Briefing

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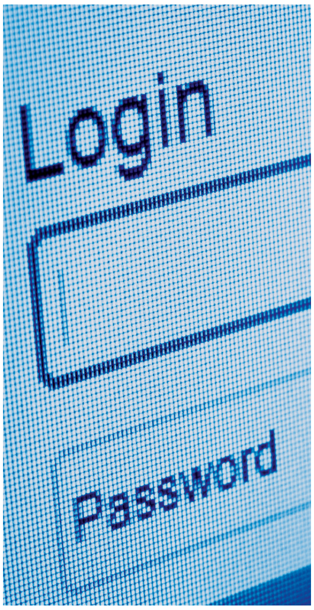

The Impact of E.U. Internet Privacy Regulations on Early-Stage Investment

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 with 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 E.U., 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 60 angel investors and interviewed more than 20 prominent venture capitalists in the U.S. and 10 from Europe 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.

The impetus for this paper arose during the creation of our recent report on privacy law in the United States. In that paper, we examined the effects of various proposed changes in privacy regulations on angel and venture capitalist sentiment regarding investing in technology companies. In preparing it, we spoke to a large number of angel and venture capital investors, who provided us with many critical insights. The U.S. report is titled "The Impact of U.S. Internet Privacy Regulations on Early-Stage Investment: A Quantitative Study."

Broad interest in the first paper, as well as the similarities in privacy law between the U.S. and Europe and the overlap in the investment communities, prompted the question: How would reactions among European investors to changes in privacy regulations compare with those of their U.S. cohorts? Here, we test our initial hypotheses with the European investment community in order to better understand the similarities and differences with the U.S. investment community. The results were interesting.

This report is one of two on European investment attitudes toward Internet companies. The other report focuses on copyright regulations and is titled "The Impact of E.U. Internet Copyright Regulations on Early-Stage Investment: A Quantitative Study."

This report 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, as well as several European-based groups, including BCN Business Angels, Beer & Partners, Bulgarian Business Angels Network, Digital Assets Deployment, EBAN, and Investir en Direct, also participated in our study, and we gratefully acknowledge their support.

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GSR Ventures	Kemp Little LLP
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Jetty Capital	Nauta Capital
Next World Capital	Okuri Ventures
OATV	Tetuan Valley
Rho Capital Partners	Sofinnova Ventures
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Selby Ventures	
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This report was financed by Google Inc. and independently researched and written by Booz & Company. In creating it, we drew on expertise from Booz & Company's consumer, media, and technology practice, from our own primary research, and from academic and public research and publicly available information.

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 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 €3.8 billion into early-stage companies in the European Union. 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. Estimates suggest that the ad-supported Internet generates roughly €100 billion of consumer surplus each year in Europe and the United States. At the heart of this efficiency are the advertising technology companies, which collect and analyze user data in order to increase the effectiveness 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 60 European angel investor members of professional angel networks and interviewed more than 20 prominent U.S. venture capitalists and 10 prominent European venture capitalists. Our principal findings support the following points:

- *Fully 63 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 an even more negative impact, reducing the pool of interested angel investors by 82 percent; just 10 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.*

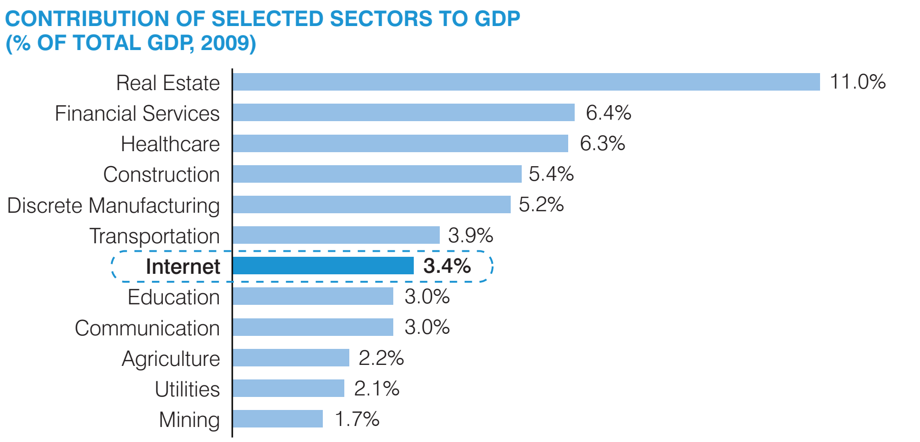
In light of these results, lawmakers might wish to take into account the angel and venture capital community when considering new privacy regulations.

Chapter 1
BACKGROUND ON INTERNET GROWTH

The creation of the global Internet infrastructure and 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, dramatically changing the way information is collected, distributed, and used. 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*). Estimates place the Internet economy in Europe alone at 4.1 percent of GDP in 2010.[1]

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, and mobile access—most of which barely existed as recently as a decade ago—are now expected to drive the Internet's future growth. Revenue from the Internet industry in Europe is expected to grow at a 7.1 percent compound annual growth rate

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



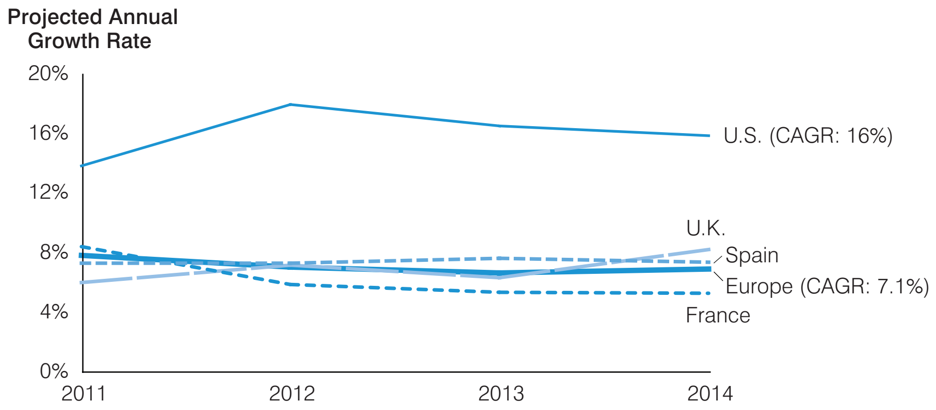
Source: Organisation for Economic Co-operation and Development; McKinsey Global Institute

(CAGR) over the next three years (*see Exhibit 2*),[2] as Internet usage reaches three out of every four people by 2016 (*see Exhibit 3*).

