationships, their personal and social interactions are increasingly shaped and facilitated by the forces of the new digital marketplace.

Though young people possess the tools and skills for navigating the social media environment, they lack some of the critical capacities needed for responding effectively to the marketing and data collection apparatus. In the highly commercialized social media landscape, the very features that resonate so strongly with adolescent needs—for identity, peer relationships, and autonomy—also expose them to techniques that may be particularly manipulative and unfair to this age group. Because the part of the brain that controls inhibitions does not fully mature until late adolescence or early adulthood, teens are inclined to behave impulsively and often do not think about the consequences of their actions before taking them, even in situations that involve considerable risk (Collins et al., 2007; Committee on the Science of Adolescence, Board on Children, Youth, and Families, of the Institute of Medicine and National Research Council, 2011; Giedd, 2008; McAnarney, 2008; McCreanor, Barnes, and Gregory, 2005; Steinberg, 2007, 2008). They are easily influenced by peer pressure, and they experience greater emotional volatility than either younger children or adults, including frequent and intense negative emotions and fewer positive emotions. Many of the core strategies employed by social media marketers are designed to tap directly into these vulnerabilities. Teens are particularly susceptible to peer endorsements because influence by peers is such a critical component in their formation of opinions and values (Pechmann et al.). Because of adolescents' emotional volatility and their tendency to act impulsively, they are also more vulnerable than adults to such techniques as real-time bidding, geolocation targeting (especially when an individual is near a point of purchase), and "dynamic creative" ads tailored to their individual profiles and behavior patterns.

4.2. Facebook's evolving privacy practices

In response to ongoing controversies over its marketing and data collection practices, Facebook has developed an elaborate set of internal privacy policies and user agreements, providing settings and other tools to enable users to choose how much of their personal information they want to share on the platform and with whom. (van Dijck; Lee, 2013; boyd, 2008a,b) However, the company has made repeated, and often confusing, changes in its privacy policies, underscoring its conflict between protecting consumers and maximizing revenues (Bowen, 2011; Facebook, 2013a,b,c; Steel & Fowler, 2010; Schulmann, 2011). According to Facebook statistics, 469 million active users accessed Facebook through their mobile devices in the third quarter of 2013, with 101 daily million mobile users from the U.S. alone (Constine, 2013). Surveys suggest that many teens use privacy settings on Facebook and other social media, often in greater numbers than other age groups (danah

boyd & Eszter Hargittai, 2010; boyd). However, teens are also placing more and more personal information about themselves online. A recent report from the Pew Internet & American Life Project, for example, found that while "60% of teen Facebook users keep their profiles private, and most report a high level of confidence in their ability to manage their settings," many are posting significantly more personal content about themselves than they were a few years ago—including photos, email addresses, school names, home towns, and cell phone numbers—and sharing that information with larger networks of "friends" (Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013; Madden, 2013a,b). While these findings may appear contradictory, they begin to make sense when understood in the context of young peoples' developmental needs and vulnerabilities. Continuous posting, updating, and sharing are rewarded on social networks, all behaviors that teens enjoy doing anyway. Moreover, many think they have more control in the social media environment than they actually do. According to scholar Frances Leslie and her colleagues, teens are prone to believe that privacy is a risk for others but not for themselves. This "third-party" attitude "could make them less likely to see a need to utilize privacy settings and thus increase the likelihood that their private information will be available to marketers with little effort" (Leslie, Carmody, & Pechmann, 2011).

Most of the public discourse concerning teen privacy on social media has been shaped by longstanding concerns over online safety, thus the focus has been primarily on controlling the personal information that young people choose to place on their profiles and enabling them to restrict access by other users to these profiles (Berkman Center for Internet and Society, 2008; Livingstone, Ólafsson, & Stasrud, 2011; Marwick & boyd, 2014; Zuckerberg, 2011). But what tends to be ignored in these discussions are the largely invisible tracking and data mining techniques at the heart of Facebook's marketing operations. While many youth may be aware of how users voluntarily provide personal profile information, status updates, "likes," etc., they may not realize that much of the data collection on Facebook takes place without direct user involvement or control of how their personal information is used. A survey of 18–24-year olds found that while young adults (and, by implication, their younger counterparts) care about their personal privacy, they remain largely uniformed about the extent and nature of data collection and profiling that take place in the online social spaces that have become so naturalized for them. The study found a "gap in privacy knowledge" that may explain "the apparent license with which the young behave online," concluding that "young-adult Americans have an aspiration for increased privacy even while they participate in an online reality that is optimized to increase their revelation of personal data" (Hoofnagle, King, Li, & Turow, 2010).

5. Current online privacy policy in the U.S.

At the present time there are few effective governmental policies for protecting the privacy of U.S. consumers in the digital marketplace. In contrast to the European Union, where privacy is a right and robust data protection laws have been enacted, privacy regulation in the U.S. is sectorial, with separate laws for different types of information, users, and situations, such as financial or medical privacy (Solove & Hartzog, 2014; Bennett, 1997).[2] Since the emergence of e-commerce in the mid-1990s, consumer and privacy groups have waged an ongoing campaign for broader privacy legislation to address the increasingly pervasive data collection, profiling, and targeting in today's digital marketplace (EPIC, 2014). In the wake of recent revelations by whistle-blower Edward Snowden that the U.S. National Security Agency was conducting widespread electronic surveillance on its own citizens and those of other countries, the public debate over online privacy has grown even more intense (Bauerlein & Jefferey, 2013; Peterson, 2014). In February 2012, the White House called for the enactment of privacy legislation based on a proposed Consumer Privacy Bill of Rights. The proposal was designed to provide a "comprehensive blueprint to improve consumers' privacy protections," while at the same time, ensuring that "the Internet remains an engine for innovation and economic growth" (White House, 2012) The U.S. has also been under pressure from the European Union to enact comprehensive privacy legislation, in order to bring it into alignment with the EU's data protection framework. However, there has been strong opposition to enactment of such legislation coming from the U.S. business interests; with online data collection one of the country's most innovative and vital industries, policymakers are also reluctant to do anything that might undermine one of the few bright spots in the American economy (Timberg, 2013). Efforts to promote technical solutions such as a "Do Not Track" regime have failed to gain traction (Ed Bott, 2012; Miners, 2014). Despite years of Congressional hearings, Federal Trade Commission workshops, and White House initiatives, online privacy remains largely unregulated (Solove & Schwartz, 2008, 2011).

In the absence of a comprehensive law, consumer and privacy advocates have relied on a range of tactics to hold industry accountable—documenting problematic marketing and data collection practices, filing numerous complaints with federal regulators, and appealing to the courts. Facebook has been a frequent target of these legal actions (Cohen, 2014; Protalinski, 2012). For example, in, 2011, the Federal Trade Commission settled an investigation of Facebook instigated by a coalition of privacy advocacy groups. The complaint accused the social network of deceiving consumers by making a number of promises to protect privacy that it did not keep, including changing the website to make information public that users had requested to remain private; providing third-party app developers with access to personal data without informing users; and sharing information with advertisers that the social network had promised not to share. The consent decree settlement

[2] A review of the data broker industry: Collection, use, and sale of consumer data for marketing purposes. Staff report for Chairman Rockefeller, Senate Committee on Commerce, Science, and Transportation, December 18, 2013.

required the company to establish new privacy protections and to institute a bi-annual independent, third-party audit of its practices for the next 20 years (Federal Trade Commission, 2011).

Except for these individual cases of disciplinary actions against specific corporations, however, the U.S. advertising and online industries have operated since the 1990s under a system of self regulation, instituting a series of programs over the past several decades—which have included published guidelines and "safe harbor" labeling systems—designed to allay public concerns and placate government regulators. However, consumer and privacy advocates have found many of these programs to be limited in their ability to protect users because of vague language, inadequate enforcement mechanisms, and limited market penetration (Center for Digital Democracy; Gellman & Dixon, 2011; Hoofnagle, 2005).

The only exception to this self-regulatory regime is in the area of child consumer protection. The Children's Online Privacy Protection Act (COPPA) was enacted in 1998, modeled in part on a tradition of television advertising guidelines.[3] These were based on child developmental research and media effects studies documenting a variety of cognitive limitations that make young children vulnerable to advertising (John, 1999; Kunkel, 1990). COPPA applies primarily to commercial websites that target children under 13, limiting the collection of personal information, providing a mechanism for parental involvement, and placing obligations on companies for adequate disclosure and protection of data (COPPA—Children's Online Privacy Protection Act, 2014). Though the law's passage preceded by more than a decade the growth of Facebook, MySpace, Twitter, and YouTube, it was purposely designed to adapt to changes in both technology and business practices, with periodic reviews by the Federal Trade Commission to ensure its continued effectiveness (Federal Trade Commission, 2010).

