Briefing

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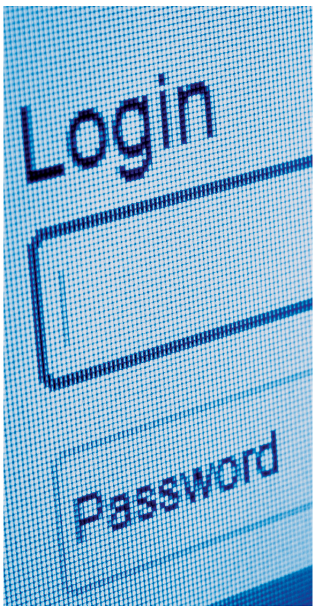

The Impact of U.S. Internet Privacy Regulations on Early-Stage Investment

A Quantitative Study

PREFACE

Even in the midst of these uncertain economic times, the world has benefited enormously from an impressive level of growth and innovation in the Internet sector. Since the beginning of the Internet age, a mere two decades ago, society has grown to expect accelerating growth in technology and innovation. Thanks in part to this rapid rate of change, lawmakers have relied heavily on self-regulation rather than government enforcement and compliance as a means of controlling the growth of the Internet. As we move into a new era of Internet growth fueled by new and emerging technologies—including widespread broadband access, cloud computing, social media, and mobile connectivity—it will be increasingly important to understand the effect that regulatory changes might have on the Internet's growth.

One area of Internet regulation currently being debated is online privacy. To keep up with the increasing connectivity of users to the online world and ensure the proper use of the data that users leave behind, regulators are evaluating several potential changes to current online privacy law that would have a large impact not only on the content providers but also on the online user experience. Our study captures these dimensions by understanding how these regulatory changes might affect early-stage investment.

New startup companies have long been a driver of innovation and economic growth in the U.S., and few of them would have grown to maturity without the early-stage financing that allowed them to bring their ideas to the marketplace. It was our research hypothesis that this financing, which comes primarily from angel investors and venture capitalists, might be greatly affected by the regulatory environment; our study looks to test empirically how particular privacy regulations might affect this investment. Though there are many players who may be affected by potential privacy regulations, including those who use the Internet themselves, we focused on advertising technology firms, given their importance in the value chain and their potential as engines of innovation in the Internet content space.

To understand how early-stage investors might react to new regulations, we took a direct approach, one that to our knowledge has never been tried in a systematic way—we asked them. We surveyed almost 200 angel investors and interviewed more than 20 prominent venture capitalists to determine their sentiments regarding a variety of potential regulatory changes. It is our hope that this study will leave readers with a clear sense of how changes to the current privacy regulatory regime might affect early-stage investing.

This report is one of two on U.S. investment attitudes toward Internet companies. The other report focuses on copyright regulations and is titled *The Impact of Internet Copyright Regulations on Early-Stage Investment:A Quantitative Study for the U.S.* Additionally, Booz & Company has published two reports examining the impact on early-stage investment in the European Union of Internet copyright and privacy regulations.

This briefing was financed by Google Inc., and independently researched and written by Booz & Company.

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Several other angel groups, including Alliance of Angels, Angel List, Angel Resource Institute, Band of Angels, Boise Angel Fund, Dingman Angels, Harvard Angels, Oregon Entrepreneurs Network, PA Angel Network, Plug and Play Tech Center, Sacramento Angels, and Sand Hill Angels also participated in our study, and we gratefully acknowledge their support.

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This report was financed by Google Inc., and independently researched and written by Booz & Company, drawing on expertise from its consumer, media, and technology practice, and also on academic and public research, publicly available information, and primary research.

EXECUTIVE SUMMARY

The rise of the Internet over the past two decades has led to a complete transformation of how we find information, consume news and entertainment, connect with friends, and shop. The Internet has accounted for 3.4 percent of global gross domestic product (GDP) and 21 percent of GDP growth in mature countries over the past five years, according to estimates. The continued growth of the Internet, however, could be hampered unless the level of investment in innovative technologies such as mobility, social media, cloud computing, and others can be maintained.

A large portion of that investment comes from the angel investors and venture capitalists who have long supported the young companies at the heart of these innovations. In 2010 alone, these two critical groups invested an estimated US$20 billion and $23 billion, respectively, into early-stage companies in the United States. Their importance wasn't only financial—they also provided invaluable business advice to the entrepreneurs running these innovative companies.

Early-stage investment in new companies working to improve the effectiveness of Internet advertising is a case in point, given the critical role advertising plays in supporting all manner of activity on the Internet. The advertising-supported Internet, according to estimates, is responsible for $300 billion of economic activity in the U.S. alone, or 2 percent of the total U.S. GDP, and employs more than 1.2 million people, offering them above-average wages in jobs that did not exist two decades ago. At the heart of this growth and productivity are the advertising technology companies, which collect and analyze user data in order to increase the efficiency of advertising, giving content producers the ability to provide more relevant ads to their users. These targeted ads are estimated to be almost twice as effective as non-targeted ads, and thus greatly enhance the ability of content producers to monetize their offerings.