As the Internet grows and its impact on society increases, regulation pressures will likely increase as well. The manner in which governments handle these issues will have a lasting impact on how the Internet evolves.

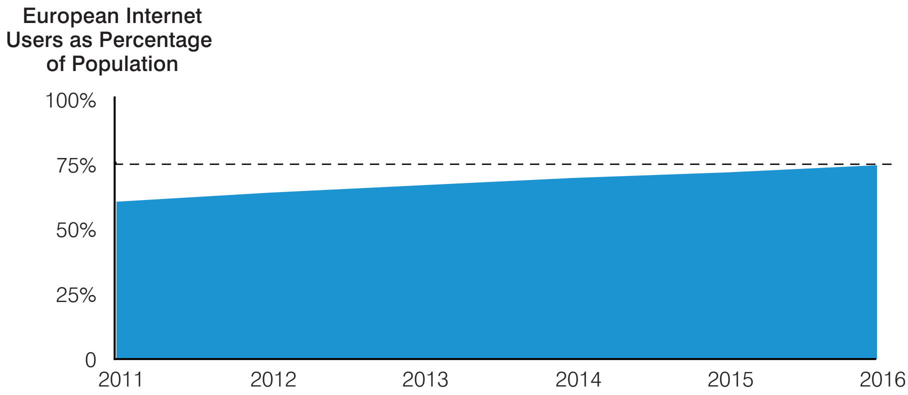
One key area in which policies and regulations are likely to have a significant effect is at the intersection of the Internet and early-stage capital investment. The next phase of the Internet's development will require the contributions of many parties as new technologies are developed and launched 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, particularly from 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 2
Internet Industry Projected Revenue Growth Rates, 2011–14



Source: "The European Internet Industry and Market," FI3P, June 2011; IDC Worldwide New Media Market Model, 1H11, August 2011

Exhibit 3
Projected Internet Usage in Europe, 2011–16



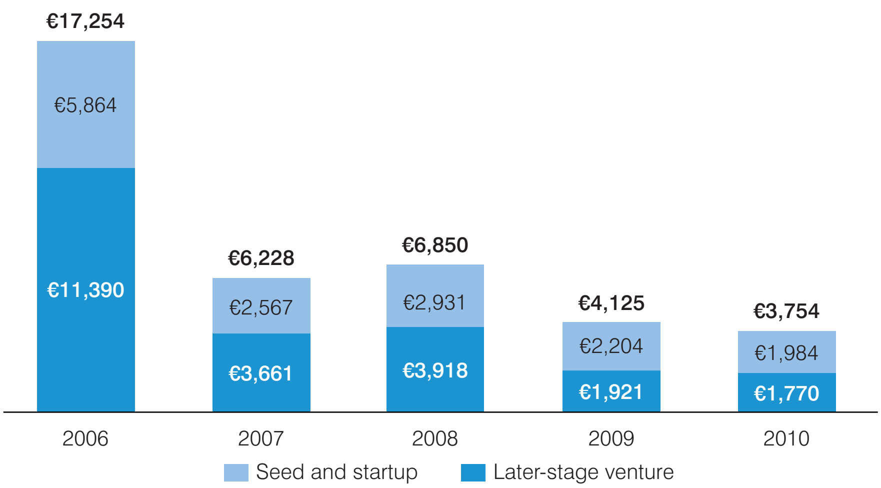
Source: "The European Internet Industry and Market," FI3P, June 2011

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.[3] Taken together, angel investors and VCs are the primary source of this entrepreneurial funding, investing nearly €3.8 billion in Europe in 2010 alone (*see Exhibit 4*).[4] In fact, angels and VCs were early investors in many companies that are now household names, including the following global companies: Apple, Cisco, Dell, eBay, Facebook, Google, Intel, and Microsoft.[5]

The high-tech sector continues to be a major investment focus for angels and VCs in Europe, accounting for 47 percent of early-stage investment in 2010. That year, seed and startup investors funded 2,078 new ventures in Europe, for a total of nearly €2 billion in invested

Exhibit 4
Early-Stage Investment in Europe, 2006–10



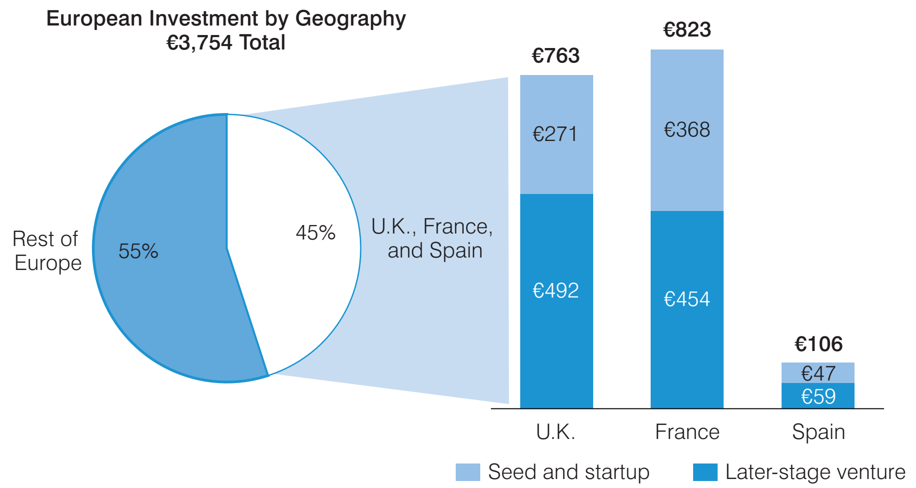
Note: In millions of euros. Numbers may not add up due to rounding.
Source: European Venture Capital Association Yearbook 2011

capital, more than the total amount invested in later-stage ventures.[6] The U.K., France, and Spain contributed 45 percent of Europe's total investments in early-stage companies, with the U.K. and France investing substantially more than Spain (*see Exhibit 5*).

