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ABOUT THIS STUDY

Internet intermediaries drive innovation and growth on the Internet. Internet intermediary liability laws have an impact on both the expected success of intermediaries and the contribution that intermediaries make to the wider Internet.

To better understand the impact of these laws in particular on intermediary start-ups, Google commissioned Oxera to prepare this independent study. Oxera is responsible for the analysis and conclusions. Google and Oxera have jointly chosen the focus countries with the aim of reflecting a spectrum in terms of both geography and level of liability protection.

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Executive summary

Internet intermediaries facilitate the free flow of information online by assisting users to find, share and access content and by providing spaces in which they can interact. Intermediaries can be defined as businesses or platforms that facilitate the consumption, use and dissemination of content, and (social or business) interactions between Internet users. Well-known examples include broadband and telecommunications companies, such as Verizon and Orange; Internet companies providing multiple services, such as Yahoo! and Google; social platforms, such as Facebook and WeChat; ecommerce platforms, such as eBay and Alibaba; and other platforms based on user-generated content, such as Wikipedia, SoundCloud and TripAdvisor.

Intermediaries rely on content provided by their users and the wider Internet (such as videos, photos, music and comments). Users sometimes also share copyright-protected content or content that is illegal (e.g. defamatory). Many countries have laws setting out the conditions under which intermediaries can be made exempt from liability for user content. These laws are referred to as 'safe harbours' and form part of the wider Internet intermediary liability (IIL) regime. The conditions for an Internet intermediary to be protected by safe harbours vary by country, and some countries do not have any explicit safe harbours.

This Oxera study examines what happens to Internet intermediary start-ups if the IIL regime changes. Such changes are likely to have implications for the wider start-up community and Internet economy; however, these are beyond the scope of this study. Earlier research has examined this effect and estimates the GDP contribution of intermediaries to be around 1.3–1.5% across different regions.¹ The study has produced both qualitative insights and quantitative results. In addition to reviewing existing literature and data, we have conducted interviews with experts on start-ups and IIL regimes. We have condensed the information into a micro-simulation model to obtain estimates of the impact of different IIL regimes on intermediary start-ups. The model has been applied to four countries (Chile, Germany, India and Thailand) as examples to determine the varied effects and costs of safe harbours in different IIL regimes and in different start-up ecosystems.

The role of intermediary liability

A socially efficient IIL regime should balance, on the one hand, the benefits of effective enforcement of the laws that protect the interests of rights holders and other affected parties, and, on the other, the benefits of intermediaries that contribute to a free and innovative Internet. Well-balanced IIL laws can help to ensure the effective removal of illegal content without constraining the free flow of information. However, an excessive level of liability is likely to considerably limit the legitimate use of intermediaries.

To guarantee socially efficient enforcement of copyright, defamation and other relevant legislation, legal certainty and costs of compliance matter, according to our analysis. An IIL regime that defines clear and cost-efficient requirements for intermediaries to comply with the legislation is likely to produce the best results for society.

¹ Including in the USA, the EU and India. See, respectively, OECD (2011), 'The Role of Internet Intermediaries in Advancing Public Policy Objectives', p. 40; Copenhagen Economics (2013), 'The impact of online intermediaries on the EU economy'; and Copenhagen Economics (2014), 'Closing the Gap: Indian Online Intermediaries and a Liability System Not Yet Fit for Purpose'.

The impact on intermediary start-ups

Our research shows that the nature of safe harbours and the wider IIL regime affect intermediaries in several ways:

- by determining the risk that intermediaries face legal action for facilitating access to illegal content;
- by prescribing how much effort, in terms of compliance, intermediaries need to make to be considered exempt from liability (for example, ensuring takedown within a certain period following notification);
- as a result, they can influence the size and vibrancy of the Internet start-up community if the legal risk or the compliance efforts become excessive for certain types of activity.

Although all intermediaries face risks and costs in relation to IIL legislation, our research suggests that start-ups are especially vulnerable. For example, new business models may be particularly exposed to legal uncertainty. Start-ups are also likely to focus on making their main business activity successful and are therefore less able to specialise in IIL issues. As a consequence, they may find it harder to deal with potential complaints or lawsuits in the most efficient way.

The impact in the focus countries

We have analysed the country-specific impacts on intermediary start-ups in Chile, Germany, India and Thailand. These focus countries were chosen to reflect a spectrum in terms of both geography and IIL regimes. As the IIL regime varies substantially by country, we have separately estimated the effect of increasing liability protection for each country.

We have measured the magnitude of the impact of changing the IIL regime on two variables that indicate start-up success: the rate of successful start-ups and their net present value (NPV). Given that the simulation approach relies on assumptions about parameters which are drawn from a variety of sources, the results should be interpreted as order of magnitude effects rather than precise point estimates.

We have found that the biggest gains from implementing a clear and costefficient IIL regime can be made in countries where start-ups face larger legal risks and compliance costs. However, even when the risks are low, reducing such costs can have an impact on start-up success rates.

For each of the focus countries we have estimated the effect of implementing a regime with clearly defined requirements for compliance and with low associated compliance costs (see figures below).

Our analysis suggests that a regime with clearly defined requirements for compliance and low associated compliance costs could increase start-up success rates for intermediaries in our focus countries by between 4% (Chile) and 24% (Thailand). Implementing such a regime would also increase the expected profit for successful start-up intermediaries by between 1% (Chile) and 5% (India).

Estimated impact on start-up success rates (%)



Source: Oxera analysis.

Estimated impact on the expected profits of successful start-ups (%)



Source: Oxera analysis.

While the IIL regime is not the only lever available to policymakers wishing to encourage more start-up activity, it may be one of the easiest to pull. Intermediary start-ups are likely to be held back if the IIL regime is not clear or entails complex compliance requirements. The potential gains are larger in countries where the obstacles are felt more strongly, such as India and Thailand. Improving the legal environment for intermediary start-ups can be expected to stimulate positive further implications for the start-up community and the wider Internet economy.

Introduction

1.1 Scope

This Oxera study examines how safe harbours and the wider Internet intermediary liability (IIL) regime affect start-ups. The study consists of two main parts:

- a general exploration of the effects of IIL;
- an application of insights from this exploration to four focus countries: Chile, Germany, India, and Thailand.

As indicated in Figure 1.1, changes in the success of Internet intermediary startups are likely to have implications for the wider start-up and Internet community, which are dealt with in other studies (cited in section 2.1). This study focuses on the direct link between the IIL regime and the success of intermediary start-ups.



Figure 1.1 Scope of the study

Source: Oxera.

1.2 Approach

The study condenses insights gained from several sources into a model to obtain order of magnitude estimates of the impact of different IIL regimes on intermediary start-ups. The sources can be divided into three groups:

- qualitative sources: these include reviews of academic literature and research undertaken by other organisations on the areas of IIL and start-up success. In addition, we have reviewed specialist blogs, newspaper articles and other sources in particular to gain insights into the country-specific aspects of two areas of interest;
- quantitative sources: these also include reviews of academic literature and research undertaken by other organisations on the areas of IIL and start-up success. We have also drawn on official sources, where possible, to obtain verified data on the environments for Internet start-ups in the focus countries;
- interviews with experts: we have gathered the views of 20 stakeholders with extensive knowledge of the areas of interest, including entrepreneurs, investors, lawyers and other individuals who work with start-ups and within the IIL regime. The stakeholders were asked to provide their views on their respective areas of expertise, in the form of qualitative comments and estimates.

Based on these inputs, we have built a model that simulates the development of start-ups and allows us to estimate the size of the effect of increased liability protection at the level of the individual start-up and at the aggregate level. Given that the simulation approach relies on assumptions about parameters drawn from a variety of sources, the results should be interpreted as order of magnitude effects rather than precise point estimates.

1.3 Structure

This report is structured as follows:

- section 2 introduces IIL from various angles. It begins with a description of Internet intermediaries (section 2.1), before explaining the general characteristics of IIL regimes (section 2.2), followed by an approach to establish the efficient level of IIL (section 2.3);
- section 3 sheds light on Internet start-ups in general and intermediary startups in particular. It considers the crucial role of start-ups for the Internet economy (section 3.1) and examines the effects that IIL regimes can have on Internet intermediaries (section 3.2). Finally, it explains why liability may have particularly harmful implications for intermediary start-ups (section 3.3);
- section 4 presents the model that we use to assess the impact of intermediary liability on start-ups. It sets out the approach (section 4.1), the measurement of the impact (section 4.2), the common patterns in start-up ecosystems across countries that were incorporated into the model (section 4.3) and the overall results (section 4.4);
- sections 5 to 8 present the four country studies. For each country, an
 overview is given of the IIL regime and the start-up scene, alongside the more
 detailed country-level modelling results;
- section 9 concludes by considering the implications of the results for the design of an IIL regime that is favourable to intermediary start-ups without neglecting the interests of rights holders.

The appendices contain more detailed descriptions of the methodology (Appendix A1) and of the model specification for the focus countries (Appendix A2). We also present the results of varying some assumptions (Appendix A3) and of a theoretical model that estimates the magnitude of the full effect (Appendix A4).

The assessment of the legal regimes focuses on their economic impact and does not constitute legal analysis. It does not represent Google's view, but is the result of Oxera's literature review and discussions with legal experts.