Even as advertising technology companies continue to look for innovative ways to use data, the debate about how the collection and use of such data affect the privacy of Internet users continues. This study focuses on two major issues in this debate:

- *The requirements around providing notice and obtaining consent from users when personal data is being collected, and how that data is subsequently used.*

- *The amount of damages awarded in the event of noncompliance with these regulations.*

To date, there has been little research on how changes to privacy regulations might affect investment. To fill that gap, we undertook this empirical, quantitative study in hopes of understanding how such changes might affect the level of angel and venture capital *investment in new advertising technology companies. To that end, we surveyed 189 U.S. accredited angel investors and interviewed 24 prominent venture capitalists. Our principal findings support the following points:*

- *Fully 70 percent of angel investors would be deterred from investing in advertising technology companies by any sort of regulation requiring websites to allow users to opt in to data collection.*

- *Requiring users to opt in each time data is collected would have a negative impact, reducing the pool of interested angel investors by 67 percent; just 15 percent of angel investors would even consider investing in advertising technology companies under such a change.*

- *Other results suggest that such a change would likely have a more negative effect on investment than would a weak economy or a more competitive landscape.*

- *Creating a "Do Not Track" list so that users can summarily opt out of all data collection would also have a negative impact on investment.*

- *Regulations that allow for default browser settings as a means of achieving consent for data collection would have a smaller negative impact on investment than the forms of opt-in mentioned above.*

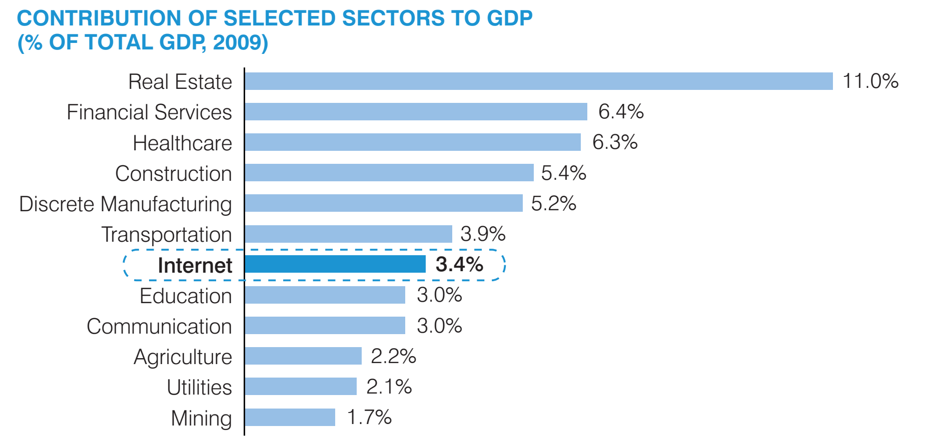
In light of these results, lawmakers might wish to consider the angel and venture capital community when considering new privacy regulations.

Chapter 1
BACKGROUND ON INTERNET GROWTH

The creation of the global Internet infrastructure and of the vast array of companies offering products and services that leverage its connectivity has transformed our world over the past two decades. In this short period of time, the Internet has grown from a resource for a handful of scientists and researchers to an essential medium for more than 2 billion users worldwide. Its rapid growth has also generated enormous economic value for the global economy; indeed, it is estimated that the Internet contributes as much to worldwide GDP as many other, far more mature sectors of the economy, including agriculture, utilities, and mining (*see Exhibit 1*).

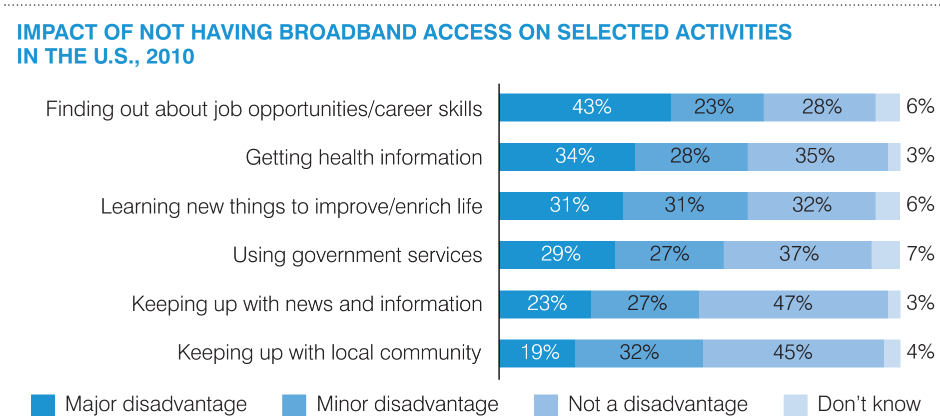
Moreover, the Internet has dramatically changed the way information is collected, distributed, and used. Most Americans now believe that not having high-speed Internet access at home would put them at a disadvantage in terms of their careers, their health, and the overall richness of their lives (*see Exhibit 2*).

Exhibit 1
Global Internet Value as a Sector, Compared with Other Sectors



Note: Figures represent the following 13 countries that account for 70 percent of global GDP: Brazil, Canada, China, France, Germany, India, Italy, Japan, Russia, South Korea, Sweden, the United Kingdom, and the United States.
Source: Organisation for Economic Co-operation and Development; McKinsey Global Institute

Exhibit 2
The Effect of a Lack of Broadband Access at Home on Various Activities



Source: Organisation for Economic Co-operation and Development

As the Internet continues to evolve, and its influence increases, further investment will be needed to support that growth. Fast-emerging technologies and platforms such as social media, the cloud, mobile access, and "big data"—most of which barely existed as recently as a decade ago—are now expected to drive the Internet's future growth. Estimates place the annual value of big data to the U.S. healthcare sector alone at $300 billion,[1] and the proliferation of 4G networks is expected to account for as much as $150 billion in annual GDP, partly by further enabling the continued growth of social media, the cloud, and mobility (*see Exhibit 3*).

Twenty years ago, when the Internet first emerged in the public sphere, it garnered less scrutiny from policymakers and regulatory bodies—in part because its technological complexity and rapid evolution made it difficult to devise and enforce regulations. Thus, many of the regulatory frameworks that were created at the time relied more on self-regulation than on government-mandated oversight or compliance. For example, the NAI (Network Advertising Initiative) formed in 1999, is a cooperative of online marketing and analytic companies committed to building consumer awareness and establishing responsible business and data management practices through effective industry self-regulation. Specifically, the NAI compliance program provides consumers with an educational resource and tool to help them exercise control over their online experience and offers a dispute mechanism to hold participating networks accountable to NAI principles and standards.