In comparison to 2009, these countries' 2010 early-stage investments moved in different directions. European investment as a whole declined in the range of 7 to 10 percent. The U.K. saw a significant drop in seed and startup funding and almost no change in later-stage venture funding, while France and Spain had slight increases in seed and startup investment and major decreases in later-stage ventures (*see Exhibit 6*).

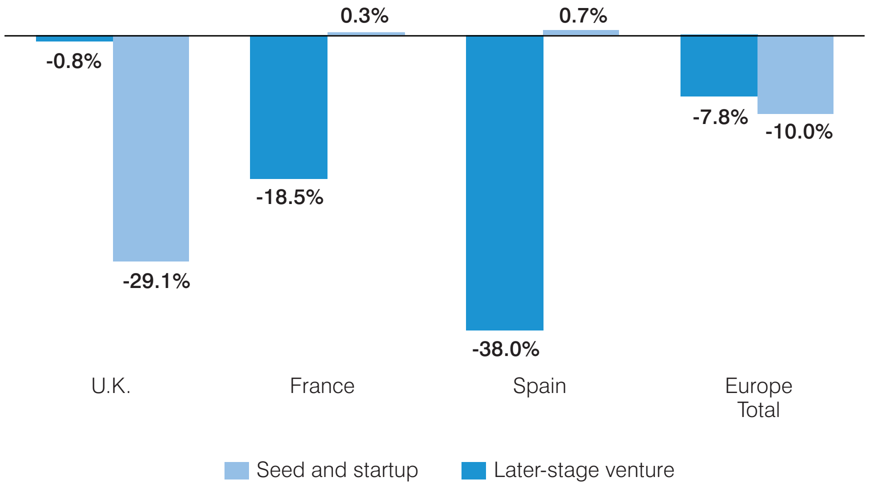
In addition to injecting capital, angel investors often play a hands-on role in the deals they invest in by providing entrepreneurs with mentoring, business advice, and contacts. It has been suggested that these "softer" benefits of angel investing can have as great an impact on the success of a startup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

Exhibit 5
Early-Stage Investment in Europe, by Region, 2010



Note: In millions of euros. Numbers may not add up due to rounding.
Source: European Venture Capital Association Yearbook 2011

Exhibit 6
Change in Investment Among European Countries, 2009–10



Source: European Venture Capital Association Yearbook 2011

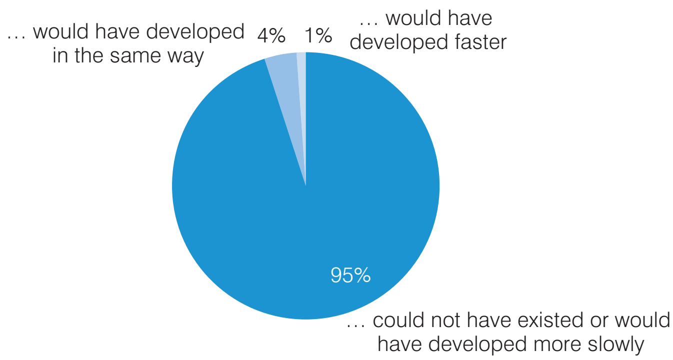
VCs also play a critical role in providing capital for entrepreneurs. They typically invest during the later stages of a startup's growth, and often make much larger individual investments. And they usually play a similarly important hands-on role in the companies in which they invest.[8] Indeed, European companies report positive results from venture capital. Fully 95 percent of European companies that received venture capital investment reported that, without the investment, they could not have existed or would have developed more slowly (*see Exhibit 7*). Similarly, almost 60 percent indicated that they would not still exist without the contribution of venture capital. In addition, an average of 46 jobs were created by companies after receiving an infusion of venture capital, and there were an estimated 1,046 later-stage venture infusions in Europe in 2010.[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 follow-on study, we surveyed 60 angels to better understand how potential regulatory changes might affect their investment behavior and interviewed 10 prominent European venture capitalists to gain a more qualitative perspective on their views.

In this study, we have chosen to concentrate on digital privacy laws and regulations. Digital privacy is a timely issue, given the European Commission's announcement of plans to update its privacy laws, and it is particularly relevant to technology companies—an important area of focus for early-stage investors.