2 Internet intermediary liability

2.1 Internet intermediaries

While several categorisations of intermediaries exist, Internet intermediaries can be defined as any Internet business or platform that facilitates the consumption, use and dissemination of content, and (social or business) interactions between Internet users. Many Internet businesses or platforms may not be primarily intermediaries, but fulfil some intermediary functions-for example, by giving customers the option to comment on content produced by the business. Figure 2.1 shows how intermediaries contribute to delivering content to users; this includes content provided by the users themselves.² Well-known examples include broadband and telecommunications companies such as Verizon and Orange: Internet companies providing multiple services such as Yahoo! and Google; social platforms such as Facebook and WeChat; ecommerce platforms such as eBay and Alibaba; and other platforms based on user-generated content such as Wikipedia, SoundCloud and TripAdvisor. Other less international intermediaries include the Chilean telecommunications company Entel, the German career platform Xing, the Indian online marketplace Snapdeal, and the Thai portal website MThai.





Note: Payment platforms can also be considered intermediaries, but owing to their limited relation to content are outside the scope of this report. Source: Oxera analysis.

Internet intermediaries contribute to growth and innovation on the Internet and in the economy as a whole. While this effect is beyond the scope of this study, several other studies have sought to pin down the value of Internet intermediaries and their impact on the wider economy. For example, the US Census Bureau found that, in 2008, intermediaries represented around 1.4% of gross domestic product (GDP) value-added, with growth rates significantly above those of other industries.³ For India, the potential GDP contribution is estimated at 1.3% in 2015.⁴ Copenhagen Economics estimated that, for Europe in 2012, intermediaries accounted for 1.4% of GDP,⁵ which translates into a €220bn contribution to the GDP of the 27 EU countries and is following a

² Some categorisations of intermediaries include payment systems or peer-to-peer (P2P) networks as separate categories.

³ OECD (2011), 'The Role of Internet Intermediaries in Advancing Public Policy Objectives', p. 40.

⁴ Copenhagen Economics (2014), op. cit.

⁵ Copenhagen Economics (2012), 'Online Intermediaries: Assessing the economic impact of the EU's online liability regime'.

growing trend.⁶ A large proportion of the €100bn consumer surplus estimated by McKinsey in 2011 was generated by intermediaries.⁷ While the exact value of intermediaries is difficult to determine, the existing estimates indicate that it is both large and growing.

Intermediaries may also gain importance within the Internet: business academics and entrepreneurs are becoming increasingly interested in platform business models. The distinct feature of these models is that they provide space for others (users or other firms) to 'co-create' value.⁸ Some commentators predict that platform models will grow and change the way the Internet economy works.⁹ As many intermediaries are platform models, this could lead to a larger presence of intermediaries on the Internet.

2.2 Liability of Internet intermediaries

While Internet intermediaries make the Internet more accessible and participative, people may also sometimes infringe copyright, libel and related laws through their use of intermediaries. For example, material protected by copyright or hate speech can be uploaded and found through platforms such as social networks, auction sites and search engines, and users can be defamed by other users in reviews or forums. This has led to various IIL regimes across the world stipulating the acts for which intermediaries can be held liable.

2.2.1 Characteristics of IIL regimes

The IIL regimes across the world vary in a number of ways. While it is difficult to capture all specific characteristics, key distinguishing features can be identified that set different regimes apart. In many parts of the world, courts have applied existing or newly created laws to govern the liability of intermediaries for other parties' content.

Existence and strength of safe harbours: many jurisdictions have laws setting out the conditions under which intermediaries can be made exempt from liability. These laws are referred to as 'safe harbours'. However, the conditions vary considerably across countries: in some jurisdictions, intermediaries need to comply with certain filtering requirements to be made exempt from liability; in others, they need to take down content once they have received a complaint (referred to as 'notice-and-takedown'); and in others, they need to take action only once a court has confirmed the validity of a claim.

Deterrence mechanism: the punishment for infringement can take on different forms. In some countries (e.g. the USA), damages are a major threat for intermediaries; in others (e.g. Germany), the shutdown of a service is a bigger concern. Some countries, such as Thailand, stipulate fines or even prison sentences for individuals who fail to comply with the IIL regime.

Coverage of types of intermediary: some countries stipulate different requirements for different types of intermediary (e.g. demanding a more direct response from intermediaries that have more control over content). Others may not include certain types of intermediary in their safe harbour provisions

⁶ Copenhagen Economics (2013), op. cit.

 ⁷ 'The Web's €100 billion surplus', *McKinsey Quarterly*, January 2011.
 ⁸ Bonchek, M. and Choudary, S. P. (2013), 'Three Elements of a Successful Platform Strategy', *Harvard* Business Review, 31 January, http://blogs.hbr.org/2013/01/three-elements-of-a-successful-platform, accessed 5 February 2015.

⁹ Choudary, S.P. (2013), 'Why Business Models Fail: Pipes vs. Platforms', Wired, 21 October, http://www.wired.com/2013/10/why-business-models-fail-pipes-vs-platforms, accessed 5 February 2015.

(e.g. search engines in Germany are not explicitly covered by the safe harbours).

Coverage of types of infringement: some countries have separate laws for different types of infringement—referred to as 'vertical' regimes. For example, in the USA, Section 512 of the Digital Millennium Copyright Act (DMCA) sets out the IIL with respect to copyright, while Section 230 of the Communications Decency Act (CDA) governs IIL in the case of libel, defamation and other infringements. Other jurisdictions have 'horizontal' regimes and apply the same laws to all infringements; one example is the European E-Commerce Directive.

The specific IIL regimes in the four focus countries are described in sections 5.1 (Chile), 6.1 (Germany), 7.1 (India) and 8.1 (Thailand).

2.2.2 Types of IIL regimes

As IIL has evolved over the past few decades, intermediaries in many countries have benefited in general from a decreasing risk of legal action arising from other parties' content. This tends to favour the development of new business models and products that might otherwise have been illegal or not commercially viable due to the extensive monitoring requirements. However, in many cases, intermediaries also incur significant compliance costs to benefit from liability exemption—e.g. to respond to claims within a set timeframe. In IIL regimes with increased liability protection, these costs are reduced, which makes intermediary business models more attractive.

Many different types of IIL regimes exist. From a high-level perspective, they differ mainly in their degree of liability protection and compliance costs. Figure 2.2 presents a stylised representation of the typical interaction between liability protection and compliance costs.

While intermediaries operating on the upward-sloping part of the line are exposed to considerable legal risk, they may also need to make considerable efforts to qualify for limited protection from liability. Only on the lower-right part of the line do intermediaries get more extensive liability protection in exchange for a relatively low cost of compliance.

Figure 2.2 Types of IIL regimes



Source: Oxera analysis.

The more liability is limited, the more feasible intermediary business models become. However, we find that the burden of compliance can counteract these benefits to some extent, and may hold back the development of intermediaries if compliance is more difficult than desirable from the point of view of the wider society.

2.3 A socially efficient level of IIL

To ensure the socially efficient removal of illegal content, intermediaries are unlikely ever to find themselves in an environment without costs and risks. Balancing the costs and benefits of intermediary liability and providing legal certainty encourages intermediaries to deliver the largest net gain to the Internet economy.

2.3.1 Striking the balance

Copyright, libel and related laws have been put in place to deliver a certain value to society. Copyright law is intended to ensure that musicians, authors, actors and other creative agents receive an incentive to produce more creative content to be distributed. Libel law seeks to prevent defamation, hate speech, etc., respecting the right of individuals to live free from threats and to protect their reputation.

Rights holders and other affected parties often prefer to hold intermediaries liable, rather than the primary infringers.¹⁰ By addressing intermediaries, the enforcement of these rights becomes easier and is more likely to be feasible and/or commercially viable. This is because intermediaries tend to be easier to identify than individual infringing parties; and there will often be many more primary infringers breaching these laws than there are intermediaries distributing the infringing materials.

However, if intermediaries are held unconditionally liable for all infringements by their users, a significant cost would be imposed on those firms. Such a cost would be likely to create significant distortions in the legitimate use of intermediary services and the wider Internet.¹¹ If the legitimate use of intermediaries is constrained, users that could benefit from their services—including businesses and individuals—would be deprived of some of the possible benefits.

A socially efficient IIL regime should therefore balance these two contrasting benefits to society: on the one hand, it needs to consider the importance of effectively enforcing copyright, defamation and related laws; on the other hand, it should take account of the benefits provided by intermediaries in the form of increased access and volume of legitimate content on the Internet as well as increased incentives to build innovative new intermediary business models.

In economics terms, the optimal level of liability is where the marginal benefit of holding intermediaries liable (through more effective enforcement) is equal to the marginal cost of doing so (by imposing costs on intermediaries, thereby reducing legitimate usage and benefits created to Internet users). Figure 2.3 shows a stylised representation of this intersection: as the marginal cost of limiting legitimate use falls, the marginal cost of illegitimate use increases.

¹⁰ Lichtman, D. and Landes, W. (2003), 'Indirect Liability for Copyright Infringement: An Economic Perspective', *Harvard Journal of Law & Technology*, **16**:2.

¹¹ See ibid. and Kaminski, M. (2012), ^{*}Positive Proposals for Treatment of Online Intermediaries', *American University International Law Review*, **28**:1, pp. 203–22.