As the Internet grows and its impact on society increases, however, the pressure to regulate it will likely increase. The manner in which governments handle this issue will have a lasting impact on how the Internet evolves.

One key area in which policies and regulations are likely to have a significant effect is at the intersection of the Internet and early-stage capital investment. The next phase of the Internet's development will require the contributions of many parties as new technologies are developed and launched and as new products and services are introduced. As in the past, a major factor will be the new and emerging companies that fuel innovation—and which typically require startup and early-stage capital to survive. The majority of this capital will come from the private markets and, particularly, early-stage investors—the angel investors and venture capital firms with the skills to support the growth of new businesses and the willingness to risk the money needed to help them grow.

Exhibit 3
Incremental Impacts of Investment in 4G Networks, 2012–16

	BASELINE $25 BILLION INVESTMENT	$53 BILLION INVESTMENT
GDP	$73 billion	$151 billion
Jobs	371,000	771,000

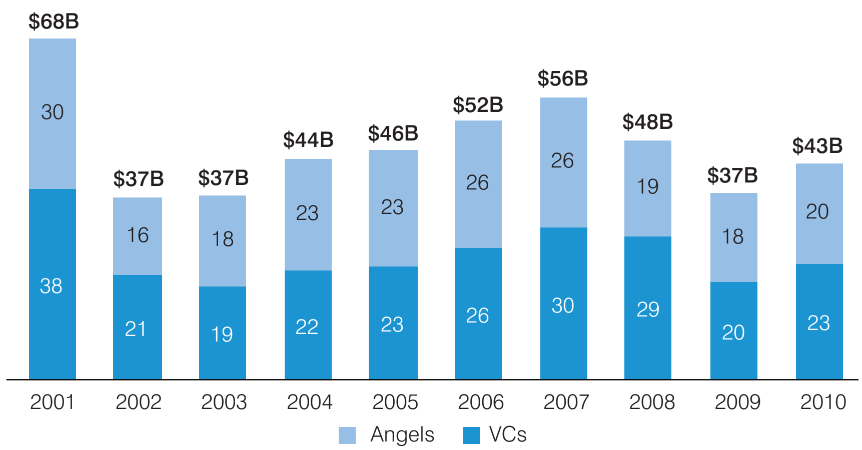
Source: Deloitte

Chapter 2
ANGELS AND VENTURE CAPITALISTS

To determine the impact of the regulatory environment we have focused our study on understanding how the early-stage investment community—particularly angel investors and VCs—might react to potential regulatory changes. Angel investors and VCs play a critical role in the capital markets, providing early financing to new companies that otherwise would find it difficult to secure funding.[2] Taken together, angel investors and VCs are the primary source of this entrepreneurial funding, investing nearly $43 billion in the U.S. in 2010 alone (*see Exhibit 4*).[3] In fact, angels and VCs were early investors in many companies that are household names, including Apple, Cisco, Dell, eBay, Facebook, Google, Intel, and Microsoft.[4]

Exhibit 4
Early-Stage Investments by Angels and VCs

ANNUAL EARLY-STAGE FUNDING BY ANGELS AND VCs



Note: Numbers may not add up due to rounding
Source: National Venture Capital Association; Center for Venture Research

Though VCs may be the more familiar of the two, it is actually the angels that provide the majority of the earliest funding for new ventures, with the VCs typically investing in later rounds (*see Exhibit 5*).

Indeed, angels are the most active investors in seed and early-stage startup businesses, contributing as much as 80 percent of seed and startup capital for high-tech entrepreneurial ventures.[5] In 2010, 265,400 individual angels invested in 61,900 new ventures, for a total of more than $20 billion in invested capital, almost equal to the total amount invested by VCs.[6]

In addition to injecting capital, angel investors often play a hands-on role in the deals they invest in by providing entrepreneurs with mentoring, business advice, and contacts. It has been suggested that these "softer" benefits of angel investing can have as great an impact on the success of a startup as the funding itself.[7] Their many contributions, both financial and managerial, make angel investors a critical part of the entrepreneurial finance landscape.

VCs also play a critical role in providing capital for entrepreneurs. They typically invest during the later stages of a startup's growth, and often make much larger individual investments. And they usually play a similarly important hands-on role in the companies in

Exhibit 5
Equity Capital for Entrepreneurs, by Funding Stage

EQUITY CAPITAL FOR ENTREPRENEURS

Stage	Pre-Seed	Seed/Startup	Early	Later
Source	1 Founders	2 Angels/Angel Alliances		3 VCs
Demand (per deal)	$25K–$100K	$100K–$2M	$2M–$5M	$5M+

Observations

1. Initial funding is typically provided by entrepreneurs and "friends and family." The maximum amount of this capital is on the order of $100,000.
2. Angel investors or angel groups typically provide the bulk of the "seed" or "early stage" capital in the next round.
3. VCs generally invest in later rounds after one or more rounds of angel investment.

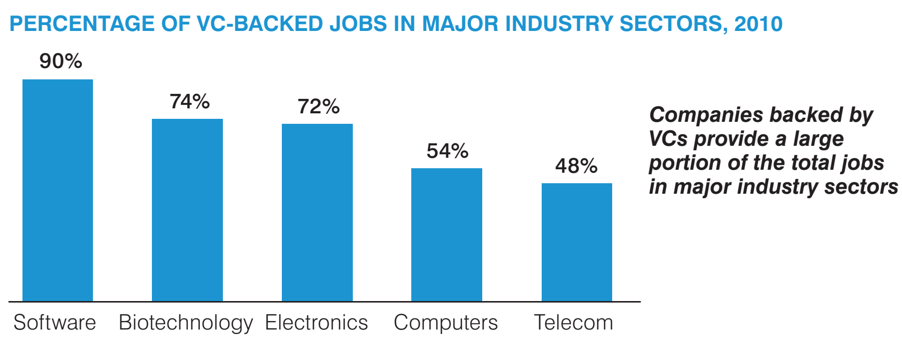
Source: Jeffrey E. Sohl, "The US Angel and Venture Capital Market: Recent Trends and Developments" which they invest.[8] VCs have historically invested heavily in startups in various technology sectors, including software, electronics, and computers. A large percentage of the jobs created in these sectors can be attributed to these startups (*see Exhibit 6*).