Exhibit 7
Venture Capital Influence on Growth of New Companies

95% OF COMPANIES REPORT THAT, WITHOUT VENTURE CAPITAL, THEY COULD NOT HAVE EXISTED OR WOULD HAVE DEVELOPED MORE SLOWLY



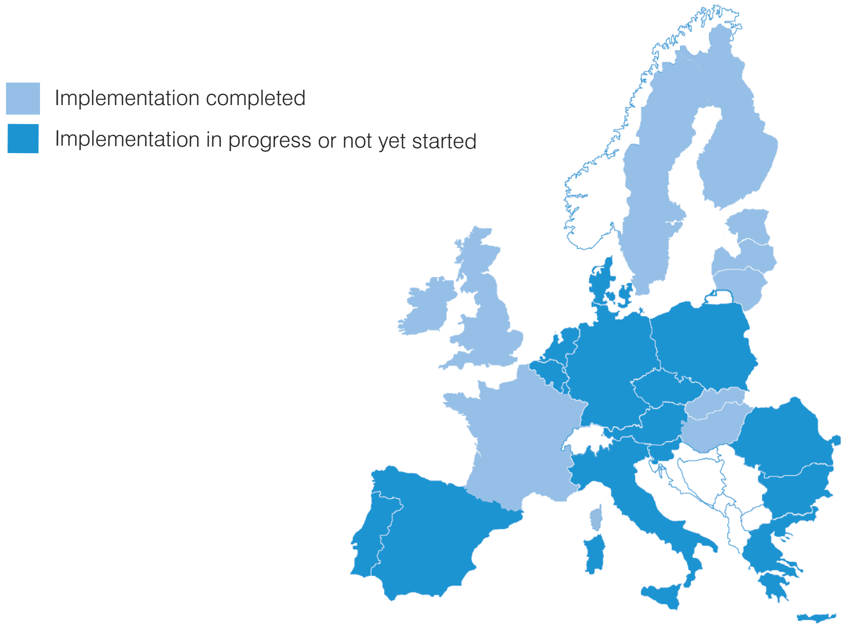
Source: "Survey of the Economic and Social Impact of Venture Capital in Europe," European Private Equity & Venture Capital Association, June 2002

Chapter 3
THE CURRENT AND FUTURE PRIVACY LANDSCAPE

In order to determine which changes in E.U. privacy regulations to focus on, we consulted several attorneys with experience in the space. Privacy includes a broad set of topics, including data quality and security, transparency of data use, filing requirements, and the topic of this paper: cookies and consent of users to collect and use data. All the attorneys agreed that the requirements for providing notice and obtaining consent from users when certain data is being collected are an important and timely issue, given the current regulatory environment in the European Union.

The current online privacy landscape in the E.U. is dynamic and complex. Beginning with the E.U. Data Protection Directive in 1995, there have been several efforts to regulate online privacy practices for the E.U. member nations. These regulations, which were already more stringent than those in the U.S., have been further strengthened by the latest E.U. directive, in 2009, which requires websites in member nations to obtain consent from a user before they can store or receive any information from that user's device.[10] While the regulations make clear that users must opt in before any data can be collected, through cookies or other means, the manner in which this opt-in is to be obtained is unclear. Implementation of the E.U. directive is open to some interpretation at the country level, and E.U. member nations are currently debating how this will be done. Countries are at different stages of implementation: Some have fully implemented the directive, while others have yet to complete their legislation (*see Exhibit 8*). Either way, each nation's legislation is unique, and this country-by-country method may create discontinuities in laws across Europe.

Exhibit 8
Implementation of the New E.U. Directive for the 27 European Union Countries, as of November 2011



Source: Bird & Bird

Then, in November 2010, the European Commission announced its intent to further update the 1995 directive, in addition to the 2009 directive.[11] In the ensuing months, a series of propositions surfaced. Several of them concern consumer rights and overarching privacy principles, including "data portability" (the right to access one's data at any time), "right to be forgotten" (right to have one's data deleted), "privacy by design" (making user data private by default), and "accountability" (companies take responsibility for assessing risks of using user data). These ideas have sparked a great deal of debate, and it remains unclear how they would be effectively implemented and enforced. But they point toward a more stringent set of privacy laws.

In addition, the European Commission raised a number of specific issues that require reconciliation. For example, the rise of cloud computing raises new questions regarding who owns and controls personal data. Access to social networking sites must be reconciled with the need to protect minors. And the transfer and use of data across country lines, to geographies with different privacy laws, must also be addressed.

All of these issues remain outstanding. However, in November 2011, the European Commission announced plans to publish its proposals for changes in the current digital privacy laws in January 2012, together with explicit directions regarding data protection, opt-in, data usage, consumer rights, and more.[12]

Fundamental to the debate is the issue of opt-in. At what point should users provide consent to have their data collected—before, during, or after visiting a website? What constitutes a sufficient willingness to opt in—a general indication by users that would cover all websites, or explicit permission for each and every website? Answers to these questions will guide how the E.U. forms its new privacy policies.

In considering the likely directions for European privacy legislation, we interviewed lawyers regarding the ways that opt-in regulations might be implemented. They suggested three potential options:

- Creating a "Do Not Track" list that would allow users to summarily opt out of all data collection by placing themselves on the list. Though this option puts the onus on users, who must actively *remove* themselves from data collection, rather than actively *consent* to data collection, it remains part of the debate in the public discourse around privacy.

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

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

This study examines the effect that each of these potential options might have on early-stage investment.

Chapter 4
THE ADVERTISING TECHNOLOGY BUSINESS MODEL

To assess the potential changes in angel investor sentiment as a result of modifications to the current privacy regulation regime, we focused on early-stage investment in advertising technology companies. Advertising is a primary means of financing online content, given that most content providers rely primarily on online marketing and advertising to produce the revenues necessary to create and publish their content.[13] Estimates suggest that the ad-supported Internet generates roughly €100 billion of consumer surplus each year in Europe and the U.S. combined. And more than 40 percent of consumers could stop using the Internet if they were required to pay for content in a way that provided the same revenue to content providers as they currently receive from advertising.[14]

Advertising technology companies sit at a critical juncture of 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. The sophisticated algorithms they employ to gain customer insights based on their Internet usage history enable them to determine which ads should be presented on a content provider's page whenever a particular customer visits.

This "behavioral targeting" has been shown to enhance the efficiency of advertising. In fact, a recent study suggests that in the U.S., where data collection laws are less stringent than they are in the E.U., conversion rates for targeted ads are more than twice those of non-targeted ads. Moreover, U.S. advertisers are willing to pay content providers an average of 2.68 times more for behaviorally targeted ads than for non-targeted ads.[15] Indeed, research suggests that after implementation of the 2002 E.U. directive, which created more stringent regulations on data collection for behavioral targeting, advertising effectiveness decreased by roughly 65 percent. To offset that loss in effectiveness, it is estimated, advertisers would need to spend an additional US$14.8 billion.[16]

Advertising technology companies are constantly competing to innovate new ways of increasing the differential in conversion rates between targeted and non-targeted ads, and thus raise the prices advertisers are willing to pay 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 far-reaching implications not only for the advertising technology companies themselves but also for the online content providers they serve and support.[17]

Furthermore, the data advertising technology companies collect can also 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. In light of these many factors, the goal of our empirical analysis was to determine whether changes to privacy regulations would impact 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 60 angel investors and interviewed more than 20 U.S. venture capitalists and 10 European venture capitalists to determine what impact, if any, changes to privacy regulations would have on their investment decisions.