Several years ago, at the urging of child advocates, privacy groups, and health experts, the FTC conducted a comprehensive review of the COPPA rules, releasing a revised set of regulations that update and clarify COPPA's basic safeguards. These new regulations, which became effective in 2013, add new protections specifically designed to address a wide range practices on social media, mobile, and other platforms (Federal Trade Commission, 2012a,b,c,d,e). Among the new provisions is an expanded definition of "personal information," which now encompasses a variety of ways that companies can use to identify and contact individual children, such as geolocation, photos, and videos, as well as online tracking devices and other "persistent identifiers" that follow an individual child's behavior and online movements. While companies can still place advertising and marketing on child-directed websites or other digital media, the updated regulations restrict the use of advertising messages that are tailored to an individual child. The new rules also require more granular and user-friendly privacy policies, identifying in clear language what kinds of information the site collects, how the information is used, and whether it is shared with other companies. If a children's online content provider allows other companies to collect personal information from a child visitor, the names of these third parties collecting information must be disclosed as well (Bureau of Consumer Protection, 2014).

None of these safeguards, however, applies to teens, who have been largely left out of public policy debates and self-regulatory industry programs (McGinnis, Gootman, & Kraak, 2005). Privacy and children's advocates have made some headway in educating policy makers about the special needs and vulnerabilities of adolescents, including language that has been included in several official filings and reports pertaining to youth under 18 (Institute for Public Representation, 2010). For example, the Federal Trade Commission incorporated teens into its privacy policy framework, identifying them as "sensitive users" who should be treated with special care (Federal Trade Commission, 2012a,b,c,d,e; Markey & Barton, 2012). The White House's Consumer Privacy Bill of Rights identifies both children and adolescents as deserving of special safeguards (The White House, 2012). However, with the exception of some state legislation, most of these proposals have not been enacted (Federal Trade Commission, 2012a,b,c,d,e). A bill was introduced in Congress that would establish a separate set of safeguards for teens in the Children's Online Privacy Protection Act, including an "eraser button" that would give teens the right to delete material they have posted about themselves online (H.R. 2014). Though the legislation has not gotten much traction, a law was recently passed in the state of California that includes some of the same provisions (Somini Sengupta, 2013).

5.1. *Facebook and young children*

Because the Children's Online Privacy Protection Act requires verifiable permission from a child's parent before engaging in collection of personal data, many online services created for general users, including Facebook, have opted out of having to deal with the regulations altogether by not permitting children under 13 to access their platforms (Facebook, 2014a,b,c,d,e). Yet, several surveys have found that 5 million children 12 and under are already active users on Facebook (Bartz, 2012). One of the flaws in the COPPA law is that it is very easy for children to lie about their age, and this may well be the case with those who have managed to set up profiles on Facebook. A number of media scholars and experts have raised concerns that Facebook's current policy causes many of these children to falsify their information, and forces parents to lie about their children's ages in order to connect them to family and friends. Many parents want to include their children on Facebook and some experts argue that children would be safer if they were allowed to register officially for the platform where they would benefit from Facebook's cyberbullying and other teen-safety policies (Magid, 2012).

[3] The author was one of the principal architects of COPPA during the 1990s and has been involved in regulatory proceedings and Congressional hearings regarding the law's implementation since it was passed in 1998.

A 2012 article in the *Wall Street Journal* suggested that Facebook might be planning to open its platform to children under 13 (Troianovski & Raice, 2012). Child advocacy, health, and consumer groups have raised serious objections to allowing young children on the social networking platform (Center for Digital Democracy, 2012; O'Keeffe, 2012). Their concern is that even if Facebook set up a mechanism to obtain parental permission, neither the platform's own privacy settings nor the recently updated COPPA rules would offer sufficient protection from the extensive data collection practices and aggressive marketing techniques on the social network (Facebook, 2014a,b,c,d,e). While Facebook has made no subsequent moves suggesting it might begin allowing children on its platform, Google announced in 2014 that it was considering opening its service to younger users (Barr & Winkler, 2014). To date, neither Facebook nor Google has taken any further action to expand into the children's market.

5.2. Balancing participation and privacy for children and teens

Given the unique role that digital media play in the lives of children and youth, new strategies will be required to ensure that young people's privacy is enshrined as a fundamental right. One way to accomplish this is to develop a set of "Fair Information and Marketing Principles for Children and Teens," drawn from the long established and internationally recognized Fair Information Privacy Practices (United States Senate, 2010). These principles should take into account the unique needs and vulnerabilities of youth, and be designed to balance the ability of young people to participate fully in the contemporary media culture—as producers, consumers, and citizens—with the governmental and industry obligation to ensure they are not subjected to unfair, manipulative and deceptive data collection and marketing practices.

These principles should call for responsible industry-wide practices, designed to empower both young people and their parents to have a meaningful say in what information marketers collect from children and how they use it. Policies should be developed that make distinctions between practices directed at younger children and those used with adolescents, drawing from the developmental literature on each of these stages of childhood. Further adjustments will also need to be made in some of our current regulatory approaches. For example, COPPA's parental permission mechanism is a necessary but increasingly insufficient safeguard for addressing the range of sophisticated data-driven practices on Facebook and other social media. The updated children's privacy rules have identified data profiling, behavioral advertising, cross-platform tracking, and geolocation targeting as problematic practices. However, under the present COPPA regime, online companies may engage in these practices, as long as they get parental permission. Based on the psychological and social developmental literature, such techniques should not be used to target children at all, whether parents give permission or not (Federal Trade Commission, 2012a,b,c,d,e). While they should have control over what their young children do online, parents cannot be expected to understand the sophisticated and often opaque operations employed in today's state-of-the-art digital marketplace, or the risks posed by them.

Unlike younger children, teenagers are at a stage in their lives when they need to establish autonomy for themselves, and to seek opportunities for exploring their own unique identities, forging and defining friendships, and finding their voice in the broader social and political discourse. While some elements of COPPA could serve as a useful model for adolescent online privacy policy, the mechanism for parental approval would not be appropriate or advisable for this age group. Consumer and privacy groups have tried to strike a balance between participation and protection in their efforts to insert the special needs of adolescents into policy deliberations (Comments of the Center for Digital Democracy, 2014). Public policies designed to protect teen privacy and safety, and shield them from unfair and manipulative marketing, should not restrict their access to these participatory digital platforms.

The "privacy by design" model, which has been proposed by the U.S. and Canadian policy makers, calls for best practices and other safeguards to be built into the operations of digital media companies. (Federal Trade Commission, 2012a,b,c,d,e) This idea could be useful for incorporating privacy and marketing protections into Facebook and other social media platforms. Facebook already has an internal system for addressing teen safety concerns, which includes setting defaults for the levels of friend connections that may be included in a teen's social network, establishing mechanisms for handling cyberbullying, and limiting exposure to some forms of inappropriate content (Facebook, 2014a,b,c,d,e). Given the sophisticated capabilities of its measurement and targeting software, there is no reason why Facebook could not add to its default mechanisms some limits on certain data collection and marketing techniques that take advantage of young people's developmental vulnerabilities. These could include, for example: personalized ads, retargeting, and real-time "dynamic creative" designed to foster impulsive actions; viral marketing techniques that exploit young teens' vulnerability to peer influence; and geolocation practices that use teen mobile phones track and target them near retail stores. Nor should it be that difficult to institute limits on the types and amounts of personal and behavioral data collected from youth under 18 (Federal Trade Commission, 2012a,b,c,d,e). None of these measures would need to restrict teen access to the platform or their ability to communicate with friends and participate in public discourse.

Without sustained public and government pressure, however, it is doubtful whether Facebook or any of the other popular social media companies would develop such initiatives on their own. One of the major challenges that privacy advocates and policy officials face is that the operating principles and practices of big data are in sharp contradiction to some of the fundamental pillars of privacy protection (OECD, 2014). For example, big data relies on data maximization instead of minimization, and routinely uses data for purposes that are different from those used in the collection of the data in the first place (Mayer-Schönberger & Cukier). Just as public policies have been necessary to mitigate the harmful

environmental impacts of "big oil," consumer protection and privacy laws will ultimately be necessary to ensure sufficient safeguards from the excesses of "big data" (Electronic Privacy Information Center, 2014).

In order to achieve these goals, advocacy organizations, educators, parents, scholars, and youth need to work together as part of a broad, social movement. Privacy for children and youth needs to be part of a larger policy agenda on behalf of all consumers and citizens. Boycotts, campaigns, and class action suits against individual companies can be effective ways to raise public awareness and address specific practices that raise serious privacy concerns. Both the legal battle over Facebook's Sponsored Stories and an earlier effort against a similar advertising program called Beacon were ultimately successful in getting the company to cease these particular practices (Vijayan, 2009; Wagner, 2014). Austrian law student Max Schrems filed a lawsuit in Europe against Facebook, forcing the company to release a massive amount of data collected from him. The initial suit grew into an international campaign that has generated widespread attention. While it is uncertain whether these efforts will result in any substantive policy changes at the company, they may lay the groundwork for a broader privacy rights movement (Europe versus Facebook, 2014a,b,c,d,e).