Indeed, the impact that VC-funded companies have had on the economy across all sectors in the U.S. has been substantial: Revenue from VC-backed companies accounts for 21 percent of total GDP, and employment at these companies accounts for 11 percent of all U.S. jobs.[9]

Given the key role that angels and VCs play, not only in funding new companies but also in working with them to promote their success, their continued willingness to invest is critical to the future creation and growth of new companies. In producing this Booz & Company study, we surveyed nearly 200 angels to understand better how potential regulatory changes might affect their investment behavior, and interviewed more than 20 prominent venture capitalists to gain a more qualitative perspective on their views.

In this study, we have chosen to concentrate on privacy laws and regulations. Privacy on the Internet is a timely issue, given recent court rulings and contemplated legislation, and it is particularly relevant to technology companies—an important area of focus for early-stage investors.

Exhibit 6
VC-Created Jobs in Major Industry Sectors



Source:National Venture Capital Association

Chapter 3
THE CURRENT AND FUTURE PRIVACY LANDSCAPE

In order to determine which regulatory changes in privacy to focus on, we consulted several lawyers with experience in the space. All identified the following as important areas of the law currently being debated:

- The requirements regarding providing notice and/or obtaining consent from users when certain data is being collected

- The amount of damages awarded in the event of noncompliance

In this chapter we provide the background for the current state of these regulations and how they might change.

Current privacy laws in the U.S. generally do not require online service providers to notify users that personal data is being collected, and providers do not generally need to get consent from users before collecting such information.[10] However, new regulations are being discussed that would require content providers (Some exceptions do exist, such as in the case of children) to get consent from users through one or another of several possible opt-in procedures before much of this information can be collected.

A key question involves the manner in which content providers would be required to obtain consent. An opt-in standard has been a part of privacy laws in the E.U. for many years, but due to technical challenges, it is only now beginning to be implemented.[11] Indeed, even now there is no agreed-on best practice for implementing opt-in on the Web or other platforms.[12] According to lawyers we have interviewed, three possible ways in which opt-in standards for data collection might be instituted in the U.S.:

- Creating a "Do Not Track" list that would allow users to summarily opt out of all data collection by placing themselves on the list

- Requiring content providers to gain consent from users and allowing that consent to be obtained implicitly through default browser settings

- Requiring content providers to gain consent from users every time data is collected, requiring users to explicitly opt in each time they visit a site

A further issue in the current debate involves the amount of damages that could be awarded in the event a company is found guilty of breaching privacy regulations. Central to this issue is the question of whether damages must be compensatory and thus in some way commensurate with the harm caused.[13] Currently, there is a lack of clarity surrounding damages in privacy cases, which has resulted in several class-action lawsuits—most notably involving Facebook and Pandora[14]—the majority of which have been settled before any ruling was made.

Chapter 4
THE ADVERTISING TECHNOLOGY BUSINESS MODEL

To assess angel investor sentiment about the effects of potential regulations, we focused on investment in advertising technology companies, given the importance of online advertising to content providers and the central role of advertising technology companies in online advertising. Advertising is a primary means of financing online content, given that most content providers rely on online marketing and advertising to produce the revenues necessary to create and publish their content.[15] Indeed, it is estimated that the advertising-supported Internet is responsible for $300 billion of economic activity in the U.S. and represents 2 percent of the total U.S. GDP. Furthermore, the advertising-supported Internet directly provides more than 1.2 million jobs at above-average wages that did not exist two decades ago. Thus, even a small disruption of the industry would have potentially large implications for the economy as a whole.[16] Advertising technology companies sit at a critical juncture on this online marketing value chain: Their goal is to increase the efficiency of advertising by placing the right ads in front of the right customers at the right time, thereby improving click-through and conversion rates.

An example of how advertising technology companies improve marketing efficiency is the sophisticated algorithms they employ to determine customer insights based on their Internet-usage. These insights are then used to determine which ads should be presented on a content provider's page whenever that customer visits. Such "behavioral targeting" has been shown to enhance the efficiency of advertising. In fact, a recent study suggests that conversion rates for targeted ads are more than twice those of non-targeted ads. Moreover, advertisers are willing to pay content providers an average of 2.68 times more for behaviorally targeted ads than for non-targeted ads.[17]

Advertising technology companies are competing to innovate new ways of increasing this differential in conversion rates between targeted and non-targeted ads, and thus raise the prices advertisers are willing to pay to online content providers. Any new law or regulation that impairs the ability to behaviorally target ads or discourages innovation in the advertising technology space will have implications not only for the advertising technology companies themselves but also for the online content providers they serve and support.[18]

Furthermore, advertising technology companies also collect data that can then be used for product research and development purposes, so reducing the ability to collect this information could also impair the ability of manufacturers to make the best products for their customers. Given these many factors, the goal of our empirical analysis was to determine whether changes to privacy regulations might impact the economy by significantly affecting investor sentiment toward investing in advertising technology companies.