Figure 2.3 The optimal level of liability protection



Source: Oxera analysis.

The exact specification of liability protection on the horizontal axis may involve different aspects: a certain level of protection may mean that certain requirements are imposed on all intermediaries (e.g. notice-and-takedown); it can also mean that, for some types of intermediary, the marginal cost of the illegitimate use is higher than the marginal cost of limiting legitimate use.¹²

2.3.2 Creating legal certainty

While the costs and benefits of holding specific intermediaries liable may vary, clear rules setting out the responsibilities of intermediaries provide clarity to intermediaries and rights holders alike. This clarity is likely to reduce the costs incurred as a result of both over-compliance and 'missed' compliance, as well as the need to go to court to establish (the presence or absence of) liability.

In particular, the costs of over-compliance are likely to be considerable. Studies from various jurisdictions¹³ and the industry experts we spoke to emphasised that, where a complaint is ambiguous, intermediaries often prefer to remove content to avoid any potential liability. Such ambiguity is likely to create additional costs¹⁴—e.g. in the situation where a liability regime is intended to be at a different point than it is perceived to be at, as shown in Figure 2.4. As intermediaries are not certain how much liability they actually have, they are likely to incur additional costs to be sure to comply, as non-compliance may be very costly.

¹² This argument has been raised in the debate on some P2P networks. See Edwards, L. (2011), 'Role and responsibility of the Internet intermediaries in the field of copyright and related rights', prepared for the World Intellectual Property Organization. However, this study does not seek to establish the optimal level of liability for different types of intermediary or in general, and hence does not consider the issue of P2P in detail.

¹³ See, in particular, India and Thailand in the country studies below. The over-use of take-down notices was also found in the case of the USA. See, for example, Urban, J.M. and Quilter, L. (2005), 'Efficient Process or Chilling Effects—Takedown Notices under Section 512 of the Digital Millennium Copyright Act', Santa Clara Computer & High Tech Law Journal, 22, pp. 621–93.

¹⁴ Angelopoulos, C. (2013), 'Beyond the Safe Harbours: Harmonising Substantive Intermediary Liability for Copyright Infringement in Europe', *Intellectual Property Quarterly*, 2013:3, pp. 253–74.

Figure 2.4 The cost of legal uncertainty



Source: Oxera analysis.

If legal uncertainty is very high (e.g. if no specific IIL legislation exists), it may become very difficult to determine the intended or perceived level of IIL because the legal experts, managers, developers and others may disagree. In such cases, intermediaries may even develop products and services that turn out not to be viable only after going through legal proceedings.

The cost of uncertainty can be avoided by providing intermediaries with clear instructions about what content they need to address through which processes, irrespective of the level of liability protection. Any uncertainty is likely to raise costs above the necessary level, creating a loss to intermediaries, users and the wider Internet economy.

Legal clarity would be beneficial not only within, but also across, countries. Currently, intermediaries need to ensure compliance at the national level, and hence require legal expertise and compliance processes for each country. A more uniform approach across regions would allow companies to follow a clear legal framework,¹⁵ thereby lowering transaction costs and facilitating the expansion of intermediaries across jurisdictions.¹⁶ This is likely to benefit users by increasing choice and promoting competition between intermediaries.

¹⁵ Angelopoulos (2013), op. cit.

¹⁶ Kaminski (2012), op. cit.

3 Internet start-ups

3.1 Key characteristics of Internet start-ups

Internet start-ups are a key driver of innovation in the rapidly expanding Internet economy. The impact of new business models such as platforms has been disruptive, offering new types of service to consumers and opening up opportunities to businesses. While not all start-ups reach a mature stage, over the past few years many have been acquired by large Internet firms and in particular intermediaries. Examples include the \$1.1bn acquisition of Tumblr by Yahoo! in 2013, the \$19bn takeover of WhatsApp by Facebook in 2014, and numerous other acquisitions such as that of Locationary by Apple.¹⁷

Internet intermediaries—in particular, platform models—gain importance in the online world as the Internet becomes more participative.¹⁸ Intermediary start-ups are likely to have a positive impact on the wider Internet start-up community as they help to connect and integrate content from content producers, such as online sellers, bloggers and news sites.

3.2 The impact of IIL on firms

The IIL regime affects both small and large intermediaries directly as well as indirectly. The direct effects include the costs of compliance with safe harbour conditions, the costs of monitoring or filtering, and the costs of responding to legal action. Indirectly, the IIL regime may affect investment and, through its implications for legitimate uses, the freedom of speech, the creation of content and the wider Internet economy.

3.2.1 Direct effects

Costs of compliance: intermediaries need to take steps to ensure they meet the requirements set out in safe harbour legislation to be protected from liability. The costs vary by IIL regime and include the cost of employees who deal with complaints/take-down requests, professional legal advice, and the development of technology to meet filtering requirements.

Costs of monitoring: if no safe harbours are available, intermediaries may choose to monitor content to detect the publication of infringing content and act to remove it, or prevent it. This may generate different types of cost, including the cost of employees and filtering technology.

Costs of legal proceedings: if intermediaries are potentially liable for infringing content, they may face legal action to determine liability and any fines or damages. In such cases, they are likely to incur legal costs for advice, representation, court proceedings, and fines or damages. Legal action may also have implications for a company's reputation, among both its users and potential investors. In extreme cases, the intermediary's service can be banned in its entirety.¹⁹

3.2.2 Indirect effects

On investment: an IIL regime that investors perceive to protect intermediaries from indirect liability is likely to attract more investment into intermediaries and

 ¹⁷ Constine, J. (2014), 'Visualizing 15 Years of Acquisitions by Apple, Google, Yahoo, Amazon and Facebook', 25 February, <u>http://techcrunch.com/2014/02/25/the-age-of-acquisitions</u>, accessed 5 February 2015.
 ¹⁸ Choudary (2013), op. cit.

¹⁹ Examples of banned intermediaries can be found in the country studies.

related firms than one with a high degree of legal uncertainty and risks. Booz & Company, a management consultancy, found that the pool of interested investors in Europe would increase by 19% if copyright regulations were clearer, whereas it would drop by 68% if websites were held liable for content uploaded by users.²⁰ In this case, investors would require an additional expected return of 8x to offset the increased risk. Higher investment would directly increase the availability of funding to start-ups, potentially translating into better start-up prospects and a more vibrant start-up ecosystem.

On legitimate uses: compliance and monitoring are also likely to affect content that is not an infringement if intermediaries take down more content than they need to and if targeted blocking is technically more demanding. For example, the choice of blocking techniques for Internet service providers (ISPs) involves a trade-off between low costs and low impact on legitimate services. ²¹ The removal of legitimate content is likely to reduce the benefits that intermediaries create to Internet users and to have an impact on free speech, which in turn may even affect the creation of content for the Internet.

3.3 The impact of IIL on start-ups

All intermediaries are likely to be affected by IIL legislation, but start-ups in particular. This could in turn affect the level of innovation in the online economy. Start-ups often introduce new business models that can lead to disruptive change and they may be particularly exposed to legal uncertainty. Our qualitative research has identified some common patterns of the effects of IIL on start-ups.

Low awareness: entrepreneurs often do not think about IIL explicitly and, where they do, they tend to find it difficult to assess the level of risk. If the risk is evident, they may prefer to exclude certain product features instead of trying to reduce the risk through other measures. Investors are also unlikely to explicitly consider IIL in a risk assessment. Other risk factors are considered much more uncertain and relevant to the success of the start-up, such as potential user growth and monetisation.

Low specialisation: when IIL becomes relevant for intermediary start-ups, they tend to have limited resources and expertise to deal with any complaints. Entrepreneurs tend to focus on strategic issues that are perceived to be more fundamental to the success of their start-up. To assess the validity of claims, they generally require professional legal advice. Take-down procedures or any filtering or monitoring requirements also require additional expertise and potentially external resources. Hence, the lack of specialised internal resources is likely to lead to a stronger impact of IIL on start-ups relative to other intermediaries.

Likely failure impact: if a start-up is sued because of failure to comply with the IIL regime, the legal proceedings are likely to absorb the start-up's resources to such an extent that it becomes difficult or impossible to continue business. Legal proceedings per se incur legal expenses and require executive time, often over a considerable period of time. A finding of infringement by authorities would also involve a fine or damages payout. Overall, this could exceed the resources available to most start-ups.

²⁰ Booz & Company (2011), 'The Impact of EU Internet Copyright Regulations on Early-Stage Investment: A Quantitative Study'. Booz & Company merged with PwC in 2014 to form Strategy&.

²¹ Ofcom (2010), 'Site Blocking to reduce online copyright infringement. A review of section 17 and 19 of the Digital Economy Act', 27 May.

Risk aversion: given the high risk implied by failure to comply, intermediary start-ups are likely to comply with any complaints put forward to them. The attempt to assess the validity of claims would increase costs further, often without any obvious benefits to the individual start-up. As a consequence, start-ups may, even more than established intermediaries, have an incentive to take down content whenever they receive complaints. In settings where no safe harbour is available, start-ups are also likely to be risk-averse, leading to potential monitoring and removal of any content that may pose the risk of infringement.