Finally, schools, nonprofits, and other institutions must ensure that youth are adequately informed and educated about digital media's commercial operations. A promising approach is the idea of promoting "digital policy literacy," which is aimed at ensuring that young people will understand the communication policy process, the political economy of media, and the technological infrastructures of media institutions (Shade & Shepherd, 2013; Tsukayama, 2013). Such programs could help ensure that children grow up to be more effective and empowered participants in the digital economy. Because the digital media system is still in an early stage of development, we have both an opportunity and an obligation to engage in a public conversation about how it can best be harnessed as a positive force in the lives of children and teens, while ensuring that the growing power of e-commerce does not undermine that potential. Engaging young people in that conversation will help ensure that they are treated with fairness and dignity in the growing digital marketplace, and socialized to be responsible consumers and citizens who embrace their rights to privacy.

Acknowledgements

The author would like to thank the following individuals for their help with research and preparation for this article: Jeff Chester, Gary O. Larson, Tatevik Sargsyan, Jamie Schleser, and Isabelle Zuagg. Part of this research was conducted with funding from the Robert Wood Johnson Foundation's Healthy Eating Research Initiative, Grant 68238.

References

Acxiom. *Multichannel, multi-targeted engagement*. http://www.acxiomdigital.com/services/targeted-advertising.asp; viewed 16.04.14.

Adobe. *Adobe social*. ⟨http://www.adobe.com/solutions/social-marketing.html⟩; viewed 16.04.14.

Ahn. *The effect of social network sites on adolescents' social and academic development* (p. 1439).

Ahn, June (2011). The effect of social network sites on adolescents' social and academic development: Current theories and controversies. *Journal of the American Society for Information Science and Technology, 62* (8), 1435–1445.

Albergotti, Reed (2014). Survey: Teens say they are using Facebook more. *Digits Blog*. ⟨http://blogs.wsj.com/digits/2014/06/24/survey-teens-say-they-are-using-facebook-more/⟩; viewed 20.10.14.

Albergotti. *Survey: Teens say they are using Facebook more*.

Apache Giraph. *Welcome to Apache Giraph*! ⟨http://giraph.apache.org/⟩; viewed 17.04.14.

Ashlee Vance. Inside the arctic circle, where your Facebook Data Lives. *Businessweek*, 4 October 2013; ⟨http://www.businessweek.com/articles/2013-10-03/facebooks-new-data-center-in-sweden-puts-the-heat-on-hardware-makers⟩; viewed 17.04.14.

Barr, Alistair, & Winkler, Rolfe (2014). Google is planning to offer accounts to kids under 13. *Digits*, 18 August 2014. ⟨http://blogs.wsj.com/digits/2014/08/18/google-moves-to-target-kids-under-13/⟩; Viewed 20.10.14.

Bartz,Diane (2012). Why are 5 million kids on Facebook if it doesn't want them? *Reuters*, 19 September 2012. ⟨http://www.reuters.com/article/2012/09/19/us-facebook-children-idUSBRE88I1G620120919⟩; both viewed 17.04.14.

Bauerlein, Monika, & Jeffery, Clara (2013). Where Does Facebook Stop and the NSA Begin? *Mother Jones*, November/December 2013. ⟨http://www.motherjones.com/media/2013/10/facebook-personal-data-online-privacy-social-norm⟩; viewed 20.10.14.

BBDO Proximity. *Facebook's timeline era*. ⟨http://www.scribd.com/doc/86331569/Facebook-s-Timeline-Era-Managing-Your-Brand-Through-Facebook-s-Evolution⟩ (purchase required).

Bennett, Colin J. (1997). *Convergence revisited: Toward a global policy for the protection of personal data?* In Phillip. In E. Agre, & Marc Rotenberg (Eds.), *Technology and privacy: The new landscape* (p. 113). Cambridge, MA: MIT Press.

Bennett, W. Lance (Ed.) (2007). *Civic life online*. MIT Press.

Bennett, W. L., Wells, C., & Freelon, D (2011). Communicating citizenship online: Models of civic learning in the youth web sphere. *Journal of Communication*, *61*(5), 835–856.

Berkman Center for Internet and Society 2008. *Enhancing child safety and online technologies*. Final Report of the Internet Safety Technical Task Force. ⟨http://cyber.law.harvard.edu/pubrelease/isttf/⟩.

Berthold, Jonathan (2013). Social media landscape. *Slide Share*, 25 October 2013. ⟨http://www.slideshare.net/j_bertho/social-media-landscape-27575638⟩; viewed 15.04.14.

Blank, Christine (2013). Mobile makeover. *QSR*, June 2013. ⟨http://www.qsrmagazine.com/exclusives/mobile-makeover⟩; "Facebook Unveils New 'Nearby Friends' Geolocation Meetup," 17 April 2014. featurehttp://appleinsider.com/articles/14/04/17/facebook-unveils-new-nearby-friends-geolocation-meetup-feature (both viewed 18.04.14).

Borthakur, Dhruba, et al. (2011). *Apache Hadoop goes realtime at Facebook*. June 2011. ⟨http://borthakur.com/ftp/RealtimeHadoopSigmod2011.pdf⟩ viewed 17.04.14.

Bowen, Jeff (2011). Platform updates: New user object fields, Edge.remove Event and More. *Facebook Developer Blog*, 14 January 2011; ⟨https://developers.facebook.com/blog/post/2011/01/14/platform-updates–new-user-object-fields–edge-remove-event-and-more/⟩. The *Wall Street Journal* has reported that popular applications were transmitting certain identifying information to advertisers.