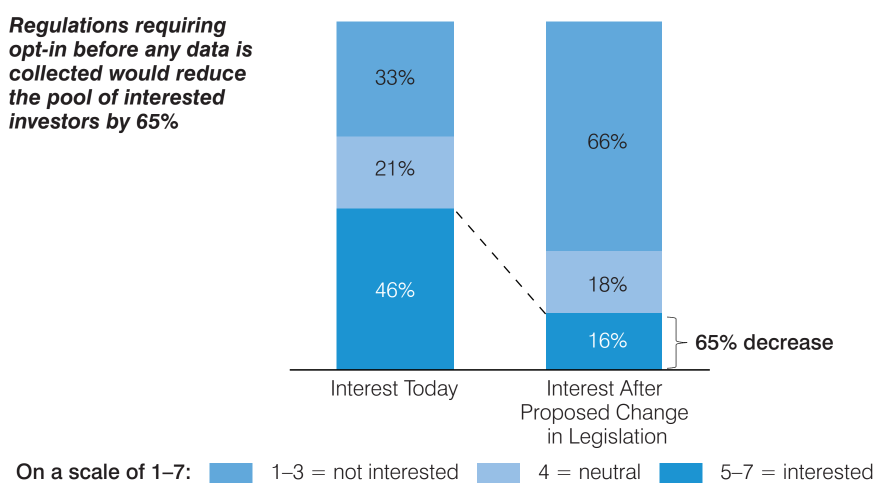
Chapter 5
EMPIRICAL FINDINGS

Our goal in this study is to understand how changes to privacy regulations would affect early-stage investment in advertising technology companies. To that end, we surveyed 189 angel investors and interviewed 24 venture capitalists to determine what impact, if any, changes to privacy regulations would have on their investment decisions. In this section we examine the results as they relate to the impact of opt-in regulations on such investments and the impact that class-action lawsuits in the space might have on investment.

Opt-in Regulations

We tested the reactions of angels and VCs to opt-in regulations both generally and under specific scenarios. In general, our data suggests that opt-in regulations would indeed have a negative impact on investment. According to the survey, the pool of angel investors interested in investing in a particular advertising technology company would decrease by 65 percent no matter what kind of opt-in regulation might be passed to change the current regulatory environment (*see Exhibit 7*).

Exhibit 7
Drop-off in Investment Interest Among Angel Investors Under Any Sort of New Opt-in Regulation



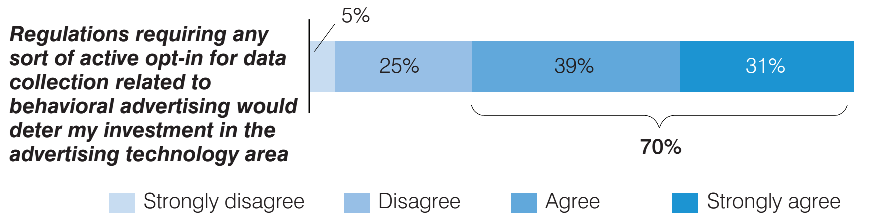
Source: Booz & Company analysis

Moreover, a substantial majority of investors also agreed that any sort of active opt-in would deter investment specifically in advertising technology companies (*see Exhibit 8*).

This is consistent with the results of our interviews with VCs, almost all of whom believe that opt-in regulations generally would have a negative impact on investment. These findings also align with data showing that angel investors prefer the U.S. regulatory environment to the more stringent regulatory environment in the European Union. In fact, 86 percent of respondents would rather invest in advertising technology companies under U.S. privacy law than under European law (*see Exhibit 9*). All of the VCs we interviewed shared this sentiment.

Exhibit 8
Drop-off in Investment Interest in Advertising Technology Companies Among Angel Investors Under Any Sort of New Opt-in Regulation

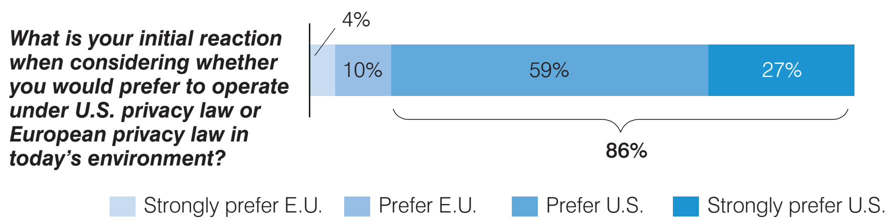
70% OF INVESTORS WOULD BE DETERRED FROM INVESTING IN ADVERTISING TECHNOLOGY COMPANIES IN THE EVENT OF OPT-IN REGULATIONS



Source: Booz & Company analysis

Exhibit 9
Preference for Investing in Advertising Technology Companies Under U.S. Privacy Law

86% OF INVESTORS WOULD PREFER THAT AN ADVERTISING TECHNOLOGY COMPANY OPERATE UNDER U.S. PRIVACY LAW THAN UNDER EUROPEAN PRIVACY LAW