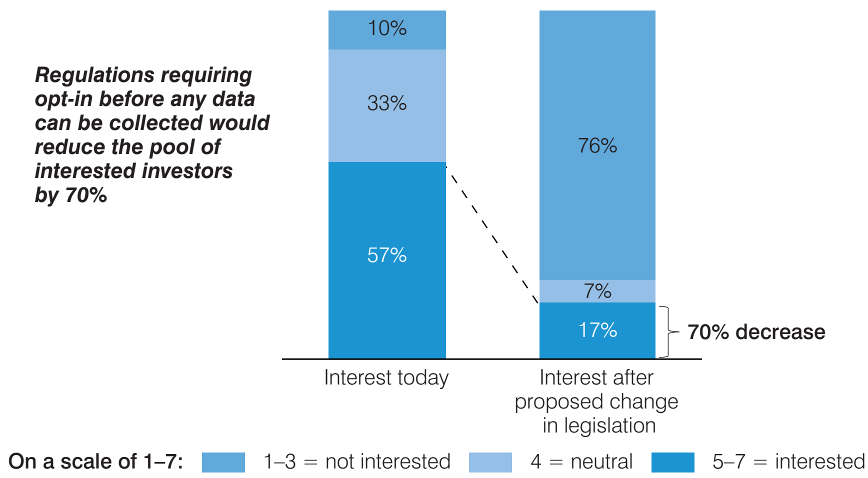
While it is important to note that we surveyed and spoke with fewer angels and VCs for this report than for the U.S. report, the results here substantially confirmed the U.S. results. Indeed, angels in Europe reported an even greater decline in investment interest under the various proposed opt-in regulations than U.S. angels did. Moreover, the threat of class-action lawsuits and large damages in the event of their success had a similarly deterring effect on European angel investment interest as it did for U.S. angels.

In this section we examine the results as they pertain to the effect 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 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 70 percent given any sort of new opt-in regulation (*see Exhibit 9*). This figure is similar to the 65 percent decrease in interest among U.S. angels.

Exhibit 9
Drop-Off in Investment Interest Among Angel Investors Under Any Sort of New Opt-In Regulation

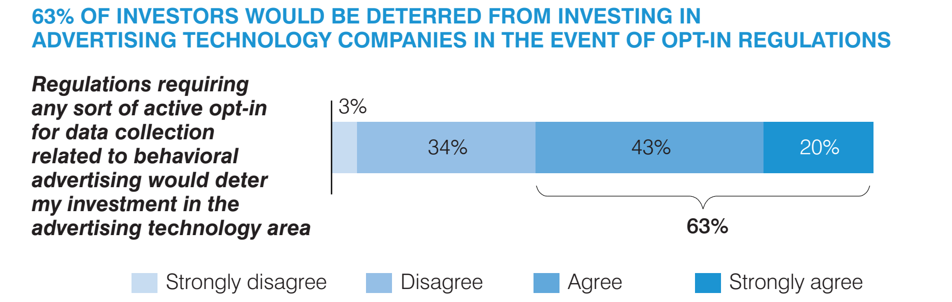


Note: Uses a small sample base for calculations.
Source: Booz & Company analysis

Moreover, a substantial majority—63 percent—of investors also agreed that any sort of active opt-in requirement would deter investment specifically in advertising technology companies (*see Exhibit 10*). Among U.S. investors, that figure was 70 percent.

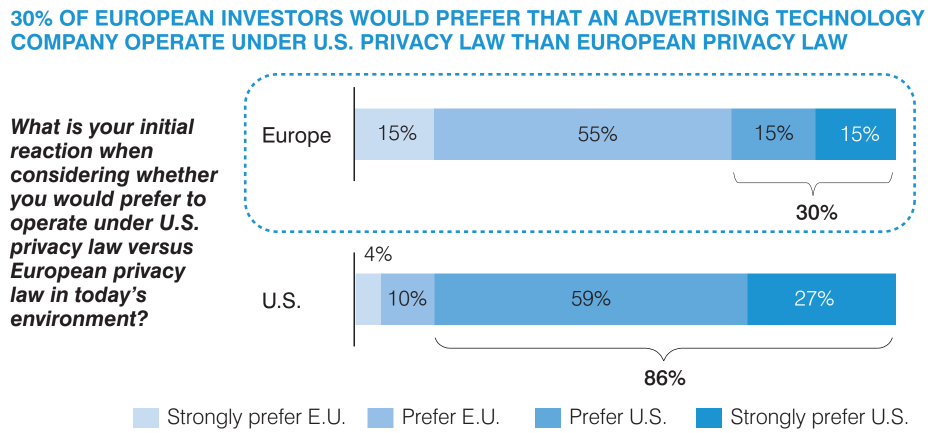
Our study also shows a strong preference among European angel investors for E.U. privacy laws, despite their stringency: 70 percent prefer European laws and 30 percent prefer U.S. laws when considering the regulatory framework surrounding an advertising technology company for investment (*see Exhibit 11*). Among U.S. angels, 86 percent prefer U.S. laws. To some degree, this preference for the laws one is familiar with is to be expected. However, the geographies differ in their strength of preference for home laws. U.S. angels prefer their own laws by 16 percentage points more than European angels do (this is the 86 percent U.S. home preference minus the 70 percent European home preference). This

Exhibit 10
Drop-Off in Investment Interest in Advertising Technology Companies Among Angel Investors Under Any Sort of New Opt-In Regulation



Note: Uses a small sample base for calculations.
Source: Booz & Company analysis

Exhibit 11
Preference for Investing in Advertising Technology Companies, E.U. vs. U.S.