4 Modelling and results

4.1 Modelling approach

The modelling approach aims to estimate the impact of a change in the IIL regime on the success of Internet intermediary start-ups. To condense the perspectives of different stakeholders and combine them with data, we have built a micro-simulation model that simulates the development of a large number of start-ups. It allows us to show the effect of the IIL regime at the level of the individual start-up and at the aggregate level. This is useful for capturing the perspectives of entrepreneurs, investors, incubators and legal experts, some of whom focus on the impact on individual start-ups, while others observe the effects on the start-up ecosystem at the aggregate level.

4.1.1 Micro-simulation modelling

Micro-simulations are a suitable tool for capturing the environment in which entrepreneurs operate, which is characterised by high uncertainty of the parameters that determine a start-up's success. Instead of prescribing a deterministic path for each start-up, we use information on the distribution of parameters determining the start-up development. For example, instead of using the average growth rate of a user base, we apply a distribution that captures the range of likely growth rates and then assign different probabilities to them based on data from actual Internet start-ups. Where start-ups are exposed to liability risks, the model simulates a certain number of start-ups facing the costs of legal action, instead of applying the average cost of legal action to all start-ups.

The model simulates the quarterly cash flow of intermediary start-ups over the first five years. Costs and revenues diminish and increase the available cash; if the start-up runs out of cash, it is considered to have failed and ceases to exist.²² The key drivers of start-up success can be categorised into four main groups, each of which comprises a number of input variables, listed in Table 4.1.

User base	Revenues and funding	Operational costs	Liability costs
Initial user base	Initial private funds	Start-up cost	Compliance cost per user
Growth rate	Initial external funding	Staff cost	Probability of legal action
	Revenue per user	Marketing cost	Basic cost of legal action
	Funding per new user	Technology cost	Fine if legal action lost

Table 4.1Main variables

Note: Variables in italics are drawn from a distribution for each simulation (in modelling terms, this is referred to as 'stochastic'). Source: Oxera.

The results are produced by running the model 100,000 times, with each run representing an entrepreneur who tries to get their start-up off the ground. More detail on the micro-simulation modelling can be found in Appendix A1. The model has been populated with data for each focus country.

4.1.2 Data and sources

We have calibrated the model to reflect the start-up ecosystem of each country. The sources used include official databases, research by start-up associations, specialist blogs and other reports. We have combined these sources with the

²² When a start-up is on a success path and needs only a small amount of additional funding to become profitable, we allow for the possibility that it continues to run for a short time (maximum 6 months) without cash reserves. This reflects that an entrepreneur in such a situation would be likely to raise external funding.

inputs from interviews with a wide variety of industry experts to obtain a coherent picture both within and across countries. Given that the simulation approach relies on assumptions about parameters that are drawn from a variety of sources, the results should be interpreted as order of magnitude effects rather than precise point estimates.

The data availability varied by country and by area. Where possible, countryspecific information from official sources has been used; however, little data on start-ups and legal costs is collected by official sources. For parameters with limited publicly available information, we have combined information and views from several sources, including insights from the interviewees. In some cases, no specific information was available for some of the countries—e.g. on revenues and compliance cost per user. In these cases, we have inferred the parameters based on the data available for other countries and qualitative information provided by our sources. To ensure the robustness and plausibility of the assumptions, we have cross-checked the results of the model with the outcomes achieved in the actual start-up ecosystems. More detail on the model and sources can be found in Appendix A2.

4.2 Identifying the effect

We determine the effect that an IIL regime without legal risk and with lessdemanding safe harbour conditions would have on start-ups. For each focus country, this implies a comparison between two scenarios: the current state of the world, as defined by the existing IIL regime and start-up ecosystem; and the 'counterfactual' scenario with the modified IIL regime. Such comparison allows us to isolate the effect of the changing variable: the IIL regime.

The **current** state of the world is different in each focus country. The focus countries cover a broad range of IIL regimes: Thailand holds intermediaries liable to the largest extent within our group of focus countries; intermediaries often undertake a certain amount of monitoring, but are unsure about the conditions under which they can be exempted from liability. India, in turn, makes attempts to define these conditions more clearly, but intermediaries perceive the conditions to be subject to interpretation and find compliance to be relatively costly. In Germany, intermediaries can be exempted from liability relatively clearly in many cases, but when cases are less clear, the potential repercussions for intermediaries liable (in relation to copyright) only if they fail to comply with court orders. This results in a relatively low level of liability for intermediaries and low compliance costs.

More detailed descriptions of the current states of the world can be found in the respective country studies (sections 5 to 8).

The **counterfactual** scenario is similar for all countries: the compliance requirements are fully spelled out, hence removing legal uncertainty, which implies changing the variables in the 'Liability costs' column in Table 4.1. By complying with the safe harbour requirements, in effect the intermediaries can eliminate entirely the legal risk to which they are exposed. The compliance requirements still create a certain cost, the level of which we have estimated according to discussions with experts and a review of relevant literature. The minimum level of compliance costs varies because illegal content is defined differently across countries. The minimum compliance costs are higher in Thailand and India as the definition of illegal content is considered to be relatively broader than in Germany and Chile. More detail can be found in Appendix A2.5.

4.2.1 Start-up outcomes

We measure the effect of the IIL regime on two key variables:

- **the start-up success rate**: as intermediary start-ups are covered by more extensive liability protection, the start-up success rate increases. This increase represents a number of start-ups that would be able to survive in an IIL regime with more protection;
- the net present value (NPV) of surviving start-ups: as start-ups face lower risk and compliance cost, their overall costs are reduced. This translates into a higher profitability of the start-ups that survive, captured by the increase in the NPV of surviving start-ups.

These two variables do not capture the full effects of increased liability protection. Several indirect effects are likely to follow from the two primary effects:

- attractiveness for entrepreneurs: as the chance of success increases, more entrepreneurs are likely to be attracted to intermediary business models. This is likely to increase the overall number of intermediary entrepreneurs. As it is not possible to say anything about the quality of the additional start-ups, it is even possible for the success rate in the highprotection IIL regime to fall to the level of the lower-protection regime; however, the number of succeeding start-ups would remain higher since the overall number of start-ups increases;
- attractiveness for investors: higher success chances and profitability are also likely to attract more investment from outside investors (see section 3.2.2). This, in turn, may have positive knock-on effects on the feasibility of external funding for intermediary start-ups;
- wider start-up community: as intermediaries help to connect and integrate other business models, an increase in the number of intermediaries may have a positive impact on other Internet start-ups. This could have a positive feedback effect on the use of intermediaries in general and intermediary start-ups in particular.

We model only the first-order effect of a change in the IIL regime on the start-up success rate and the NPV of surviving start-ups. It is possible, for example, that a higher degree of attractiveness for investors has ramifications on the success of start-ups, but these effects are beyond the scope of this study.

4.3 Common patterns across countries

Based on our qualitative research, we have identified a number of common patterns and factors across countries. We have found that factors other than the IIL regime also influence the success and profitability of start-up ecosystems and have reflected them in the model. These factors are assumed to be constant to allow for the isolation of the impact of the IIL regime. The identified patterns include the following:

• **the potential target market**: the potential number of users for an intermediary start-up depends on a variety of factors, among which we find the total population of the home market (as start-ups tend to target their home country first), the Internet coverage, and the share of the market that a certain intermediary business model seeks to capture. Put differently, start-ups tend to be more successful if they can address a large and growing market with

untapped demand for intermediary services. For example, start-ups in Chile seem to be limited in their growth by a relatively small market in comparison to Indian start-ups;

- **the wider business environment**: the wider level of start-up activity depends on numerous other factors, including the cultural attitude towards entrepreneurship and risk, education, and tax treatments. In Germany, for example, a negative attitude towards failure is perceived as an impediment to a more active start-up ecosystem, while skilled labour is widely available; the opposite applies in India;
- the feasibility of intermediary business models: intermediaries rely on particular features of the local Internet economy: they often do not sell products for a fixed one-off price, but rely on different types of revenue, such as subscriptions or advertising. They also rely on content being made available by 'traditional' content producers or users to make their business model attractive. Both aspects can create challenges for start-ups and are likely to reduce entrepreneurial activity—in Thailand, for example, advertising-based business model are often considered commercially unviable, while, in Chile, start-ups perceive the amount of local content as a constraint;
- the availability of funding: while the IIL regime and investments are likely to interact (see section 3.2.2), the level of investment available in a country is also driven by other factors. Our research has identified that wider growth expectations, political stability, and tax treatment have an impact on the level of funding available to start-ups. For example, in India, a tax on 'angel' investments²³ is likely to deter more investment at the early stage, while growth expectations and political stability are perceived as counteracting factors in Thailand.

Hence, the IIL regime is not the only lever available to policymakers wishing to encourage more start-up activity. However, it may be one of the easiest to pull, with large potential gains, in particular for countries in which intermediaries face considerable legal uncertainty and compliance costs.

4.4 Modelling results

While we have combined several sources to obtain estimates that are as precise as possible, our results should be understood as indicating the order of magnitude of the effect. The results of varying some of the assumptions are presented in Appendix A3.

The focus countries

The impact of implementing an IIL regime without legal risk and low compliance costs varies across countries and tends to be smaller when current liability protection is higher. Figure 4.1 and Figure 4.2 present the change in relative terms. For start-up success rates, we find a potential increase of 4% in Chile and of around 24% in Thailand. In terms of NPV, India leads, with a potential increase of 5%, while start-ups in Chile, Germany and Thailand could be between 1% and 3% more profitable.