Source: Booz & Company analysis

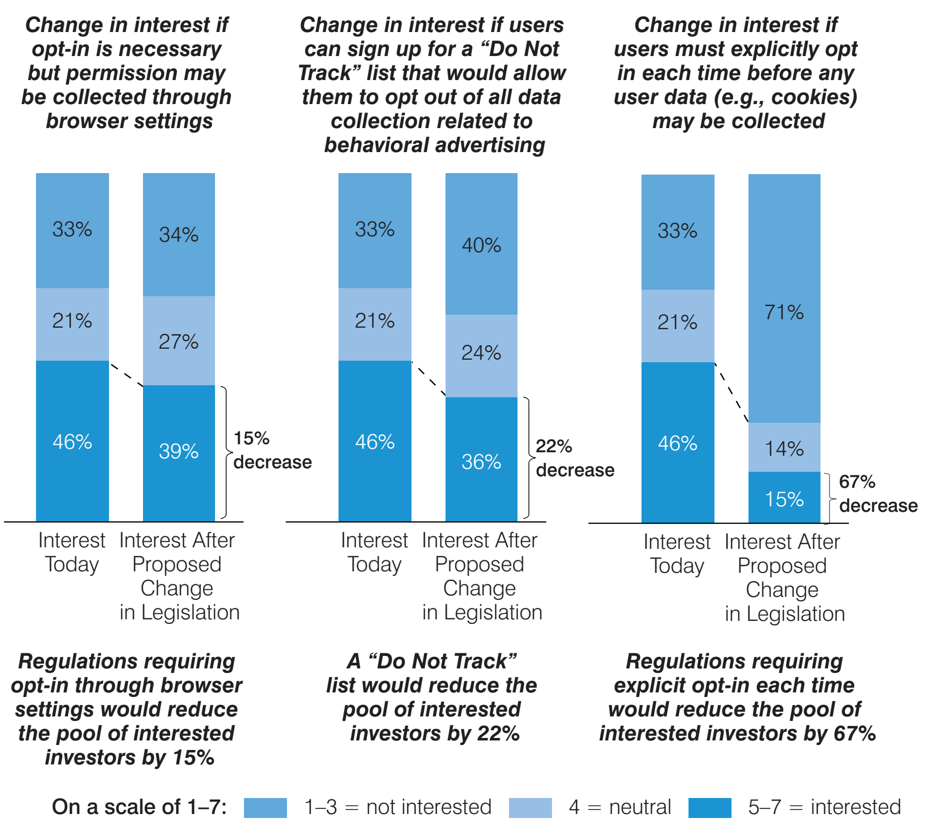
While our findings indicate that opt-in laws would have a generally negative impact on investment, the effect of the regulation could vary depending on how the law is implemented. To that end, we asked respondents about three specific potential opt-in regulations:

- Consent can be achieved through default browser settings (we assume opt-in as the default setting).
- Users can sign up for a “Do Not Track” list that allows them to opt out of all data collection related to behavioral advertising.
- Users must explicitly opt in every time they visit a site before any user data can be collected.

Our data shows that as these regulations become more stringent, their negative impact on investment increases (*see Exhibit 10*).

- The pool of interested investors would decrease by 15 percent if consent could be achieved through the user’s default browser settings (we assume opt-in as the default setting).

Exhibit 10
Investment Interest Declines as a Function of Degree of Stringency of Opt-in Regulation



Source: Booz & Company analysis

- Introducing a “Do Not Track” list would decrease the pool of interested investors by 22 percent.

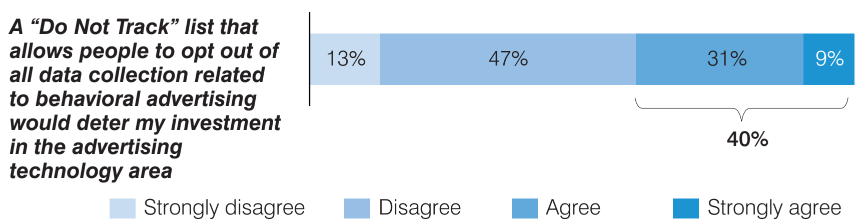
- Calling for users to explicitly opt in each time for any user data to be collected would decrease the pool of interested investors by 67 percent.

Furthermore, when asked directly if they believed that a “Do Not Track” list would deter their investment, 40 percent of respondents agreed (*see Exhibit 11*). This does not indicate, however, that respondents who disagreed would support a “Do Not Track” list.

We also analyzed the degree to which various factors in addition to the regulatory environment, including the economy, the amount of competition, and the expected return, would affect investment decisions. The results suggest that, of the variables tested, more than 40 percent of the decision to invest in advertising technology companies is driven by the legal environments (*see Exhibit 12*).

Exhibit 11
Investment Interest Would Decline if a “Do Not Track” List Were Put in Place

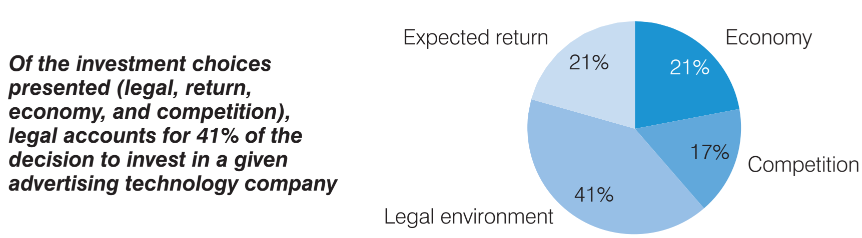
40% OF INVESTORS WOULD BE DETERRED FROM INVESTING IN ADVERTISING TECHNOLOGY COMPANIES IF THERE WERE A “DO NOT TRACK” LIST ALLOWING OPT-OUT OF DATA COLLECTION



Source: Booz & Company analysis

Exhibit 12
The Importance of Various Factors in Making Early-Stage Investment Decisions

SHARES OF IMPORTANCE:
AVERAGE IMPORTANCE OF EACH VARIABLE IN DETERMINING PREFERENCE FOR INVESTING ENVIRONMENT

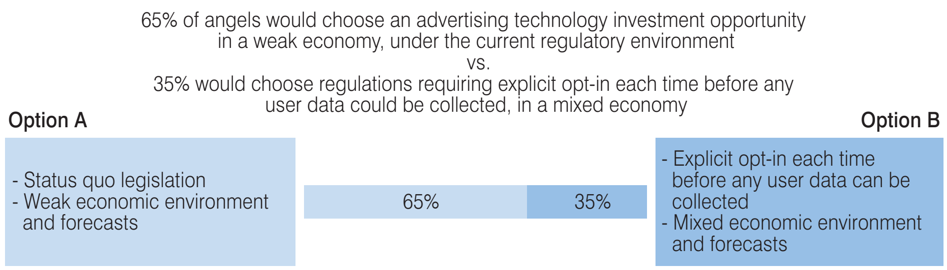


Source: Booz & Company analysis

Even trade-offs for a stronger economy do not offset investors' unwillingness to accept opt-in regulations. In head-to-head simulations of different investing environments for angels, our study found that 65 percent of angels would prefer making an investment under today's regulations in a weak economy to making an investment under a regime requiring an explicit opt-in each time data is collected in a mixed economy (*see Exhibit 13*).