Note: Uses a small sample base for calculations.
Source: Booz & Company analysis

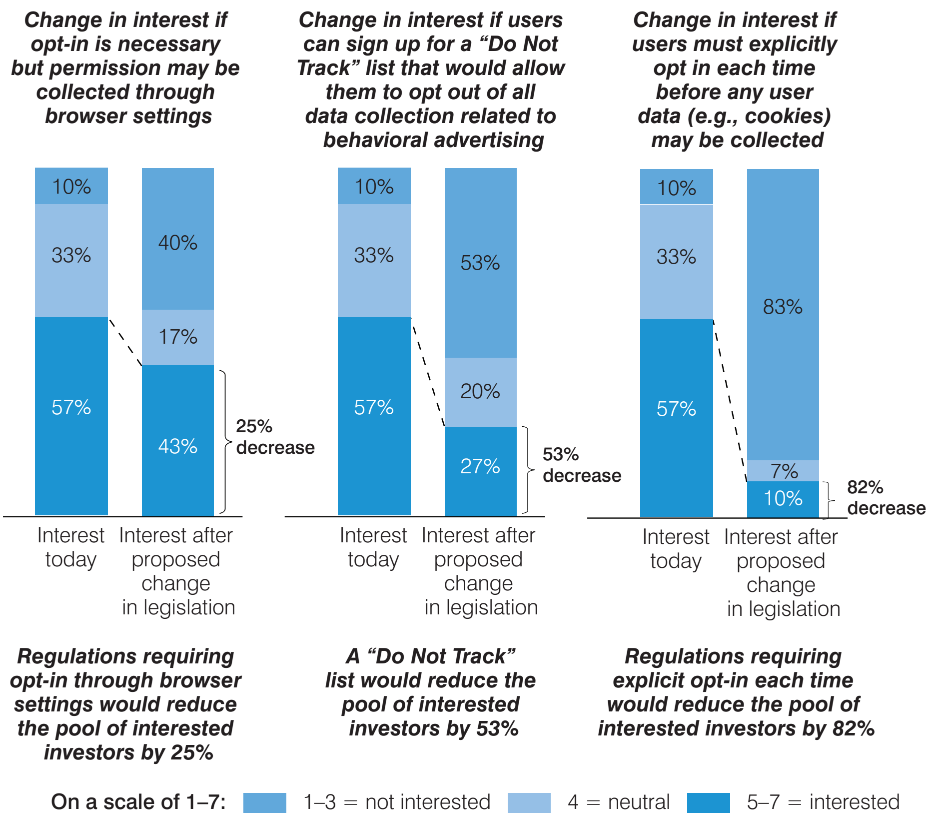
suggests that either there is a difference in point of view between U.S. and European angel investors—perhaps European angels have a greater openness to considering other countries' regulations—or there are significant differences in the two geographies' privacy laws that make them more or less attractive to investors.

While investors may believe 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 12*).

Exhibit 12
Investment Interest Declines as a Function of Stringency of Opt-In Regulation



Note: Uses a small sample base for calculations.
Source: Booz & Company analysis

- The pool of interested investors would decrease by 25 percent if consent could be achieved through the user's default browser settings (we assume opt-in as the default setting).

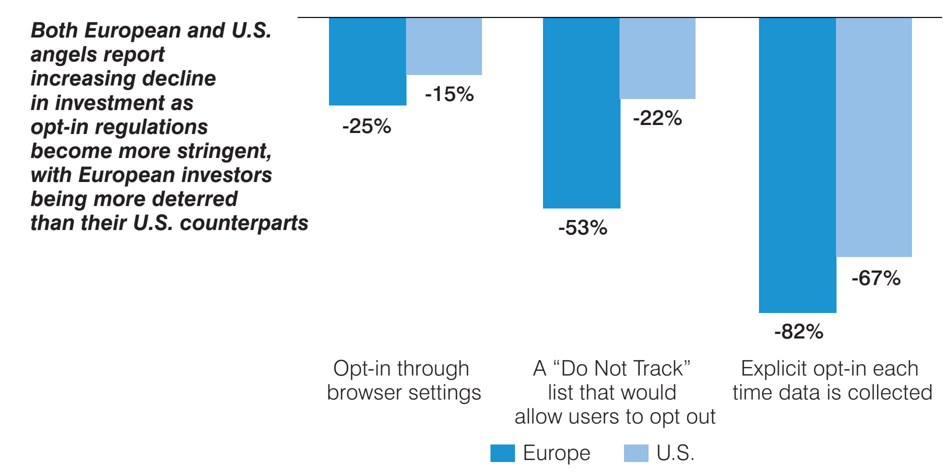
- Introducing a "Do Not Track" list would decrease the pool of interested investors by 53 percent.

- Calling for users to explicitly opt in each time for any user data to be collected would decrease the pool of interested investors by 82 percent.

Investment interest declined more among European angels than among U.S. angels across all three proposed levels of opt-in. The impact of a "Do Not Track" list was especially strong among European angels—more than double the deterrent effects for U.S. angels (*see Exhibit 13*).

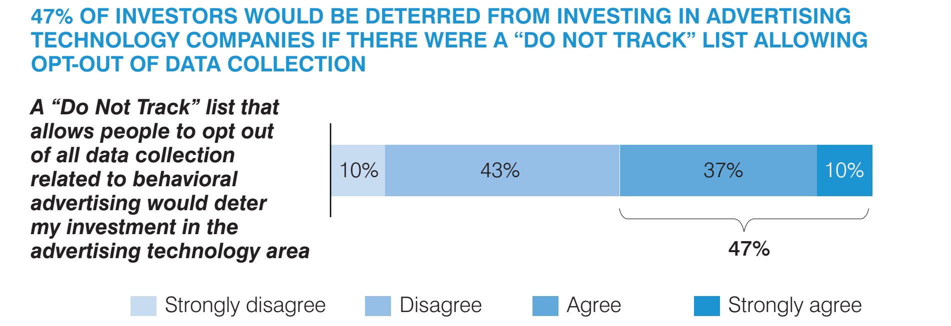
Furthermore, when asked directly if a "Do Not Track" list would deter their investment interest, 47 percent of respondents agreed (*see Exhibit 14*). This does not indicate, however, that those who disagreed with the statement would support a "Do Not Track" list.