boyd, danah (2008a). Facebook's privacy trainwreck: Exposure, invasion, and social convergence. *Convergence, 14* (1), 13–20. ⟨http://www.danah.org/papers/FacebookPrivacyTrainwreck.pdf⟩; viewed 17.04.14; Electronic Privacy Information Center, "Facebook Privacy," ⟨http://epic.org/privacy/facebook/⟩; viewed 17.04.14.
boyd, danah (2008b). Facebook's Privacy Trainwreck: Exposure, Invasion, and Social Convergence. *Convergence* 14 (1), 13–20. ⟨http://www.danah.org/papers/FacebookPrivacyTrainwreck.pdf⟩; viewed 17.04.14.
boyd, *Why youth (heart) social network sites* (p. 134).
boyd, *It's complicated: The social lives of networked teens* (pp. 29–53).
boyd. *It's complicated: The social lives of networked teens* (pp. 1–25).
boyd. Why youth (heart) social network sites.
boyd. *Why youth* (*heart*) *social network sites* (p. 129).
boyd & Hargittai, Facebook privacy settings: Who cares?; boyd, danah, Hargittai, Eszter, Schultz, Jason, & Palfrey, John .Why parents help their children lie to Facebook about age: Unintended consequences of the Children's Online Privacy Protection Act. *First Monday* 16 (11), 07.11.11. ⟨http://firstmonday.org/ojs/index.php/fm/article/view/3850/3075⟩; both viewed 20.10.14.
Brittany Darwell (2013). Understanding the difference between Facebook sponsored stories, Page Post Ads, Promoted Posts and Marketplace Ads. Inside Facebook, 11.01.2013. ⟨http://www.insidefacebook.com/2013/01/11/understanding-the-difference-between-facebook-sponsored-stories-page-post-ads-promoted-posts-and-marketplace-ads/⟩; viewed 16.04.14.
Bronson, Nathan, Amsden, Zach, Cabrera, George, Chakka, Prasad, Dimov, Peter, Ding, Hui, et al., Facebook, Inc. TAO: Facebook's distributed data store for the social graph. In *2013 USENIX annual technical conference*. ⟨https://www.usenix.org/conference/atc13/technical-sessions/presentation/bronson⟩; Viewed 16.04.14.
Bruich, Sean (2013). Q&A with Facebook Head of Measurement Research Development and Partnerships. Inside Facebook, 14 February 2013. ⟨http://www.insidefacebook.com/2013/02/14/qa-with-facebook-head-of-measurement-research-development-and-partnerships-sean-bruich/⟩; viewed 15.04.14.
Bureau of Consumer Protection. *Children's privacy*. ⟨http://www.business.ftc.gov/privacy-and-security/childrens-privacy⟩ (viewed 21.10.14.
Campbell, C. (2011). Tracking back-talk in consumer-generated advertising—An analysis of two interpretative approaches. *Journal of Advertising Research*, *51* (1), 224.
Center for Digital Democracy (2011). *Report: Digital food marketing to children and adolescents: Problematic practices and policy interventions*. October 2011. ⟨http://digitalads.org/how-youre-targeted/publications/report-digital-food-marketing-children-and-adolescents-problematic⟩; Viewed 16.04.14.
Center for Digital Democracy (2012). Groups: Facebook space for pre-teens must protect privacy, be ad-free & marketing free. 18.06.12. ⟨http://www.democraticmedia.org/groups-facebook-space-pre-teens-must-protect-privacy-be-ad-free-marketing-free⟩; viewed 17.04.14.
Center for Digital Democracy (2013). Groups ask the FTC to take a closer look at how Facebook's recent proposed privacy changes will negatively impact teens. 17 September 2013. ⟨http://www.democraticmedia.org/groups-ask-ftc-take-closer-look-how-facebook%E2%80%99s-recent-proposed-privacy-changes-will-negatively-impac⟩; Viewed 15.04.14.
Center for Digital Democracy (2013). U.S. online data trade groups spin digital fairy tale to USTR about US consumer privacy prowess—CDD says privacy out of bounds in TTIP. 29 May 2013. ⟨http://www.democraticmedia.org/us-online-data-trade-groups-spin-digital-fairy-tale-ustr-about-us-consumer-privacy-prowess-cdd-say-0⟩; viewed 16.04.14.
Chan, Lydia (2013). Presto. Interacting with petabytes of data at Facebook. *Facebook*, 6 November 2013, ⟨https://www.facebook.com/notes/facebook-engineering/presto-interacting-with-petabytes-of-data-at-facebook/10151786197628920⟩; *Under the hood: Scheduling MapReduce jobs more efficiently with corona*. ⟨https://www.facebook.com/notes/facebook-engineering/under-the-hood-scheduling-mapreduce-jobs-more-efficiently-with-corona/10151142560538920⟩; viewed 17.04.14.
Ching Avery (2013). *Scaling Apache Giraph to a trillion edges*. 14 August 2013. ⟨https://www.facebook.com/notes/facebook-engineering/scaling-apache-giraph-to-a-trillion-edges/10151617006153920⟩; Viewed 17.04.14.
Cheryl, Morris (2013). Mobile marketers: Supercharge targeting with Facebook's new custom audience solution—App user IDs. *Nanigans*, 21 May 2013. ⟨http://www.nanigans.com/2013/05/21/mobile-ad-targeting-facebook-custom-audiences-app-user-ids/⟩; Viewed 16.04.14.
Chester, Jeff (2011). Facebook tells biggest advertisers: 'Before Facebook the Web was Like a Masked Ball… 3 Social Graphs within Facebook. 7.10.11. ⟨http://www.democraticmedia.org/facebook-tells-biggest-advertisers-facebook-web-was-masked-ball3-social-graphs-within-facebook⟩; Viewed 16.04.14.
Chokkattu, Julian (2014). Study finds teens using Facebook more. *TechCrunch*. 24 June 2014. ⟨http://techcrunch.com/2014/06/24/study-finds-teens-using-facebook-more/⟩; viewed 20.10.14.
Christian, Leah, Keeter, Scott, Kristen, Purcell, & Smith, Aaron, (2010). *Assessing the cell phone challenge*. Pew Research Center, 20 May 2010. ⟨http://pewresearch.org/pubs/1601/assessing-cell-phone-challenge-in-public-opinion-surveys⟩; viewed 23.02.11.
Cohen, David (2014). Privacy groups file FTC complaint vs. Facebook–WhatsApp deal. *AllFacebook*, 6 March 2014. ⟨http://allfacebook.com/ftc-complaint-whatsapp_b129849⟩; viewed 21.10.14.
Comments of the Center for Digital Democracy, et al., *In the matter of a preliminary FTC Staff report on protecting consumer privacy in an era of rapid change: proposed framework for business and policymakers*. Institute for Public Representation, filing with the Federal Trade Commission concerning "Online Behavioral Advertising Principles"; Kathryn C. Montgomery, Ph.D., "*Before the subcommittee on consumer protection, product safety, and insurance. committee on commerce, science, and transportation. United States Senate. Hearing: An Examination of Children's Privacy: New Technologies and the Children's Online Privacy Protection Act*. April 29, 2010," ⟨http://www.centerfordigitaldemocracy.org/sites/default/files/KMSenateTestimony042710.pdf⟩; viewed 17.04.14.
Committee on the Science of Adolescence, Board on Children, Youth, and Families, of the Institute of Medicine and National Research Council. *The science of adolescent risk-taking: Workshop report*. Washington, DC: The National Academies Press, 2011.
Constine, Josh (2013). Facebook reveals 78% of US users are mobile as it starts sharing user counts by country. *TechCrunch*, 13 August 2013. ⟨http://techcrunch.com/2013/08/13/facebook-mobile-user-count/⟩; Viewed 17.04.14..
COPPA—Children's Online Privacy Protection Act. ⟨http://www.coppa.org/⟩; viewed 16.04.2014; Montgomery, *Generation Digital* (pp. 67–106).
Couldry, Nick, & Turow, Joseph (2014). Advertising, Big Data, and the clearance of the public realm. *International Journal of Communication*, *8*, 1710–1726.
Craig Timberg, U.S. firms, officials resisting Europe's push for stronger digital privacy rules," *Washington Post*, 24 January 2013, ⟨http://www.washingtonpost.com/business/economy/us-firms-officials-resisting-europes-push-for-stronger-digital-privacy-rules/2013/01/24/1ae712e6-61ab-11e2-b05a-605528f6b712_story.html⟩; viewed 20.10.14.
Craig Watkins, S. (2009a). *The young and the digital*. Boston: Beacon Press.
Cutts, Laurie (2014). Insider's guide to retargeting with Facebook exchange. Nanigans. ⟨http://www.nanigans.com/2014/02/18/insiders-guide-to-facebook-exchange-ebook/⟩; viewed 18.04.14.
danah boyd and Eszter Hargittai, Facebook privacy settings: Who cares?" *First Monday* 15.08.10. ⟨http://www.uic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/3086/2589⟩; viewed 17.04.14.
danah boyd & Kate Crawford. Six Provocations for Big Data. 21.09.11. *Social science research network*. ⟨http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1926431⟩; viewed 08.07.14.
danah boyd (2007). Why youth (heart) social network sites: The role of networked publics in teenage social life. In David Buckingham (Ed.), *Youth, identity, and digital media. MacArthur Foundation Series on Digital Learning* (pp. 179–207). Cambridge, MA: The MIT Press.
danah boyd (2014). *It's complicated: The social lives of networked teens*. New Haven, CT.
Dean, Jeffrey, & Ghemawat, Sanjay (2004). *MapReduce: Simplified data processing on large clusters*. Google Research, December 2004. ⟨http://research.google.com/archive/mapreduce.html⟩ viewed 17.04.14.
Dăniasă, C. (2010). The mechanisms of the influence of viral marketing in social media. *Economics, Management & Financial Markets*, *5*(3), 278–282.
Econsultancy, "Demand-Side Platforms Buyer's Guide," 2011, p. 3, ⟨http://econsultancy.com/us/reports/dsps-buyers-guide⟩ (purchase required).