²³ Early investments generally made by single individuals.

Figure 4.1 Estimated impact on start-up success rates (%)



Source: Oxera analysis.





Source: Oxera analysis.

The impact of implementing a higher-protection IIL regime varies with the level of liability currently implemented—the lower the current level, the greater the potential boost for the start-up ecosystem from the implementation of a regime without risk and with limited and clearly defined costs of compliance. We find that a large part of the effect is driven by the costs of compliance: for Chile, Germany and India, the probability of legal action seems very low as start-ups typically prefer to take down content, even when this leads to over-compliance. In Thailand, over-compliance due to uncertainty also contributes to higher costs; however, intermediaries also face a residual risk of legal action, as compliance requirements are sometimes too uncertain or too high for intermediaries.

However, other limiting factors also play a role: the considerable difference in the potential NPV increase between Thailand and India is driven by constraints of the target market and revenue models. More detailed country-level results can be found in sections 5 to 8.

5 Country study: Chile

5.1 The effect of the IIL regime on start-ups

Risk of legal action

Based on our interviews and review of literature and cases, we have found the risk of legal action for copyright infringements to be very low. Intermediary startups are likely to become involved in legal action only if they fail to comply with a court-approved take-down order. Similarly, the risk to start-ups from defamation and other offences also seems negligible in practice.

Compliance costs

The compliance cost in Chile is the lowest of the four focus countries, and has only a negligible effect on start-up activity. Cost is driven mainly by the selfregulation mechanism and, to a lesser extent, by the absence of an explicit safe harbour for non-copyright infringements. When intermediary start-ups attract the attention of copyright associations, they need to establish procedures in line with the self-regulation mechanism. This is likely to require time and technical expertise to determine the identity of the primary infringer to whom the complaint needs to be forwarded.

Impact on start-ups

The Chile start-up ecosystem could benefit moderately from an IIL regime with lower cost, as shown in Figure 5.1. Our model indicates that the start-up success rate could increase by 0.4 percentage points, representing a 4% increase in the rate. The rise in profitability of successful firms is driven by the ongoing lower cost of compliance, translating into an NPV increase of around 1%.



Figure 5.1 Estimated impact of the IIL regime on start-ups in Chile

Source: Oxera analysis.

5.2 The IIL regime in Chile

Among our four focus countries, Chile has implemented the most protective liability regime for copyright infringements, requiring judicial review to enforce a take-down notice. This is defined by provisions in Article 85 of the Copyright Act, passed in May 2010.²⁴ However, no case has been brought under the current legislation—i.e. no take-down notice has been judicially approved. Consequently, intermediaries have not defended any cases in court of alleged instances of non-compliance with take-down notices.

Two factors contribute to the absence of court-reviewed take-down notices: a self-regulation mechanism ensures compliance with copyright through agreements between rights holders and intermediaries; and a large proportion of Chilean Internet traffic is on international websites (in particular, US sites), which means that they fall under other jurisdictions.

The explicit safe harbours relate to copyright only. Defamation and other infringements are not governed by explicit safe harbours. The decisions made in different cases suggest that intermediaries have not been fined in relation to intermediary liability so far, but have been encouraged to take measures of care when they obtain knowledge of infringements.²⁵ This creates uncertainty with regard to intermediary liability. However, this is not considered a major issue by legal practitioners.²⁶

The self-regulation mechanism

Under Chilean law, rights holders can choose to send intermediaries private notices. These require the intermediaries to forward the notice to the user that provided the allegedly infringing content.²⁷ Intermediaries and rights holder associations, such as the International Federation of the Phonographic Industry (IFPI), have established agreements that allow rights holders to make a specific number of notices within a certain period. According to those interviewed for this study, both sides consider this a cheaper form of enforcement than court orders.

Previous regime

The Free Trade Agreement signed by the USA and Chile in 2003 stipulated that Chile had to ensure that the liability of intermediaries was limited.²⁸ The vertical nature of the Chile IIL regime is inspired by the DMCA. However, even before the 2010 legislation came into force, no copyright lawsuits were brought.²⁹ This indicates that Chile may have a less litigious society than other countries,³⁰ and/or that the remaining liability imposes costs on intermediaries that are not directly related to legal/court costs. The unchanged behaviour in terms of court actions makes it difficult to assess the impact of the 2010 law change.

5.3 The start-up scene in Chile

Chile has just started to develop a start-up scene, largely with help from the government-backed programme 'Start-Up Chile'. According to the Startup

²⁴ Center for Democracy & Technology (2012), 'Chile's notice-and-takedown system for copyright protection: an alternative approach'.

²⁵ The cases up to and including 2010 are summarised in Fernández-Díez, I., 'Comparative Analysis of the National Approaches to the Liability of Intermediaries for Infringement of Copyright and Related Rights', World Intellectual Property Organization. In *Fuentes vs Entel I* (1999), the court found that a creator of an online database with user content could be held liable if it does not remove content or disable access when it is aware of illegal content. A more recent case is *Abbott vs Google* (2012).

²⁶ Based on information provided by one of the interviewees.

²⁷ Center for Democracy & Technology (2012), op. cit.

²⁸ See Chapter 17.11.23 of the 'Chile Free Trade Agreement', 6 June, http://www.ustr.gov/tradeagreements/free-trade-agreements/chile-fta, accessed 5 February 2015.

²⁹ Some cases for defamatory content were brought. See The Center for Internet and Society (2010), 'Wilmap: Chile', 26 August, http://cyberlaw.stanford.edu/page/wilmap-chile, accessed 5 February 2015.

³⁰ Based on information provided by one of the interviewees.

Ecosystem Report, Chile's capital city, Santiago, now ranks 4th in the world in terms of having the right mindset, and 20th in terms of output.³¹

Start-ups do not often choose intermediary business models; those that do tend to launch ecommerce platforms. Examples of intermediary start-ups include loharia.com, yoozon.com, lectorati.com and kadriana.com.

Start-Up Chile

Launched in 2010 with 22 start-ups, by 2014 the programme had increased to several hundreds. Entrepreneurs go through a formal application process and, if selected, receive CLP20m equity-free seed capital and a one-year work visa, as well as a workspace shared with the other participants.³²

The success of the programme is not yet clear. In 2012, only 8% of the participating start-ups had been able to attract any investment after leaving the programme.³³ However, according to previous managers of the programme, 259 of 735 projects (35%) had raised further investment by 2014.³⁴ Several of those interviewed for this study indicated that the current ecosystem relies heavily on the government programme.

Factors that affect the start-up ecosystem

Several factors favour a positive development of the start-up ecosystem in Chile, only one of which is the entrepreneurial mindset. Product development is cheap relative to other start-up hubs.³⁵ The time required to start a business is six days,³⁶ the shortest in the set of focus countries.

Internet start-ups also face challenges in the Chilean market. With the exception of Start-Up Chile, financing opportunities are scarce, with very few angel investors and hardly any venture capital.³⁷ The target market is relatively small. Many start-ups focus on Chile first for at least two reasons: small cultural differences across countries require specific tailoring; and cross-border financial transactions are difficult owing to low credit card coverage and lack of cross-border acceptance. For intermediaries in particular, the amount of Spanish-speaking content is limited and ad-based business models are currently unlikely to generate sufficient click-throughs.³⁸

³¹ Hermann, B., Marmer, M., Dogrultan, E., Berman, R., Eesley, C. and Blank, S. (2012), 'The Startup Ecosystem Report 2012'.

³² The Economist (2012), 'The lure of Chilecon Valley', 13 October, http://www.economist.com/node/21564589, accessed 5 February 2015.

³³ Quiroga, J. and Cristino, C. (2012), 'Sólo 8% de los proyectos de Start-UP Chile ha levantado capital', Pulso, 23 May, <u>http://www.pulso.cl/noticia/empresa-mercado/empresa/2012/05/11-6481-9-solo-8-de-los-proyectosde-startup-chile-ha-levantado-capital.shtml</u>, accessed 5 February 2015.

³⁴ Melo, H. and Acevedo, M. (2014), 'Start-Up Chile', La Tercera, 15 May,

http://diario.latercera.com/2014/05/15/01/contenido/opinion/11-164451-9-startup-chile.shtml, accessed 5 February 2015.

³⁵ Based on information provided by one of the interviewees.

³⁶ World Bank, http://data.worldbank.org/indicator/IC.REG.DURS, accessed 5 February 2015.

³⁷ Hermann et al. (2012), op. cit.

³⁸ Based on information provided by one of the interviewees.

6 Country study: Germany

6.1 The effect of the IIL regime on start-ups

Risk of legal action

The risk of legal action for intermediary start-ups in Germany is low; in order not to overestimate the effect, we have assumed it to be 0. While the legal system is generally deemed efficient³⁹ and court costs relate to the value of a claim, the risk of being shut down is considered the main deterrent for intermediaries. This is likely to cause a certain level of over-compliance with the legislation.

Compliance costs

On the basis of interviews and a review of the literature and cases, we have found compliance costs in Germany to be particularly relevant for copyright infringements and partly driven by legal uncertainty. For start-ups, there may be limited clarity over the legality of certain features of a product or service, which is likely to lead entrepreneurs to design the product to be 'safe'. When intermediaries receive a notice, it is generally understood that take-down is likely to limit liability, but the filtering requirements create a grey area.