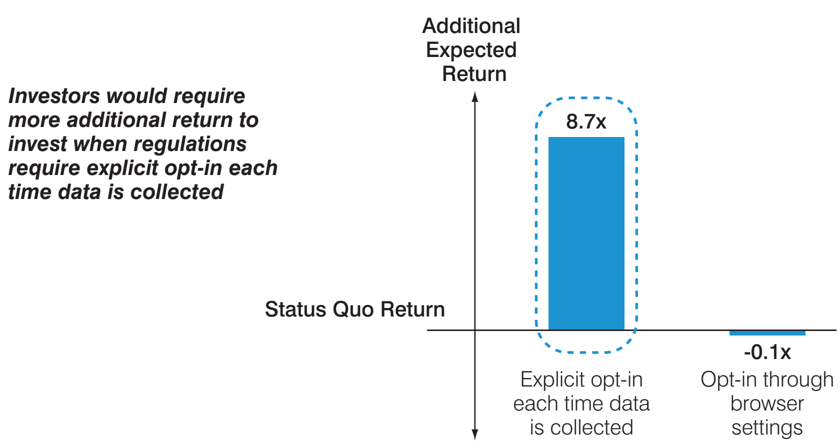
By including expected returns as one of the factors in our study, the analysis allows us to quantify the higher returns investors would demand to make them indifferent to a variety of regulatory regimes. The results are consistent with our earlier results: Investors would need an additional expected return of approximately 9x their original investment in order to feel indifferent about investing in an explicit opt-in regime versus the current privacy regime with no opt-in regulations. According to estimates by the Kauffman Foundation, the average return on angel investments is roughly 3x the initial investment.[19] Thus, angels would require a total return of 12x their original investment to invest in advertising technology companies under a regime requiring an explicit opt-in each time data is collected (*see Exhibit 14*). This demonstrates a strong preference for the current regime and suggests that investment in advertising technology companies

Exhibit 13
Angel Head-to-Head Choices of Regulations in Different Investing Environments



Source: Booz & Company analysis

Exhibit 14
Expected Returns Under Various Regulatory Regimes



Source: Booz & Company analysis

would decline under a privacy regime in which an explicit opt-in was required each time data was collected.

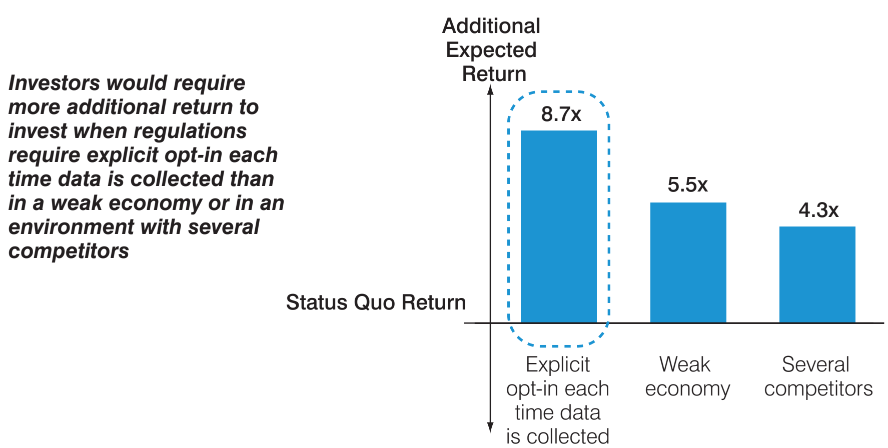
In a comparison of the effects on investment of opt-in and the effects of varying levels of the economy and competition, the results again showed that investors would need to be compensated more to move from the current regulatory environment to a privacy regime of explicit opt-in each time data is collected than to move from a "mixed" economy to a "weak" economy, or from an environment with few competitors to one with several (*see Exhibit 15*).

The implication is clear: An explicit opt-in regulation would have a more negative impact on investment in the advertising technology space than either a weak economy or a crowded competitive environment would have.

On the other hand, a regulatory regime under which consent is achieved through a user's browser settings (assuming the default setting is opt-in) would not appreciably affect investors' willingness to invest. This is mostly consistent with our earlier results, which suggest that this type of opt-in regulation would have a relatively small impact on investment.

Our results indicate that opt-in regulations of any sort would have a negative impact on investment, and that a regulation requiring users to explicitly opt in each time data is collected would have a particularly strong negative effect. Finally, a "Do Not Track" list would have a similarly negative impact on investment.

Exhibit 15
Different Factors Affect the Level of Investment Returns Expected Differently



Source: Booz & Company analysis

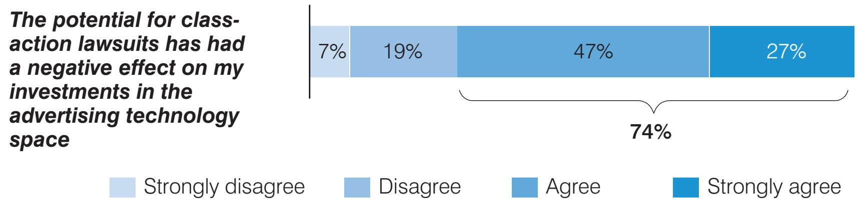
Class-Action Lawsuits

The possibility of changes in regulations that would increase the likelihood of class-action lawsuits against companies that violate privacy laws is also of concern to investors. So we also tested investor willingness to invest in advertising technology companies under these circumstances. When asked directly if a greater potential for such class-action lawsuits would have a negative impact on their investments, 74 percent of angels agreed that it would (*see Exhibit 16*).

We asked the VCs we interviewed the same question, and a substantial majority of them agreed as well. Taken together, these results are consistent with our finding that 89 percent of angels are uncomfortable investing in legal environments in which the amount of damages in the event of liability is uncertain and potentially large, which is frequently the case in class-action lawsuits (*see Exhibit 17*).