eMarketer, "Google Edges Closer to Facebook as US Display Advertising Becomes Two-Horse Race," 22 Feb. 2012, http://www.emarketer.com/PressRelease.aspx?R=1008856; IAB, "Internet Ad Revenues Hit $31 Billion in 2011, Historic High Up 22% Over 2010 Record-Breaking Numbers," 18 Apr. 2012, http://www.iab.net/about_the_iab/recent_press_releases/press_release_archive/press_release/pr-041812 (both viewed 17 Apr. 2014).
eMarketer (2014). *US teens*: *Sizing up the selfie-expressive generation*. February 2014 (subscription required).
Dockterman, Eliana (2014). Study: Teens aren't fleeing Facebook after all. *Time*. 25.06.14. ⟨http://time.com/2922227/study-facebook-teens/⟩; viewed 20.10.14.
Elmeleegy, Hazem, Li, Hinan, Qi, Yan, Wilmot, Peter, Wu, Mingxi, Kolay, Santanu, Dasdan, Ali, & Chen, Songting (2013). Overview of turn data management platform for digital advertising. *Proceedings of the VLDB Endowment*, *6*(11), 1138–1149. ⟨http://db.disi.unitn.eu/pages/VLDBProgram/pdf/industry/p850-elmeleegy.pdf⟩.
Ed Bott (2012). Why do not track is worse than a miserable failure. *ZDNet*, 21 September 2012. ⟨http://www.zdnet.com/why-do-not-track-is-worse-than-a-miserable-failure-7000004634/⟩; viewed 20.10.14.
Electronic Privacy Information Center (2012). Comments of the Electronic Privacy Information Center to the Federal Trade Commission, Face Facts: A Forum on Facial Recognition, Project Number P115406, 31.01.2012; ⟨http://epic.org/privacy/facerecognition/EPIC-Face-Facts-Comments.pdf⟩; viewed 16.04.14.
Electronic Privacy Information Center (2014). *Big Data and the future of privacy*. ⟨http://epic.org/privacy/big-data/⟩; Viewed 19 .04. 14.
Facebook (2012b). Introducing Facebook Exchange. 13 March 2012. ⟨http://www.facebook-studio.com/news/item/introducing-facebook-exchange⟩; viewed 16.04.14.
Facebook. Audiences. ⟨https://www.facebook.com/help/459892990722543/⟩; viewed 15.04.14.
Facebook. *Creating an Ad or sponsored story*. ⟨http://www.facebook.com/help/326113794144384/⟩; viewed 20.01.12; Darwell, Understanding the difference between Facebook sponsored stories, Page Post Ads, Promoted Posts and Marketplace Ads.
Facebook, Introducing timeline. ⟨http://www.facebook.com/about/timeline⟩; *Facebook timeline*; viewed 16.04.14.
Facebook, Introducing timeline. Lessin, Samuel W. (2011). Tell your story with timeline. *Facebook Blog*, 22 September 2011. ⟨http://blog.facebook.com/blog.php?post=10150289612087131⟩; viewed 16.04.14.
Facebook. Careers at Facebook: Data and analytics. ⟨https://www.facebook.com/careers/teams/data⟩; viewed 16.04.14.
Facebook (2012a). Form S-1 Registration Statement. U.S. Securities and Exchange Commission, 01.02.12. ⟨http://sec.gov/Archives/edgar/data/1326801/000119312512034517/d287954ds1.htm⟩; Viewed 16.04.14.
Facebook, (2013a). Statement of rights and responsibilities. 15.11.13. ⟨https://www.facebook.com/legal/terms⟩; Viewed 9.10.14.
Facebook, Data use policy. 15.11.2013b, ⟨https://www.facebook.com/about/privacy/⟩; "Comments of the Center for Digital Democracy, et al., In the matter of a preliminary FTC Staff report on protecting consumer privacy in an era of rapid change: Proposed framework for business and policymakers." Recently, Facebook announced that applications will be permitted to access telephone numbers and street addresses.
Facebook (2013c). Facebook delays controversial privacy policy change. *Huffington Post*, 6.09.13. ⟨http://www.huffingtonpost.com/2013/09/06/facebook-privacy-policy-change_n_3880288.html⟩; viewed 16.04.14.
Facebook (2014a). *Facebook safety*. ⟨https://www.facebook.com/fbsafety⟩; Viewed 17.04.14.
Facebook (2014b). Annual report. ⟨http://investor.fb.com/secfiling.cfm?filingID=1326801-14-7&CIK=1326801⟩; Viewed 9.10.14. Facebook also generates revenues from its "payment infrastructure" used for the sales of real and virtual goods by third parties.
Facebook (2014c). *Basic privacy settings & tools*. ⟨http://www.facebook.com/help/325807937506242⟩; Viewed 17.04.14.
Facebook (2014d). *Tools for parents and educators*. ⟨http://www.facebook.com/help/parents⟩; Viewed 17.04.14.
Facebook (2014e). *Careers at Facebook: Data scientist, identity research & modeling*. ⟨https://www.facebook.com/careers/department?dept=engineering&req=a0IA000000CzAeDMAV⟩; Viewed 07.10.14.
Facebook Developers. ⟨https://developers.facebook.com/⟩; viewed 16.04.14.
Facebook Developers; Facebook Studio, ⟨https://www.google.com/search?q=Facebook+Studio&ie=utf-8&oe=utf-8&aq=t&rls=org.mozilla:en-US:official&client=firefox-a&channel=sb⟩; viewed 16.04.14.
Facebook Marketing Bible. Facebook Developers; Facebook Studio.
Facebook Marketing Bible. *Inside network*. ⟨https://gold.insidenetwork.com/facebook-marketing-bible/⟩.
Federal Trade Commission. FTC strengthens kids' privacy, gives parents greater control over their information by amending children's Online Privacy Protection Rule. 19.12.12. ⟨http://www.ftc.gov/news-events/press-releases/2012/12/ftc-strengthens-kids-privacy-gives-parents-greater-control-over⟩; Viewed 16.04.14.
Federal Trade Commission. Protecting Consumer Privacy in an Era of Rapid Change: Recommendations for Businesses and Policymakers (pp. 28–29, 59–61, 70); White House. Fact Sheet: Plan to protect privacy in the Internet age by adopting a consumer privacy bill of rights.
Federal Trade Commission. FTC extends public comment period for COPPA Rule Review until July 12, 2010. 02.07.10. ⟨http://www.ftc.gov/news-events/press-releases/2010/07/ftc-extends-public-comment-period-coppa-rule-review-until-july-12⟩; Viewed 16.04.14.
Federal Trade Commission (2011). Facebook settles FTC charges that it deceived consumers by failing to keep privacy promises. 29.11.11. ⟨http://ftc.gov/opa/2011/11/privacysettlement.shtm⟩; viewed 17.04.14.
Federal Trade Commission (2012a). FTC issues final commission report on protecting consumer privacy. 26.03.12. ⟨http://www.ftc.gov/news-events/press-releases/2012/03/ftc-issues-final-commission-report-protecting-consumer-privacy⟩; Privacy by Design, ⟨http://www.privacybydesign.ca/⟩; viewed 20.10.14.
Federal Trade Commission, Protecting consumer privacy in an era of rapid change: Recommendations for businesses and policymakers (pp. 28–29, 59–61, 70). March 2012b. ⟨http://www.ftc.gov/os/2012/03/120326privacyreport.pdf⟩; Markey, Edward, & Barton, Joe (2012). Do not track kids. Online activities. *The Hill*, 06.03.12. ⟨http://thehill.com/opinion/op-ed/214569-do-not-track-kids-online-activities⟩; both viewed 17.04.14.
Federal Trade Commission (2012c). Children's Online Privacy Protection Rule ('COPPA'); Center for Digital Democracy, "Leading Consumer, Privacy, Child Advocacy & Public Health Groups Call on FTC for Stronger Children's Privacy Safeguards Under COPPA. 25.09.12, ⟨http://www.democraticmedia.org/leading-consumer-privacy-child-advocacy-public-health-groups-call-ftc-stronger-childrens-privacy-saf⟩; Viewed 20.10.14.
Federal Trade Commission (2012d).*Protecting consumer privacy in an era of rapid change: Recommendations for businesses and policymakers* (pp. 28–29, 59–61, 70).
Federal Trade Commission (2012e). *Facing Facts: Best Practices for Common Uses of Facial Recognition Technologies*. ⟨http://www.ftc.gov/sites/default/files/documents/reports/facing-facts-best-practices-common-uses-facial-recognition-technologies/121022facialtechrpt.pdf⟩; viewed 16.04.14.
Fehrenbacher, Katie (2012). A rare look inside Facebook's Oregon Data Center. *Gigaom*, 17 August 2012. ⟨http://gigaom.com/2012/08/17/a-rare-look-inside-facebooks-oregon-data-center-photos-video/⟩; viewed 17.04.14.
Fire Engine Red (2014). Teens & Mobile Fact Sheet. July 2014. ⟨http://fire-engine-red.com/wp-content/uploads/2014/07/Fire-Engine-RED-Teens-And-Mobile-Fact-Sheet.pdf⟩; viewed 20.10.14.
Fisher, Eric. Social design guidelines to help you build great social experiences. *Facebook Developers*. ⟨https://developers.facebook.com/blog/post/2011/08/16/social-design-guidelines-to-help-you-build-great-social-experiences/⟩; viewed 16.04.14.
Fogel, S. (2010). Issues in measurement of word of mouth in social media marketing. *International Journal of Integrated Marketing Communications*, *2*(2), 54–60
Fraley, Angel, et al. vs. Facebook, Inc. 11-CV-01726 (N.D. Cal. 2011). ⟨http://www.wired.com/images_blogs/threatlevel/2012/05/sponsoredlawsuitfacebook.pdf⟩; Viewed 09.11.14.
Freid, Justin (2014). Social advertising revenues forecast to grow 31% in 2014. *Search Engine Watch*, 05.02.14. ⟨http://searchenginewatch.com/article/2326963/Social-Advertising-Revenues-Forecast-to-Grow-31-in-2014⟩; viewed 15.04.14.
Friedman, Wayne (2014). Teens up usage for connected TVs, mobile. *Media Daily News*, 16.01.14; ⟨http://www.mediapost.com/publications/article/217521/teens-up-usage-for-connected-tvs-mobile.html⟩; viewed 18.04.14.