Impact on start-ups

Germany's start-up ecosystem could moderately benefit from increased liability protection in particular to increase its start-up success rate, as shown in Figure 6.1. Our model estimates that it could increase by 1.6 percentage points, translating into an increase of around 9% on its current success rate. The NPV of successful firms could increase by 3%.



Figure 6.1 Estimated impact of the IIL regime on start-ups in Germany

Source: Oxera analysis.

6.2 The IIL regime in Germany

Germany's liability regime limits the liability of intermediaries to some extent, but also creates uncertainty about its applicability to various types of case. The main provisions for copyright, defamation and other infringements are set out in Articles 8–10 of the Telemedia Act, which was passed in 2007 and is influenced

³⁹ Based on information provided by the interviewees.

by the E-Commerce Directive. The provisions limit criminal liability and prevent damages claims, but do not apply to actions for injunction.⁴⁰ According to legal experts, liability can be avoided if an intermediary exercises 'reasonable duty of care',⁴¹ although no formal notice-and-takedown regime has been established. Many cases have been taken to court, but have not yet removed legal uncertainty.⁴²

A considerable risk arises when an intermediary modifies user-generated content (i.e. by marketing or branding the content with its logo) and risks a formal adoption of the content as their own. In these cases, the intermediary may be held directly liable.⁴³ In addition, German law creates an additional type of liability, 'disturbance liability' (*Störerhaftung*), a doctrine unknown in other jurisdictions, which applies to copyright and trademark law. For example, private holders of unsecured WiFi have been held liable for copyright infringements of others.⁴⁴

Key areas of uncertainty

Several aspects of the German legislation appear unclear. The fact that the Telemedia Act does not consider search engines to be intermediaries creates ambiguity and the need for case-by-case interpretation to determine their liability.⁴⁵ Similarly, paid listings may⁴⁶ or may not⁴⁷ create liability for the provider. The auto-complete function provided by Google makes Google a content provider and imposes an incompletely defined obligation to prevent future instances of defamation.⁴⁸

In general, upon receiving a notification, intermediaries need to act, and the E-Commerce Directive rules out monitoring.⁴⁹ However, courts have imposed obligations on intermediaries, in several cases requiring monitoring or filtering. For example, intermediaries (in particular, auction platforms) are not exempt from liability for infringements that occur that are 'quintessentially similar' to past infringements,⁵⁰ or if they have 'an active role' in presenting the content—e.g. by putting content in preferred locations.⁵¹

6.3 The start-up scene in Germany

Germany's start-up scene is still developing, with Berlin lying in 15th place in the 2012 Startup Ecosystem Report. It ranks 5th on trend-setting, benefiting from Berlin's young and innovative talent.⁵²

⁴⁰ Hoeren, T. (2011), 'German Law on Internet Liability of Intermediaries', Country report prepared for the Internal league of competition law (LIDC) Congress.

⁴¹ Ibid.

 $^{^{\}rm 42}$ For an overview, see The Center for Internet and Society, 'Wilmap: Germany',

https://cyberlaw.stanford.edu/page/wilmap-germany, accessed 5 February 2015. ⁴³ Hoeren (2011), op. cit.

⁴³ Hoeren (2011), op. c ⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Ibid. and LG Hamburg, 312 O 887/03, 14 November 2003.

⁴⁷ Ibid. and LG München I, 33 O 21461/03, 2 December 2003.

⁴⁸ Hoeren, T. (2014), 'Internetrecht', April, http://www.uni-muenster.de/Jura.itm/hoeren/itm/wpcontent/uploads/Skript-Internetrecht-April-2014.pdf, accessed 5 February 2015.

⁴⁹ See Article 15 of the E-Commerce Directive.

⁵⁰ Hoeren (2011), op. cit.

⁵¹ Hoeren (2014), op. cit.

⁵² Hermann et al. (2012), op. cit.

Intermediaries tend to opt for commission-based revenues,⁵³ and around 14% of all start-ups rely on advertising revenues.⁵⁴ Examples of intermediary start-ups include eyeem.com, getamen.com and the more established soundcloud.com. 55

Berlin

Berlin is the centre of Germany's online start-up scene, while other cities, such as Cologne or Munich, have developed a different profile, such as media and high-tech start-ups.⁵⁶ Of the local start-ups, 65% say that the general conditions in Berlin are 'good', with the average German start-up satisfaction reaching only 37%.⁵⁷

More than half of the venture capital invested in IT and Internet start-ups in Germany went to companies located in Berlin, with an overall slightly increasing trend.⁵⁸ Berlin start-ups build active networks: around 50% of the start-ups cooperate with a local university,⁵⁹ and more than half receive support from business angels.60

Factors that affect the start-up ecosystem

Germany benefits from a solid infrastructure and increasing international attractiveness, which gives start-ups good access to talent. Of the start-ups, 67% focus on the German-speaking market, but increasingly target the global market as they grow.⁶¹

Entrepreneurs also need to overcome obstacles: even though funding is increasing, its level remains low such that many start-ups rely on borrowing from friends, family and banks.⁶² Investors for larger sums (Series A and B investments) are particularly hard to find.⁶³ Other factors perceived to hold entrepreneurs back include a strongly regulated labour market, high taxes, and a risk-averse cultural attitude.64

⁵³ Based on information provided by one of the interviewees.

⁵⁴ Herrmann et al. (2012), op. cit.

 ⁵⁵ Ernst & Young (2014), 'Start up Barometer Deutschland April 2014', April.
 ⁵⁶ Hahn, C. (ed.) (2014), *Finanzierung und Besteuerung von Start-up-Unternehmen. Praxisbuch für erfolgreiche* Gründer, pp. 7–15, Springer.

⁵⁷ Ernst & Young (2014), op. cit.

⁵⁸ Bitkom (2014), 'Venture-Capita-Investitionen in IT-Start-ups legen leicht zu', Presseinformation, 6 March, http://www.bitkom.org/files/documents/BITKOM Presseinfo Venture Capital 2013 06 03 2014.pdf. 59 VBKI (2013), 'StartingUpBerlin. Das VBKI Gründerbarometer', January.

⁶⁰ Ernst & Young (2014), op. cit.

⁶¹ Ibid.

⁶² Ibid.

⁶³ Based on information provided by one of the interviewees.

⁶⁴ Based on information provided by one of the interviewees.

7 Country study: India

7.1 The effect of the IIL regime on start-ups

Risk of legal action

The risk of legal action against intermediary start-ups is low since firms have a strong incentive to over-comply due to legal uncertainty. In the case of a lawsuit, legal expenses are likely to exceed the resources of a start-up, and lawsuits are reported to take more than 10 or even up to 20 years to resolve.

Compliance costs

The compliance costs in India are considerable; copyright claims are the main driver. The requirements to be covered by the safe harbour with certainty are perceived as demanding, especially for small firms and start-ups. For example, Mouthshut, a review platform, employs five people to deal with over 100 notices a month.⁶⁵

Impact on start-ups

Indian start-ups could gain from higher liability protection by making more startups succeed and by making those that succeed more profitable, as shown in Figure 7.1. The start-up success rate increases by 2.2 percentage points; however, since becoming a successful start-up is relatively difficult in India, this represents an increase by around 22% compared with the current success rate. Due to reduced compliance costs, the profitability of successful start-ups could increase by 5%.



Figure 7.1 Estimated impact of the IIL regime on start-ups in India

Source: Oxera analysis.

7.2 The IIL regime in India

The Indian liability regime has been amended several times over recent years. The safe harbours for intermediaries are set out in Section 79 of the Information Technology Act (IT Act), as updated in 2008, and paragraph 52(1)(c) of the

⁶⁵ Copenhagen Economics (2014), op. cit.

Copyright Act, amended in 2012.⁶⁶ Both provisions are widely regarded as ambiguous and create considerable uncertainty to intermediaries, as reflected in various court decisions.⁶⁷

The Copyright Act stipulates that intermediaries need to stop providing access to copyright-infringing work for 21 days, or longer if a court confirms the notice.⁶⁸ The IT Act requires companies to 'act within 36 hours' of receiving a notice, without specifying what action needs to be taken.⁶⁹ There is also variation in how the laws are applied in different states within India,⁷⁰ further increasing the uncertainty to which intermediaries are exposed.

Potential over-compliance

Arguably, the legal uncertainty creates a strong incentive for intermediaries to take down content in the event of a notice, no matter how likely or unlikely it seems that the content is infringing. A study into over-compliance⁷¹ shows that most intermediaries comply with notices that are obviously flawed. This is likely to have an effect on the freedom of speech—intermediaries are likely to take down any content that could be considered controversial.

Some companies make considerable efforts to avoid infringements. In the case of Quickr, an online classifieds site, 100 out of 400 employees monitor content.⁷² However, some risks remain, especially when the applicability of the safe harbours is ambiguous: the executives of Guruji, a search engine, were arrested in 2010 following claims that they were infringing copyright and could not seek protection under the safe harbour.⁷³ This eventually led to the shutdown of the music search site.

The music and film industries are often considered strong players in copyright enforcement. During the 2014 Football World Cup, a court approved the blocking of 472 websites, including several duplicates and websites unsuitable for video sharing (such as Google Docs).⁷⁴ The list was later reduced to 219 websites.⁷⁵ Filmmakers increasingly obtain 'John Doe orders', which allow them to enforce cease-and-desist orders without providing a comprehensive list of infringers.