Exhibit 13
Opt-In Regulations and Investment, Europe vs. U.S.



Note: Represents decline in category of "interested" angels in Exhibit 12. Uses a small sample base for calculations.
Source: Booz & Company analysis

Exhibit 14
Investment Interest Would Decline if a "Do Not Track" List Were Put in Place



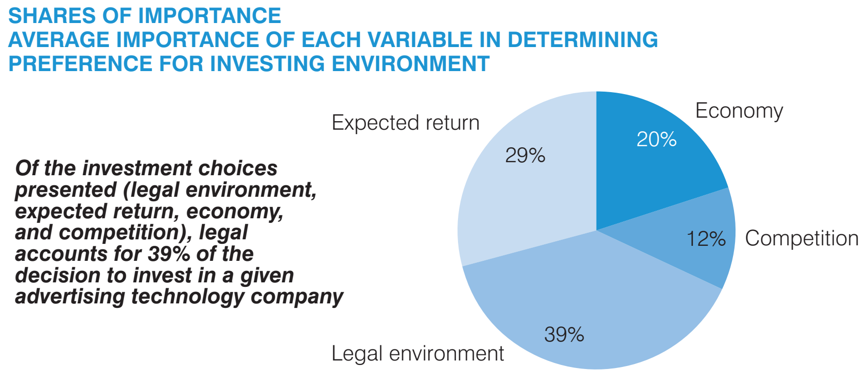
Note: Uses a small sample base for calculations.
Source: Booz & Company analysis

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 presented, 39 percent of the decision to invest in advertising technology companies is driven by the legal environments we tested (*see Exhibit 15*). This is greater than the impact of any of the other three variables—the greatest of which is the expected return—and is nearly identical to the U.S. figure of 41 percent.

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 68 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 16*). This result is very close to that of U.S. angels, 65 percent of whom share the same sentiment.

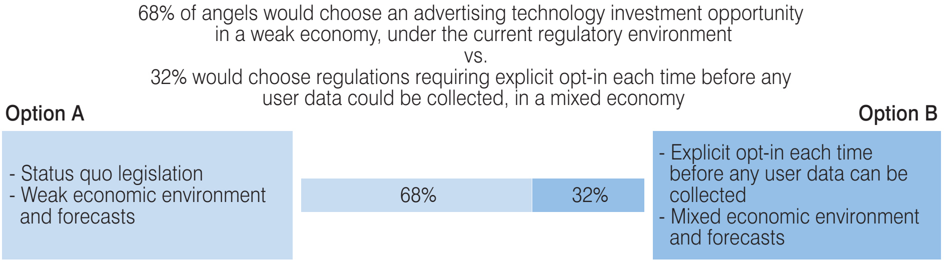
By including expected returns as one of the factors in our study, the analysis allows us to quantify the higher returns investors would demand to make them indifferent to a variety of regulatory regimes. The results are consistent with our earlier results: Investors would need an additional expected return of approximately 5.8 times their original investment

Exhibit 15
The Importance of Various Factors in Making Early-Stage Investment Decisions



Source: Booz & Company analysis

Exhibit 16
Angel Head-to-Head Choice of Regulations in Different Investing Environments



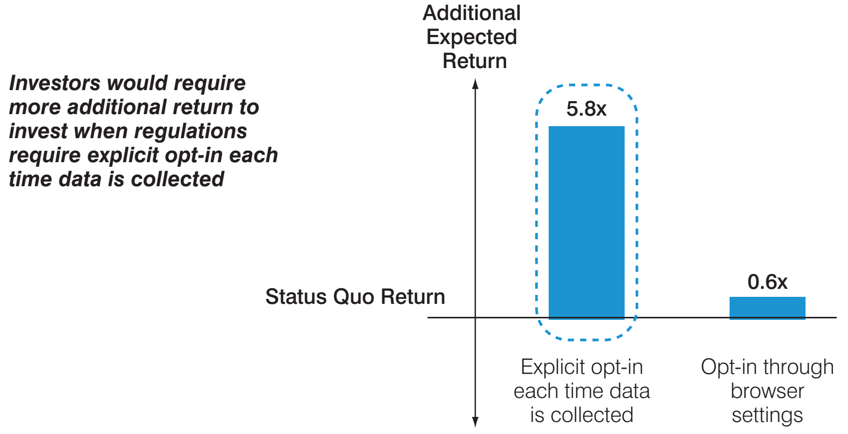
Source: Booz & Company analysis

in order to feel indifferent about investing in an explicit opt-in regime versus the current privacy regime with no opt-in regulations (*see Exhibit 17*).

According to estimates by the Kauffman Foundation, the average return on angel investments is roughly three times the initial investment.[19] Thus, angels would require a total return of 8.8 times their original investment to invest in advertising technology companies under a regime requiring an explicit opt-in each time data is collected. These results are similar to those from the U.S. survey, where U.S. angels required 8.7 times and -0.1 times additional expected returns for regimes with the explicit opt-in and opt-in through browser settings, respectively. Nevertheless, both geographies demonstrate a strong preference for the current regime, which suggests that investment in advertising technology companies would decline under a privacy regime in which an explicit opt-in was required each time data was collected.