Gellman, Robert, & Dixon, Pam (2011). Many failures: A brief history of privacy self-regulation in the United States World Privacy Forum, 14 October 2011. ⟨http://www.worldprivacyforum.org/wp-content/uploads/2011/10/WPFselfregulationhistory.pdf⟩; viewed 16.04.14.
Giedd, J. N. (2008). The Teen Brain: Insights from neuroimaging. *Journal of Adolescent Health*, *42*(4), 335–343.
Gleason, Christina (2012). 5 Brands taking digital storytelling to the next level. Ignite Social Media. 24 July 2012. ⟨http://www.ignitesocialmedia.com/video-marketing/digital-storytelling-examples/⟩; Viewed 16.04.14.
Goel, Vindu (2013). Mobile ads fuel a jump in profit at Facebook. *New York Times*, ⟨http://www.nytimes.com/2013/10/31/technology/rising-mobile-ad-sales-propel-facebook-profit.html?_r=0⟩; viewed 18.04.14.
Goel, Vindu (2013). Facebook reasserts posts can be used to advertise. *New York Times*, 15.11.2013. ⟨http://www.nytimes.com/2013/11/16/technology/facebook-amends-privacy-policies.html?_r=1&⟩; viewed 16.04.14.
Goel, Vindu (2014). *Facebook's profit propelled by mobile* viewed 27.08.14. *New York Times*, 2014. ⟨http://www.nytimes.com/2014/07/24/technology/facebooks-profit-soars-past-expectations-fueled-by-mobile-ads.html⟩.
Greenfield, Patricia (2008). Living online: Implications for development and developmental methodology. *ISSBD Newsletter, no. 2, serial no. 54*, 1–4.
Guynn, Jessica (2013). Teen Advocacy Groups Ask FTC to Block Facebook Privacy Changes. *Los Angeles Times*, 17.08.13. ⟨http://articles.latimes.com/2013/sep/17/business/la-fi-tn-teen-advocacy-groups-ask-ftc-to-block-facebook-privacy-changes-20130917⟩; viewed 16.04.14.
Greenfield, P. M., Gross, E. F., Subrahmanyam, K., Suzuki, L. K., & Tynes, B. (2006). Teens on the Internet: Interpersonal connection, identity, and information. In R. Kraut (Ed.), *Information technology at home*. New York: Oxford University Press.
Greenfield, P. M., Gross, E. F., Subrahmanyam, K., Suzuki, L. K., & Tynes, B. (2006). Teens on the Internet: Interpersonal connection, identity, and information. In R. Kraut (Ed.), *Information technology at home*. New York: Oxford University Press.
Harris Interactive. *$211 Billion and so much to buy American youths, the new big spenders*. ⟨http://www.harrisinteractive.com/NewsRoom/PressReleases/tabid/446/ctl/ReadCustom%20Default/mid/1506/ArticleId/896/Default.aspx⟩; viewed 17.04.14.
Hoofnagle, Chris (2005). Privacy self-regulation: A decade of disappointment. Electronic Privacy Information Center. 04.03.05. ⟨http://epic.org/reports/decadedisappoint.html⟩; viewed 16.04.14.
Marcus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, *41*(9), 954–969.
H.R. 1895 (112th): *do not track kids act of 2011*. ⟨http://www.govtrack.us/congress/bills/112/hr1895⟩; Viewed 17.04.14.
Hadoop (2011). *Welcome to Apache™ Hadoop®!* ⟨http://hadoop.apache.org/⟩; viewed 17.04.14.
Hemley, Debbie (2013). 26 Ways to engage your fans on Facebook. *Social Media Examiner*, 20.11.13. ⟨http://www.socialmediaexaminer.com/26-facebook-fan-engagement-tips/⟩; Viewed 18.04.14.
Heussner, Ki Mae (2012). Despite Facebook's 'Bum Rap,' Partners give new ad exchange positive reviews. *GigaOm*, 13.09.12. ⟨http://gigaom.com/2012/09/13/despite-facebooks-bum-rap-partners-give-new-ad-exchange-positive-reviews/⟩; viewed 16.04.14.
Hines, John (2012). Understanding social media sentiment, behavior & influence. *Teradata*, 24 August 2012. ⟨http://www.teradata.com/WorkArea/DownloadAsset.aspx?id=20563⟩; viewed 17.04.14.
Hoofnagle, Chris Jay, King, Jennifer, Li, Su, & Turow, Joseph (2010). *How different are young adults from older adults when it comes to information privacy attitudes and policies*?" Social Science Research Network, ⟨http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1589864⟩; Viewed 17.04.14.
Howell, David (2013). Social spending and the teen market. *USM*, 5 June 2013. ⟨http://usefulsocialmedia.com/customer-insight/social-spending-and-teen-market⟩; viewed 9.10.14.
Hull, Gordon, Lipford, Heather Richter, & Latulipe, Celine (2011). Contextual Gaps: Privacy Issues on Facebook. *Ethics and Information Technology* 13, 289–302. ⟨http://pages.uoregon.edu/koopman/courses_readings/phil123-net/privacy/hull_context_privacy_fb.pdf⟩; viewed 17.04.14.
Kravets, David (2012). Facebook settling 'sponsored stories' privacy lawsuit Viewed 9.10.14. *Wired* ⟨http://www.wired.com/2012/05/facebook-privacy-settlement/⟩.
IAB (2014). *Defines cross platform ad engagement and identifies core digital metrics as part of the making measurement make sense (3 MS) initiative*. 10 February 2014. ⟨http://www.iab.net/about_the_iab/recent_press_releases/press_release_archive/press_release/pr-021014_3ms⟩; viewed 09.10.14.
Institute for Public Representation, filing with the Federal Trade Commission concerning "Online Behavioral Advertising Principles"; Kathryn C. Montgomery, Ph.D. "Before the Subcommittee on Consumer Protection, Product Safety, and Insurance. Committee on Commerce, Science, and Transportation. United States Senate. Hearing: An Examination of Children's Privacy: New Technologies and the Children's Online Privacy Protection Act. 29.04.10. ⟨http://www.centerfordigitaldemocracy.org/sites/default/files/KMSenateTestimony042710.pdf⟩;Viewed 16.04.14. Comments of the Center for Digital Democracy, et al., In the Matter of A Preliminary FTC Staff Report on Protecting Consumer Privacy in an Era of Rapid Change: Proposed Framework for Business and Policymakers, 18.02.11. ⟨http://www.democraticmedia.org/files/2011-02-18-teen-privacy.pdf⟩; Viewed 17.04.14.
Institute for Public Representation. Comments of the Center for Digital Democracy, et al., in the matter of Children's Online Privacy Protection Rule," Federal Trade Commission filing, 2012, 9, 7. ⟨http://www.centerfordigitaldemocracy.org/sites/default/files/CDD%20et%20al%20COPPA.pdf⟩; Viewed 16.04.14.
Internet Advertising Bureau UK. *IAB social media measurement and intent guide*. 14.02.11. ⟨http://www.slideshare.net/IABUK/socialmediaguidefinal⟩; Viewed 16.04.14.
Isidore, Chris (2013). New Facebook flap: Your face in some product's ad. *CNN Money*, 5 September 2013. ⟨http://money.cnn.com/2013/09/05/technology/social/facebook-privacy/⟩; viewed 15.04.14.
John, Deborah Roedder (1999). Consumer socialization of children: A retrospective look at twenty-five years of research. *Journal of Consumer Research*, *26*, 183–213.
Ito, Horst, & Bittanti, et al. *Living and learning with new media* (p. 15).
Ito, Horst, & Bittanti, et al., *Living and learning with new media* (p. 18).
Johnson, Bobbie, & Hirsch, Afua (2009). Facebook backtracks after online privacy protest. *The Guardian*, 18 February 2009. ⟨http://www.theguardian.com/technology/2009/feb/19/facebook-personal-data⟩; viewed 15.04.14.
Khang, H., Ki, E.-J., & Ye, L. (2012). Social media research in advertising, communication, marketing, and public relations, 1997–2010. *Journalism & Mass Communication Quarterly*, *89*(2), 279–298.
Kuchinskas, Susan (2012). *33 Across "The brand graph: Q3–Q4 2011 category insights*." ⟨http://33across.com/BrandGraph/33Across_BrandGraph_AQ3-Q4_2011.pdf⟩; "*33Across and Tynt team up to extend social graph insights*," ClickZ, 25 January 2012. ⟨http://www.clickz.com/clickz/news/2141442/33across-tynt-team-extend-social-graph-insights⟩; both viewed 16.04.14.
Kunkel, Dale (1990). The role of research in the regulation of U.S. children's television advertising. *Knowledge: Creation, Diffusion, Utilization*, *12*(1), 101–119.
Lance Bennett, W. (Ed.). (2007). *Civic life online. Cambridge, MA*. MIT Press, 2007.
Lee, Newton (2013). *Facebook nation: Total information awareness* (pp. 16–18)New York: Springer, 16–18.
Lepi, Katie (2014). How teens are really using social media. *Edudemic* ⟨http://www.edudemic.com/teens-are-really-using-social-media/⟩.
Lenhart, Amanda, Ling, Rich, Campbell, Scott, & Purcell, Kristen (2010). *Teens and mobile phones, Pew Internet & American Life Project*, April 20. ⟨http://www.pewinternet.org/~/media//Files/Reports/2010/PIP-Teens-and-Mobile-2010.pdf⟩; viewed 25.04.10.
Leonhard, Gerd (2014). Big data, big business, big brother? *CNN*, 26 February 2013. ⟨http://edition.cnn.com/2014/02/26/business/big-data-big-business/⟩; viewed 15.04.14.
Leslie, Frances, Carmody, Carrie, & Pechmann, Cornelia (Connie) (2011). *Adolescent development and social media*. unpublished paper from the author's files.
Leslie, Levine, Loughlin, & Pechmann. *Adolescents' psychological & neurobiological development: Implications for digital marketing*.
Livingstone, Sonia (2008). Taking risky opportnities in youthful content creation: Teenagers' use of social networking sites for intimacy, privacy, and self-expression. *New Media & Society*, *10*, 293–411.
Livingstone, Sonia, Ólafsson, Kjartan, & Staksrud, Elisabeth (2011).. Social networking, age and privacy. *EU Kids Online*, April 2011. ⟨http://www.lse.ac.uk/media@lse/research/EUKidsOnline/EU%20Kids%20II%20(2009-11)/EUKidsOnlineIIReports/ShortSNS.pdf⟩;viewed 17.04.14.