⁷⁰ Based on information provided by one of the interviewees, and Copenhagen Economics (2014), op. cit.

⁶⁶ Gasser, U., Faris, R. and Heacock, R. (2013), 'Internet Monitor 2013: Reflections on the Digital World', *Berkman Center Research Publication*, 27.

⁶⁷ Based on U.S.-India Business Council (2013), 'Intermediaries–Messengers or Guardians? How India and US deal with the role and liability of intermediaries', *Legal Services Newsletter*, Fall 2013, and information provided by the interviewees.

⁶⁸ Ú.S.-India Business Council (2013), op. cit.

⁶⁹ In March 2013, the government clarified that the intermediary needs to respond to or acknowledge the complaint within 36 hours, see Software Freedom Law Centre (2014), 'Information Technology (Intermediaries Guidelines) Rules, 2011. An Analysis'.

⁷¹ Dara, R. (2011), 'Intermediary Liability in India: Chilling Effects on Free Expression on the Internet', Google Policy Fellowship.

⁷² Ure, J. (2013), ⁱAsia's Internet Challenge', Live Mint, 7July, http://blog.livemint.com/Opinion/TQMcJuaDFdi9oY63k6zvXI/Asias-Internet-challenge.html, accessed 5 February 2015.

⁷³ Pahwa, N. (2010), 'Execs of Sequoia Funded Guruji Arrested over Alleged Copyright Violation in India' Medianama, 30 April, <u>http://www.medianama.com/2010/04/223-execs-of-sequoia-funded-guruji-com-arrested-over-copyright-violation-in-india</u>, accessed 5 February 2015.

⁷⁴ The High Court of Delhi (2014), *Multi Screen Media Pvt Ltd v Sunit Singh and ors*, 23 June, http://delhihighcourt.nic.in/dhcqrydisp_o.asp?pn=119642&yr=2014, accessed 5 February 2015.

⁷⁵ IBN Live (2014), 'Airtel blocks 219 websites for infringing on Sony's world cup telecast rights', 8 July, ibnlive.in.com/news/airtel-blocks-219-websites-for-infringing-on-sonys-world-cup-2014-telecast-rights/484439-11.html, accessed 5 February 2015.

According to industry experts, this had led to over-blocking of content-sharing websites by ISPs.⁷⁶

7.3 The start-up scene in India

India's Internet economy is set to grow, as is its start-up ecosystem.⁷⁷ With current Internet coverage of just 13%,⁷⁸ there is large untapped potential for entrepreneurs once access to the Internet becomes more widely available. Investors have just begun to enter India, and Bangalore has been ranked 19th among global ecosystems.⁷⁹

Ecommerce platforms are the most common intermediaries, for two main reasons: Internet users are not accustomed to paying for online content;⁸⁰ and ad-based revenues do not currently generate sufficient income,⁸¹ often driving entrepreneurs towards transaction or licence fee models.⁸² Popular intermediary start-ups include india-forms.com, fropper.com, Salasar Auction and Snapdeal (although this is no longer a start-up).

Monetisation

One of the major issues for Indian intermediaries is successful monetisation i.e. making revenues from a user base. While some Internet users may not want to pay for online services, those who do often find it difficult to do so. Low credit card penetration and the lack of other online payment facilities can even make it worthwhile for start-ups to establish an in-person cash-collection network, as the dating website, stepout.com, does.⁸³

Investors expect that it may also take successful Internet and mobile business models longer, between five and seven years, to break even; platform models may need even more time.⁸⁴

Factors that affect the start-up ecosystem

India's start-up market is developing, and several factors are likely to increase its vibrancy in the near future. While many Indians are willing to use international intermediaries, many start-ups successfully replicate foreign business models.⁸⁵ Foreign investors have started to look for opportunities in India, and venture capital is available once a start-up has launched its product.⁸⁶ The government has just started to get engaged, with a new fund for young start-ups and the 'Startup Village' initiative to make entrepreneurship more attractive to the rural population.⁸⁷

⁷⁶ Software Freedom Law Centre (2014), 'A non-exhaustive timeline of Internet censorship by means of blocking of websites in India', <u>http://sflc.in/chilling-effects/website-blocking-content-takedown</u>, accessed 5 February 2015.

⁷⁷ McKinsey (2012), 'Online and upcoming: The Internet's impact on India', December.

⁷⁸ World Bank, http://data.worldbank.org/indicator/IT.NET.USER.P2, accessed 5 February 2015.

⁷⁹ Herrmann et al. (2012), op. cit.

⁸⁰ The Economist Intelligence Unit (2013), 'Good to grow? The environment for Asia's Internet businesses'.

⁸¹ Ibid.

⁸² Herrmann et al. (2012), op. cit.

⁸³ The Economist Intelligence Unit (2013), op. cit.

⁸⁴ Based on information provided by one of the interviewees.

⁸⁵ Based on information provided by one of the interviewees.

⁸⁶ Based on information provided by one of the interviewees.

⁸⁷ Pranbihanga Borpuzari (2014), 'Startup fund good, piquant situation as angel tax issue left unaddressed', *The Economic Times*, 10 July, <u>http://articles.economictimes.indiatimes.com/2014-07-10/news/51300893_1_union-budget-innovative-startups-indian-angel-network</u>, accessed 5 February 2015.

However, several factors are still limiting growth, many of which are related to regulation. India applies a 30% tax on angel investments;⁸⁸ foreign investment in retail business is restricted; and the treatment of capital gains tax on foreign investments puts venture capital investors at a disadvantage.⁸⁹ In spite of efforts to support entrepreneurship, making it through the early stage is particularly challenging: it appears that there is a lack of incubators⁹⁰ and it is difficult to raise seed-stage investment.

 ⁸⁸ Shenoy, D. (2012), 'The Startup Tax', Capital Mind, March, <u>http://capitalmind.in/wp-content/uploads/downloads/2012/03/The-Startup-Tax.pdf</u>, accessed 5 February 2015.
 ⁸⁹ Based on information provided by one of our interviewees.

⁹⁰ Herrmann et al. (2012), op. cit.

8 Country study: Thailand

8.1 The effect of the IIL regime on start-ups

Risk of legal action

On the basis of interviews and a review of the literature and cases, we have found that intermediary start-ups face legal risks even when they make efforts to comply with the legal requirements. In the case of legal action, the implications can be severe, given that, in addition to fines, courts have issued prison sentences to webmasters and have shut down services. The relatively wide definition of infringing content makes it particularly difficult to ensure compliance, even when intermediaries are willing to over-comply.

Compliance costs

The compliance costs in Thailand are high, ranging from the storage cost of user data for 90 days, to the monitoring of third-party content. Evidence of overcompliance exists—for example in the case of pantip.com, a web board: in four days, between 9 and 31 comments and between 18 and 31 entire threads were removed from observed discussion boards. In all four forums that were part of the study, less than 30% of censored content could be considered illegal, with the large majority being only 'problematic'.⁹¹ Another example is MThai, a web portal, which employs more than 20 people to check content before uploading, and prevents uploading during the night in order to limit its costs.⁹²

Impact on start-ups

Within our set of focus countries, Thai start-ups are held back the most by the IIL regime. As shown in Figure 8.1, the start-up success rate could be 1.5 percentage points higher, representing a 24% increase in the start-up success rate. The impact on the NPV of successful firms is considerably smaller, at 2%; this is due to the fact that, while the number of successful firms increases, some of them will be only marginally successful. In Thailand, the profitability does not increase by as much because of other limiting factors, such as the size of the target market and relatively low revenue per user.

⁹¹ Navanopparatskul, B., Sinthupinyo, S. and Ramasoota, P. (2013), 'Debunking Intermediary Censorship Framework in Social Media via a Content Retrieval and Classification Software', *International Journal of Information Retrieval Research*, **3**:1, pp. 1–26.

⁹² The Economist Intelligence Unit (2013), op. cit.





Source: Oxera analysis.

8.2 The IIL regime in Thailand

The liability for Thai intermediaries is laid out in Sections 5–16 of the Computer Crimes Act 2007 (CCA). The Act imposes high requirements on intermediaries to receive protection from liability, and includes severe fines for failure to comply: intermediaries can face charges equal to those imposed on primary infringers.⁹³

Intermediaries are defined widely, including cybercafes, for example. All intermediaries need to store information about all users for 90 days. ⁹⁴ The table below lists the content types that are deemed illegal or problematic under the CCA.

⁹³ Charoen, D. (2012), 'The Analysis of the Computer Crime Act in Thailand', International Journal of Information and Communication Technology Research, 2:6, pp. 519–26.

⁹⁴ Article 19 (2011), 'Submission to the UN Universal Periodic Review of the Kingdom of Thailand', Twelfth Session of the Working Group of the Human Rights Council, October.

Content area	Illegal content	Problematic content
Political	Lèse majesté	Hate speech and political satire
	Religious commentary and criticism	Political dissent
	Spam	Foreign relations and military
	Terrorism and separatism	Militants and extremists
Social	Alcohol and drugs	Cyber-bullying
	Defamation	Conflict
	Gambling	Dating
	Piracy	Economic, environmental, and public issues
	Pornography	Free expression and media freedom
	Privacy	Gay/lesbian content
	Provocative attire	Human rights
		Minority faiths
		Minority rights and ethnic content
		Sensitive or controversial history, arts, and literature
		Sex education and family planning

Table 8.1 Content subject to intermediary liability under the CCA

Source: Based on Navanopparatskul, Sinthupinyo and Ramasoota (2013), op. cit.