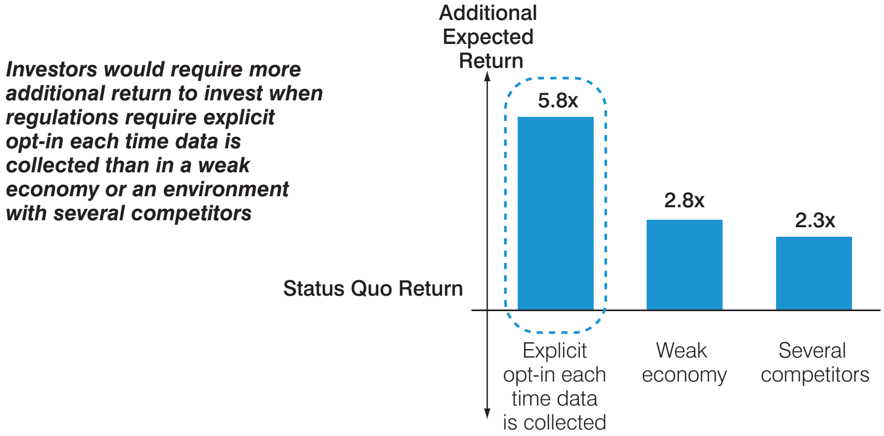
In comparisons of the effects on investment of opt-in and of varying levels of economic health or competition, the results again showed that investors would need to be compensated more to move from the current regulatory environment to a privacy regime of explicit opt-in each time data is collected than to move from a mixed economy to a weak economy, or from an environment with few competitors to one with several (*see Exhibit 18*). These results are in line with those of U.S. angels, who also reported explicit opt-in as having a greater negative effect than a weak economy or several competitors.

Exhibit 17
Expected Returns Under Various Regulatory Regimes



Source: Booz & Company analysis

Exhibit 18
Different Factors Affect the Level of Expected Investment Returns Differently



Source: Booz & Company analysis

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.

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 have a less pronounced effect on 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.

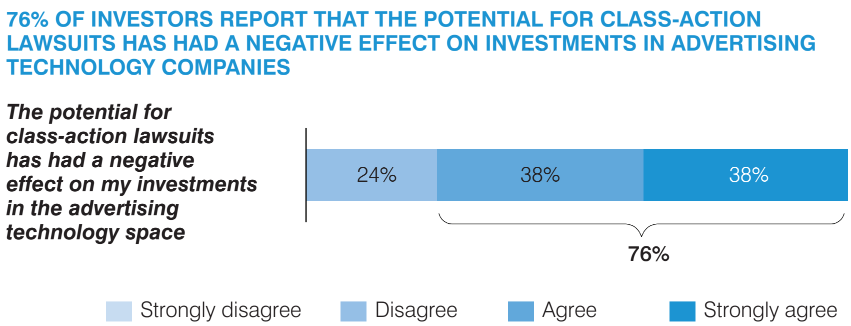
Our results show that investors view opt-in regulations of any sort as having a negative impact on investment, and that a regulation requiring users to explicitly opt in each time data is collected would have a particularly strong negative effect. Finally, a "Do Not Track" list would have a similarly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

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 another concern for investors. So we also tested investor willingness to invest in advertising technology companies under these circumstances. When asked directly if a potential for such class-action lawsuits would have a negative impact on their investments, 76 percent of angels agreed that it would do so (*see Exhibit 19*). This figure was 74 percent for U.S. angels.

This result is consistent with our finding that fully 100 percent of angels are uncomfortable investing in legal environments in which the amount of damages in the

Exhibit 19
Investor Sentiment Under Increased Likelihood of Class-Action Lawsuits



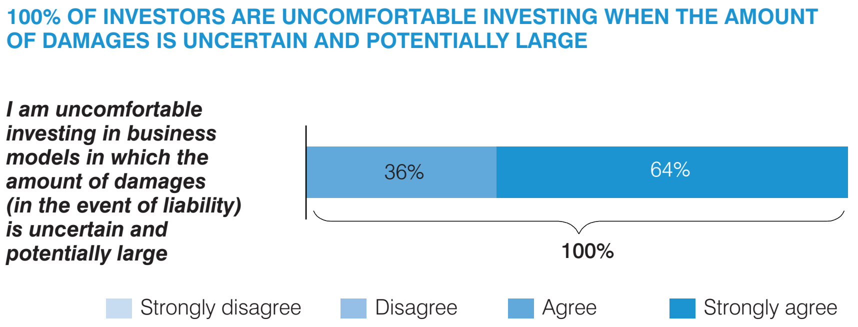
Note: Uses a small sample base for calculations.
Source: Booz & Company analysis

event of liability is uncertain and potentially large, which is frequently the case in class-action lawsuits (*see Exhibit 20*). For U.S. angels, this figure is 89 percent.

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

Overall, our study suggests that opt-in regulations would indeed have a negative impact on early-stage investment in advertising technology companies. European angels report sentiments very similar to those of U.S. angels, with even more pronounced results in most cases, indicating that the declines in investment interest among European angels would be greater than for U.S. angels. 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.

Exhibit 20
Willingness to Invest When the Amount of Damages Is Potentially Large



Note: Uses a small sample base for calculations.
Source: Booz & Company analysis

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, or 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.

- European angels might react more negatively to opt-in regulations than U.S. angels would.

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 European 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 angel investors and a set of interviews with prominent venture capitalists. The survey of angel investors was designed to serve as a broad quantitative measure of 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 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, as well as several European-based groups, including BCN Business Angels, Beer & Partners, Bulgarian Business Angels Network, Digital Assets Deployment, EBAN, and Investir en Direct. All of these groups were very helpful in allowing us to contact their members as well. This variety of groups allowed for a more geographically diverse sample and helped increase the sample size.

A total of 60 angels completed the Web survey and were verified as valid respondents. Six of them did not complete the conjoint section of the survey (see below), as we removed the conjoint questions from the survey to make it quicker and thus drive the needed sample size. 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 19 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 advertising technology company. 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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