Lunden, Ingrid (2013). Facebook launches partner categories, 500+ generic profiles to target ads better, with data from Datalogix, Epsilon, Acxiom. TechCrunch, 10 April 2013. ⟨http://techcrunch.com/2013/04/10/facebook-launches-partner-categories-500-profiles-to-target-ads-better-on-mobile-and-desktop-using-data-from-datalogix-epsilon-and-axciom/⟩; viewed 15.04.14.
Montgomery, Kathryn C. (2012). Safeguards for youth in the digital marketing ecosystem. In Dorothy G. Singer, & Jerome L. Singer (Eds.), *Handbook of children and the media* (2nd ed.). Thousand Oaks, CA: Sage Publications.
McGinnis, J. M., Gootman, J. A., & Kraak, V. I. (Eds.). (2005). *Food marketing to children and youth: Threat or opportunity?*. Washington, DC: Institute of Medicine.
Madden, Mary, et al., (2013a). Teens, social media, and privacy Pew Internet & American Life Project. 21.05.13. ⟨http://www.pewinternet.org/2013/05/21/teens-social-media-and-privacy/⟩; viewed 16.04.14.
Madden, Mary, et al. (2013b). *Teens, social media, and privacy*. Pew Internet & American Life Project, 21.05.13. ⟨http://www.pewinternet.org/2013/05/21/teens-social-media-and-privacy/⟩; viewed 20.10.14.
Madden, Mary, Lenhart, Amanda, Duggan, Maeve, Cortesi, Sandra, & Gasser, Urs, (2013). *Teens and technology 2013*. Pew Internet & American Life Project, 13.03.13. ⟨http://www.pewinternet.org/Reports/2013/Teens-and-Tech/Summary-of-Findings.aspx⟩; Viewed 15.04.14.
Magid, Larry (2012). Letting children under 13 on Facebook could make them safer. *Huffington Post*, 4 June 2012. ⟨http://www.huffingtonpost.com/larry-magid/facebook-children-under-13_b_1567010.html⟩.
Markey, Edward , & Barton, Joe (2012). Do not track kids' online activities. *The Hill*, 6.03.12. ⟨http://thehill.com/opinion/op-ed/214569-do-not-track-kids-online-activities⟩; Viewed 17.04.14.
Marwick, Alice E., &danah boyd (2014). Networked privacy: How teenagers negotiate context in social media. *New Media & Society,* July 21, 2014. ⟨http://nms.sagepub.com/content/early/2014/07/19/1461444814543995.abstract⟩; viewed 17.04.14.
Mashable. ⟨http://mashable.com/⟩; viewed 16.04.14.
Mashable. ⟨http://mashable.com/category/facebook-timeline/⟩; viewed 16.04.14.
Mayer-Schönberger, Viktor, & Cukier, Kenneth, (2013). *Big Data: A revolution that will transform how we live, work, and think* (p. 6). New York: Houghton Mifflin Harcourt, "The Big Data conundrum: How to define it?" *MIT Technology Review*, 03.10.13. ⟨http://www.technologyreview.com/view/519851/the-big-data-conundrum-how-to-define-it/⟩; viewed 15.04.14.
Mayer-Schönberger and Cukier, p. 15.
Mayer-Schönberger and Cukier. *Big Data: A revolution that will transform how we live, work, and think* (p. 51).
McAnarney, Elizabeth R. (2008). Adolescent Brain Development: Forging New Links?. *Journal of Adolescent Health*, *42*(4), 321–323.
McCreanor, T., Barnes, H. M., & Gregory, M., et al. (2005). Consuming identities: Alcohol marketing and the commodification of youth experience. *Addiction Research & Theory*, *13*(6), 579–590.
Merkle. *Social*. ⟨http://www.merkleinc.com/what-we-do/digital-services/social⟩; viewed 16.04.14.
Miners, Zach (2014). Internet 'Do Not Track' system is in shatters. *Computerworld*, 22 May 2014, ⟨http://www.computerworld.com/article/2489727/data-privacy/internet–do-not-track–system-is-in-shatters.html⟩; viewed 20.10.14.
Miyazaki, Anthony D., Stanaland, Andrea J. S., & Lwin, May O. (2009). Self-regulatory safeguards and the online privacy of preteen children. *Journal of Advertising*, *38*(4), 79–91.
Montgomery, *Generation digital: Politics, commerce, and childhood in the age of the Internet* (pp. 107–139).
Montgomery, Kathryn, & Chester, Jeff. Interactive food & beverage marketing: targeting adolescents in the digital age. *Journal of Adolescent Health* 45, S18–S29.
Montgomery, Kathryn C. (2007). *Generation digital: Politics, commerce, and childhood in the age of the Internet* (pp. 179–207)Cambridge, MA: MIT Press 179–207.
Montgomery, Kathryn C., Chester, Jeff, Grier, Sonya, & Dorfman, Lori (2012). The new threat of digital advertising. *Pediatric Clinics of North America*, *59*(3), 17.
Mosco, Vincent (2009). *The political economy of communication* (2nd ed.). Thousand Oaks, CA: Sage141–143.
Murdough, C. (2009). Social media measurement: It's not impossible. *Journal of Interactive Advertising*, *10*(1), 94–99.
Natasha Singer, Do not track? Advertisers say 'Don't tread on us. *New York Times*, 13 October 2012, ⟨http://www.nytimes.com/2012/10/14/technology/do-not-track-movement-is-drawing-advertisers-fire.html?_r=0⟩; viewed 20.10.14.
Newman. "=*Facebook Edgerank: What marketers need to know*.
Nielsen. *The teen transition: Adolescents of today, adults of tomorrow*. 16.04.13. ⟨http://www.nielsen.com/us/en/insights/news/2013/the-teen-transition–adolescents-of-today–adults-of-tomorrow.html⟩; viewed 9.10.14.
Newman, Kelvin (2012). Facebook Edgerank: What marketers need to know. *Econsultancy*, 3 May 2012. emphasis in the original. ⟨http://econsultancy.com/us/blog/9770-facebook-edgerank-what-marketers-need-to-know⟩; viewed 16.04.14.
OECD, *OECD guidelines on the protection of privacy and transborder flows of personal data*. ⟨http://www.oecd.org/internet/ieconomy/oecdguidelinesontheprotectionofprivacyandtransborderflowsofpersonaldata.htm⟩; viewed 16.04.14.
O'Keeffe, Gwen Schurgin(2012). Kids under 13 on Facebook? Not so fast!" *Huffington Post*, 5 June 2012, ⟨http://www.huffingtonpost.com/gwenn-okeeffe/kids-under-13-on-facebook_b_1569329.html⟩; viewed 17.04.14.
Pechmann, et al., Impulsive and self-conscious: Adolescents' vulnerability to advertising and promotion.
Patchin, J. W., & Hinduja, S. (2010). Changes in adolescent online social networking behaviors from 2006 to 2009. *Computers in Human Behavior*, *26*(6), 1818–1821.
Peppers, Don, & Rogers, Martha (1993). *The one to one future: Building relationships one customer at a time*. New York: Doubleday.
Peterson, Andrea (2014). A year after Snowden revelations, government surveillance reform still a work in progress. *Washington Post*, 5 June 2014. ⟨http://www.washingtonpost.com/blogs/the-switch/wp/2014/06/05/a-year-after-snowden-revelations-government-surveillance-reform-still-a-work-in-progress/⟩;viewed 20.10.14.
Playland Hot Seat. Facebook Studio. ⟨https://www.facebook-studio.com/gallery/submission/playland-hot-seat⟩; viewed 07.10.14.
Protalinski, Emil (2012). EPIC vs. Facebook: Privacy through Obscurity. *ZDNet*, 09.01.12; ⟨http://www.zdnet.com/blog/facebook/epic-vs-facebook-privacy-through-obscurity/7030⟩; viewed 21.10.14.
Collins, Rebecca L., & McCaffrey, Daniel, et al. (2007). Early adolescent exposure to alcohol advertising and its relationship to underage drinking. *Journal of Adolescent Health*, *40*(6), 527–534.
Rodgers, Zach (2012). Agencies upbeat on tying Facebook to cross-channel ads. *Ad Exchanger*, 02.07.12. ⟨http://www.adexchanger.com/social-media/agencies-upbeat-on-tying-facebook-to-cross-channel-ads/⟩; viewed 16.04.14.
Rotenberg, Marc, et al. *Letter to Federal Trade Commission re: Facebook's changes regarding sponsored stories*. 04.09.2013. ⟨http://www.centerfordigitaldemocracy.org/sites/default/files/Privacy%20Grps%20ltr%20to%20FTC%209-13%202.pdf⟩; viewed 15.04.14.
Schulman, Jacob (2011). Facebook makes sweeping changes in privacy, sharing controls. *Washington Post*, 24 August 2011. ⟨http://www.washingtonpost.com/business/economy/facebook-makes-sweeping-changes-in-privacy-sharing-controls/2011/08/24/gIQAbDC8aJ_story.html⟩ ; viewed 17.04.14.
Schwartz, Daniel (2012). 8 Facebook Privacy Flaps. *CBC News*, 25 September 2012. ⟨http://www.cbc.ca/news/technology/8-facebook-privacy-flaps-1.1140969⟩; viewed 16.04.14.
Schwartz, Paul M., & Solove, Daniel J. (2011). The PII problem: Privacy and a new concept of personally identifiable information. *New York University Law Review, 86*, 1814. ⟨http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1909366⟩ viewed 21.10.14.
Sengupta Somini (2013). Sharing, with a safety net," *New York Times*, 19.09.13. ⟨http://www.nytimes.com/2013/09/20/technology/bill-provides-reset-button-for-youngsters-online-posts.html⟩; viewed 16.04.14.
Shade, Leslie Regan & Shepherd, Tamara (2013). Viewing youth and mobile privacy through a digital policy literacy framework. *First Monday*, *18* (12), ⟨http://firstmonday.org/ojs/index.php/fm/article/view/4807⟩; viewed 21.10.14.