Exhibit 16
Investor Sentiment Under Increased Likelihood of Class-Action Lawsuits

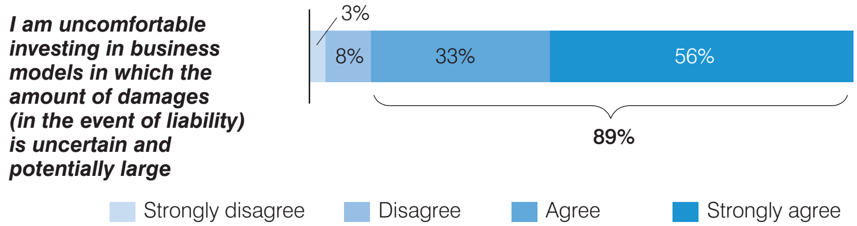
74% OF INVESTORS REPORT THAT THE POTENTIAL FOR CLASS-ACTION LAWSUITS HAS HAD A NEGATIVE EFFECT ON INVESTMENTS IN ADVERTISING TECHNOLOGY COMPANIES



Source: Booz & Company analysis

Exhibit 17
Willingness to Invest When the Amount of Damages Is Potentially Large

89% OF INVESTORS ARE UNCOMFORTABLE INVESTING WHEN THE AMOUNT OF DAMAGES IS UNCERTAIN AND POTENTIALLY LARGE



Source: Booz & Company analysis

Again, the results are clear: Decreasing the likelihood of class-action lawsuits would have a positive impact on investment.

In summary, our study suggests that opt-in regulations would indeed have a negative impact on investment in advertising technology companies. Furthermore, investors are uncomfortable investing in environments where damages in the event of liability are uncertain and potentially large, particularly in environments where the potential for class-action lawsuits is significant.

Chapter 6
IMPLICATIONS FOR REGULATORS

The results of our research suggest that regulations requiring content providers to obtain opt-in from users would have an adverse effect on early-stage investments in the advertising technology space. These investments are particularly important given their size and their economic impact on the ad-supported Internet. Specifically, our findings suggest the following:

- The regulatory environment is just as important a driver of early-stage investment decisions as is the state of the economy, the degree of competition in the space, and even the expected return.

- Requiring users to opt in each time data is collected would likely have a more negative effect on investment than would a weak economy or a more competitive landscape.

- Creating a "Do Not Track" list so users can summarily opt out of all data collection would also have a negative impact on investment.

- Regulations allowing default browser settings as a means of achieving consent would have a smaller negative impact on investment than the more onerous forms of opt-in mentioned above.

Given these findings, it is important that regulators consider the following when drafting potential new regulations:

- Early-stage investment is a critical component of the process of new-business formation. The impact of new regulations on the willingness of angel investors and venture capitalists to invest should be fully understood and taken into account before new regulations surrounding opt-in are considered.

- Reaching out to local early-stage investors will provide regulators with an opportunity to understand investors' specific assessments of potential regulations and their implications for the level of future investment.

Furthermore, our study found that an unclear or ambiguous legal environment, particularly with regard to class-action lawsuits, and uncertain, potentially large damage awards, makes early-stage investors uncomfortable with investing in that space. To address the various factors involved, the following actions could be taken to increase levels of investment:

- Identify areas of privacy regulations that are particularly prone to litigation, and work to clarify the regulations so that advertising technology companies acting in good faith are less likely to be engaged in litigation.

- Assess the full set of economic implications when considering any new regulations, especially regulations that could lead to large compliance costs.

Appendix
METHODOLOGY

This study took the form of an online survey of angels and a set of interviews with prominent venture capitalists. The angel survey was designed to serve as a broad measure to quantify investing behavior, while the interviews offered a more qualitative perspective and helped add color to the otherwise purely numerical results. The interviews also helped generate hypotheses about angel attitudes, which were then incorporated into the quantitative survey. In combination, the two provide a thorough perspective on early-stage investing behavior.

We worked with Keiretsu Forum, a top angel organization, to provide us access to their membership, which consists of wealthy U.S. and international angel investors, as well as guidance on how to design and administer the survey. In addition, Keiretsu Forum connected us with more than half a dozen other angel groups, including Alliance of Angels, Angel List, Angel Resource Institute, Band of Angels, Boise Angel Fund, Dingman Angels, Harvard Angels, Oregon Entrepreneurs Network, PA Angel Network, Plug and Play Tech Center, Sacramento Angels, and Sand Hill Angels that were very helpful in allowing us to contact their members as well. This diversity of groups allowed for a more geographically diverse sample and helped increase the sample size.

A total of 189 angels, all of them self-identified as U.S. accredited investors, completed the Web survey and were verified as valid respondents. Incomplete and duplicate responses were removed, as well as those from respondents who spent less than five minutes on the survey, as this was deemed too short a time to have completed the survey thoughtfully; the mean response time was 17 minutes. (A copy of the entire survey is available on request.)

In addition to our standard analysis of the results, we also conducted what is called a conjoint analysis to arrive at some of our results. This is a statistical modeling technique used to gauge the value of discrete components of a complex value proposition or decision. Conjoint analysis is particularly valuable for understanding *trade-offs* among attributes, and thus can provide insights not otherwise captured through the answers to direct questions.

For the conjoint section of the survey, respondents were presented with an investment in a hypothetical DCI. We held constant the internal variables of the investment, such as the company's business description, management team, capital structure, financial situation, and exit strategy. We then varied several external variables relating to the investing environment, such as the state of the economy, degree of competition, legal environment, and expected return. By forcing respondents to choose among different scenarios, we were able to tease apart statistically the underlying preferences through the observed trade-offs. The results are shown in Chapter 5. (A more complete description of how we conducted the conjoint analysis is available on request.)

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