Shepard, Luke (2011). Bringing social App discovery to mobile. *Facebook Developers*, 10.10.11. ⟨https://developers.facebook.com/blog/post/575/⟩; Games Discovery. *Facebook developers*. ⟨https://developers.facebook.com/docs/games/discovery/⟩; Measurement for Mobile App Ads. ⟨https://developers.facebook.com/docs/ads-for-apps/measurement/⟩; all viewed 17.04.14.
Shrum, L. J., Lowery, T. M., & Liu, Y. (2009). Emerging issues in advertising research. In R. L. Nabi, & M. B. Oliver (Eds.), *The SAGE handbook of media processes and effects* (pp. 299–312). Thousand Oaks, CA: SAGE Publications.
Sicular, Svetlana (2013). Gartner's Big Data definition consists of three parts, not to be confused with three 'V's. *Forbes*, 27 March 2013. ⟨http://www.forbes.com/sites/gartnergroup/2013/03/27/gartners-big-data-definition-consists-of-three-parts-not-to-be-confused-with-three-vs/⟩; viewed 15.04.14.
Smith, Cooper (2014a). Reinventing social media: Deep learning, predictive marketing, and image recognition will change everything. *Business Insider*, 20 March 2014. ⟨http://www.businessinsider.com/social-medias-big-data-future-2014-3⟩; viewed 15.04.14.
Smith, Cooper (2014b). Social big data: The user data collected by each of the world's largest social networks—And what it means. *BI Intelligence*, 16 January 2014 (subscription required).
Smith, Reinventing social media: deep learning, predictive marketing, and image recognition will change everything.
Smith, Social Big Data: The user data collected by each of the world's largest social networks—and what it means.
Solove, Daniel J. & Hartzog, Woodrow (2014). The FTC and the new common law of privacy. *Columbia Law Review* 114, 583–676. GWU Legal Studies Research Paper no. 2013-120; GWU Law School Public Law Research Paper No. 2013-120. ⟨http://ssrn.com/abstract=2312913⟩; Viewed 16.04.14.
Solove, Daniel J., & Schwartz Paul (2008). *Information privacy law: Cases & materials*. New York: Aspen Publishers.
Steel, Emily, & Fowler, Geoffrey A. (2010). Facebook in privacy breach. *Wall Street Journal*, 18.11.10. ⟨http://online.wsj.com/article/SB10001424052702304772804575558484075236968.html?mod=djemalertTECH⟩. Facebook continues to make changes to its privacy policy, responding to increasing pressure from regulators; viewed 17.04.14.
Steinberg, Laurence (2007). Risk taking in adolescence: New perspectives from brain and behavioral science. *Current Directions in Psychological Science*, *16* (2), 55–59.
Steinberg, Laurence (2008). A social neuroscience perspective on adolescent risk-taking. *Developmental Review*, *28*(1), 78–106.
Subrahmanyam & Greenfield. *Online communication and adolescent relationships* (pp. 126–127).
Subrahmanyam, Kaveri (2008). Communicating online: Adolescent relationships and the media. *The Future of Children; Children and Media Technology*, *18*, 119–146.
Subrahmanyam, Kaveri, & Šmahel, David (2012). *Digital youth: The role of media in development* (pp. 59–80)New York, NY: Spinger59–80.
Subrahmanyam, Kaveri, & Smahel, David (2012). *Digital youth: The role of media in development* (pp. 69–72). New York: Springer;.
Subrahmanyam,Kaveri, Garcia, Eddie, Lidwina Harsono, Stella, Li, Janice, & Lipana,Lawrence (2009). In their worlds: Connecting online weblogs to developmental processes. *British Journal of Developmental Psychology* 27, 219–245.
Subrahmanyam and Smahel, *Digital Youth: The Role of Media in Development*.
The White House (2012). Fact sheet: Plan to protect privacy in the Internet age by adopting a Consumer Privacy Bill of Rights. 23.02.12. ⟨http://www.whitehouse.gov/the-press-office/2012/02/23/fact-sheet-plan-protect-privacy-internet-age-adopting-consumer-privacy-b⟩ ; viewed 20.10.14.
Troianovski, Anton, & Raice, Shayndi (2012). *Facebook explores giving kids access*, *4* subscription required.
Tsukayama, Hayley (2013). Facebook: Teens Can Now Post Publicly, but Posts are Friends-only by Default. *Washington Post*, 16.10.13. ⟨http://www.washingtonpost.com/business/technology/facebook-teens-can-now-post-publicly-but-posts-are-friends-only-by-default/2013/10/16/57d5051c-3682-11e3-be86-6aeaa439845b_story.html⟩; Viewed 20.10.14.
Tufekci, Zeynep (2014). Engineering the public: Big data, surveillance and computational politics. *First Monday*, *19* (7). ⟨http://firstmonday.org/ojs/index.php/fm/article/view/4901/4097⟩; Viewed 21.10.14.
Turow, Joseph (2013). *The Daily You: How the new advertising industry is defining your identity and your worth*. New Haven: Yale University Press.
United States Senate (2010). An examination of children's privacy: New technologies and the Children's Online Privacy Protection Act, Hearing before the Subcommittee on Consumer Protection, Product Safety, and Insurance of the Committee on Commerce, Science, and Transportation, United States Senate, One Hundred Eleventh Congress, Second Session. 29.04.10. ⟨http://www.gpo.gov/fdsys/pkg/CHRG-111shrg66284/html/CHRG-111shrg66284.htm⟩; viewed 22.09.13.
van Dijck, *The culture of connectivity: A critical history of social media* (pp. 59–67).
van Dijck, Jose (2013). *The culture of connectivity: A critical history of social media*. New York: Oxford University Press.
Van Grove, Jennifer (2013). *Why teens are tiring of Facebook*. CINet, 02.03.13. ⟨http://www.cnet.com/news/why-teens-are-tiring-of-facebook/⟩; viewed 20.10.14.
Vijayan, Jaikumar (2009). Privacy advocates hail Facebook's plan to shutter beacon. *Computerworld*, 22 September 2009. ⟨http://www.computerworld.com/article/2527870/data-privacy/privacy-advocates-hail-facebook-s-plan-to-shutter-beacon.html⟩; viewed 20.10.14.
Wagner, Kurt (2014). Facebook set to eliminate sponsored stories in April. Mashable. 9 January 2014, ⟨http://mashable.com/2014/01/09/facebook-eliminate-sponsored-stories/⟩; ; viewed 20.10.14.
Wang, X., Yu, C., & Wei, Y. (2012). Social media peer communication and impacts on purchase intentions: A consumer socialization framework. *Journal of Interactive Marketing*, *26*(4), 198–208.
Wartella, Ellen, Rideout, Victoria, & Robb, Michael (2009). Studying media effects on children: Improving methods and measures. *American Behavioral Scientist*, *52*(8), 1111–1114.
Watkins, S. Craig (2009b). *The young and the digital*.
Watkins, Samuel Craig (2009c). *The young and the digital: What the migration to social-network sites, games, and anytime, anywhere media means for our future*. Boston: Beacon Press.
Wheaton, Sarah (2007). Facebook Bows to Privacy Protest. *New York Times*, 29 November 2007; viewed 15.04.14.
White House (2012). We can't wait: Obama administration unveils blueprint for a 'Privacy Bill of Rights' to protect consumers online. 23.02.12. ⟨http://www.whitehouse.gov/the-press-office/2012/02/23/we-can-t-wait-obama-administration-unveils-blueprint-privacy-bill-rights⟩; viewed 18.04.14.
Weekly Social Scorecard. *Awareness*, 19 June 2012. ⟨http://awarenessnetworks.com/learning/social-media-score-card_6-19⟩; "The Top 10 Viral Video Ads Chart," 29.08.12. ⟨http://www.visiblemeasures.com/adage⟩; both viewed 17.09.12.
What is EdgeRank? ⟨http://www.whatisedgerank.com/⟩; viewed 16.04.14.
Yong Zhao, Wei Qui, & Xie, Naiyi (2012). Social networking, social gaming, and texting. In Dorothy. In G. Singer, L. Jerome, & Singer (Eds.), *Handbook of children and the media* (2nd ed.). Thousand Oaks, CA: Sage Publications.
Zuckerberg, Mark (2006). An open letter from Mark Zuckerberg. *Facebook*, 8.09.06. ⟨https://www.facebook.com/notes/facebook/an-open-letter-from-mark-zuckerberg/2208562130⟩; viewed 16.04.14.
Zuckerberg, Mark (2011). Our commitment to the Facebook community. *Facebook Blog*. 29.11.11. ⟨https://blog.facebook.com/blog.php?post=10150378701937131⟩; viewed 16.04.14.