Section 15 of the CCA allows authorities to charge ISPs that *intentionally* support an offence. The legal definition of 'intention' is ambiguous—it has been interpreted to protect intermediaries that are unaware of infringing content. However, a webmaster of the Thai news site, Prachathai, was found guilty of not deleting illegal content quickly enough, even though the person in question was not aware of it.⁹⁵ The accused was given an eight-month prison sentence and fined THB20,000. The court stressed that 'as a Thai citizen, the defendant has a duty to protect the monarchy.'⁹⁶

While copyright is a less-debated issue, the legislation is no less ambiguous: in 2012 the Thai cabinet approved a draft amendment to the 1994 Copyright Act,⁹⁷ but the responsibilities of intermediaries are interpreted differently by various parties.⁹⁸

Blocked websites

The wide ban on content leads to considerable over-blocking of content. After political unrest in 2008, 1,203 websites were reported blocked, with a focus on discussion sites.⁹⁹ After a coup in May 2014, authorities made more than 200

⁹⁵ According to the judge, it was convincing that the accused would not notice an offensive comment for up to 11 days, but that a comment that was accessible for 20 days could not be compatible with the accused's duty of care. Kummetha, T. (2013), 'Court of Appeal finds Prachatai Director Guilty', Prachatai English, 8 November, http://www.prachatai.com/english/node/3738, accessed 5 February 2015.

⁹⁶ Ibid.

⁹⁷ Arammuang, N. (2013), 'Combating IP infringement in Thailand: posed amendments',

http://tilleke.com/sites/default/files/2013_Jan_Combating_IP_Infringement_Thailand_ECommerce.pdf. ⁹⁸ See, for example, Asia Internet Coalition (2013), 'Comments on the Proposed Amendments to Thailand's Copyright Act B.E. 2537', 1 October, <u>http://www.asiaInternetcoalition.org/thailand-copyrigh-act</u>, accessed 5 February 2015; and International Intellectual Property Alliance (2014), 'Special 301 Report on Copyright Protection and Enforcement. Thailand'.

⁹⁹ Wikileaks (2008), '1203 New Websites Censored by Thailand', 21 December,

https://wikileaks.org/wiki/1,203 new websites censored by Thailand, accessed 5 February 2015.

websites unavailable.¹⁰⁰ Increased political sensitivity and long prison sentences for infringers of the Lèse Majesté are likely to increase monitoring and overcompliance. The web board of Prachathai that led to a prison sentence for one of its webmasters went offline¹⁰¹ and other web portals confirm that they check content before uploading.¹⁰²

8.3 The start-up scene in Thailand

The Thai start-up ecosystem has just started to attract entrepreneurs and investors. Within South East Asia, Thailand's start-up environment is not yet the most vibrant, but it is likely to benefit from the region's expected economic growth.¹⁰³ Thai entrepreneurs often focus on the local market first, and only then consider expansion into other South East Asian countries.¹⁰⁴ Intermediary start-ups include Zodio, eKita.co and stylhunt.com.

Factors that affect the start-up ecosystem

While not many start-ups have become big in the Thai market so far, this may change in the near future. Investors from Singapore or Japan are beginning to look for opportunities in surrounding countries.¹⁰⁵ The local start-up scene looks set to evolve: two shared offices spaces, Hubba and LaunchPad, opened in 2012, and entrepreneurs are organising many events to collaborate.¹⁰⁶ The low cost of living may be attractive, especially for foreign entrepreneurs.¹⁰⁷

However, start-ups—in particular, intermediaries—still face major challenges. Making transactions online is difficult for anyone without a credit card, and of those who do own a card, many still prefer to use ATMs instead.¹⁰⁸ This requires start-ups to offer at least two payment methods. Start-ups also often experience difficulties finding talent, as many graduates prefer to work for international companies.¹⁰⁹ Moreover, the political sensitivities surrounding liability affect startups: the temporary shutdown of Facebook during a coup in May 2014 made both entrepreneurs and investors aware of the risk to which the country's online infrastructure is exposed.¹¹⁰

¹⁰⁰ Sakawee, S. (2014), 'Thailand's coup spreads from the streets to the web', Techinasia, 29 May, http://www1.techinasia.com/thailands-coup-spreads-streets-web-219-sites-blocked/, accessed 5 February 2015.

¹⁰¹ *Taipei Times* (2012), 'Verdict delayed for Thai media site's Web boss', 1 May,

http://www.taipeitimes.com/News/world/archives/2012/05/01/2003531724, accessed 5 February 2015. ⁰² Voice of America (2014), 'Thai Media Pressured Under Military Rule', 5 September, http://www.voanews.com/content/thai-media-pressured-under-military-rule/2439570.html, accessed 5

February 2015.

¹⁰³ Based on information provided by one of the interviewees.

¹⁰⁴ Based on The Economist Intelligence Unit (2013), op. cit. and information provided by one of the interviewees.

 ¹⁰⁵ Team YS (2013), 'Understanding the Thailand startup ecosystem with Matt Walters of Ardent Capital', Your Story, 15 July, <u>http://yourstory.com/2013/07/understanding-the-thailand-startup-ecosystem-with-matt-walters-of-ardent-capital/</u>, accessed 5 February 2015.
 ¹⁰⁶ Thailand Startup Review website, <u>http://thaistartup.net/content/thailand-it-startup-timeline</u>, accessed 5

⁰⁶ Thailand Startup Review website, <u>http://thaistartup.net/content/thailand-it-startup-timeline</u>, accessed 5 February 2015.

¹⁰⁷ Team YS (2013), op. cit.

¹⁰⁸ Based on The Economist Intelligence Unit (2013), op. cit., and information provided by one of the interviewees.

¹⁰⁹ Team YS (2013), op. cit.

¹¹⁰ Purnell, N. (2014), 'Thai Startups Wary After Facebook Outrage', *The Wall Street Journal*, 30 May, <u>http://blogs.wsj.com/searealtime/2014/05/30/thai-startups-wary-after-facebook-outage/</u>, accessed 5 February 2015.

9 Conclusion

Intermediary start-ups contribute to the growth of and innovation on the Internet. Holding them liable for the content they make available reduces the incentive for entrepreneurs to develop new intermediary business models, while reducing the costs of enforcing copyright, defamation and related laws. For the entrepreneurs who decide to start an intermediary firm, the chances and rewards of success are lower. Hence, IIL is an important issue for policymakers.

Oxera's research has shown the impact of IIL regimes on intermediary start-ups. It has also highlighted the following implications for the design of IIL regimes.

- Find the right balance: the enforcement of copyright and other laws through intermediaries is likely to be effective, but its implications for the legitimate use of intermediaries need to be considered. Hence, an optimal IIL regime will not clear intermediaries of liability entirely in all cases, but will limit it to a reasonable extent.
- **Costs matter**: when designing safe harbours, the costs of compliance are likely to have a considerable impact on intermediaries, particularly on startups. Hence, it is not sufficient to reduce the legal risk, but the design of the specific conditions should account for the costs that they impose on intermediaries through compliance.
- Legal uncertainty increases costs: if legal provisions are unclear, intermediaries will find it difficult to ascertain the required extent of compliance procedures and processes. In most cases, this will lead to over-compliance, which increases costs, or will prevent entrepreneurs from entering the market.
- **Start-ups comply**: the impact of legal risk and uncertainty on start-ups is likely to be stronger than on established firms. Start-ups do not have the resources to engage in legal action even when they are likely to win, but prefer to comply with requests. Even legitimate user-generated content may be removed as a precaution.
- Start-up vibrancy is lost: high risks and compliance costs reduce the chances of start-ups being successful. This is likely to have negative repercussions for the wider start-up environment, including the attractiveness to investors, and the exchange of ideas and knowledge among start-ups. This means that even when start-ups are not observed to fail as a direct result of liability issues, the IIL regime may have an indirect effect on the attractiveness on entrepreneurship.

A1 Methodology

In this report, we combine data available from various sources with a descriptive understanding gained through interviews and existing research. Based on these inputs, we have built a micro-simulation model that simulates the development of start-ups and allows us to estimate the size of the effect of increased liability protection at the level of the individual start-up and at the aggregate level.

A1.1 Micro-simulation models

Micro-simulation is frequently used in policy assessment, for example in the context of changes in the tax or health system or regulation of financial services.¹¹¹ One central aim of micro-simulation modelling is to inform current policy debates by modelling potential future policy changes, based on assumptions on their impact on individuals, without the need to implement the changes at the time.

In the context of this study, micro-simulation means that the start-up survival and profitability are modelled at the individual start-up level, rather than the aggregate or market level. The aggregate view can then be obtained by considering the characteristics of all individual start-ups together. The micro-simulation model developed for this study has three main characteristics:

- it is dynamic in discrete time: it models the development of intermediary startups over the period of five years with quarterly intervals;
- it uses synthetic data: as no data on large samples of individual start-ups is available, we inferred the distribution of the variables required for the model based on available datapoints. This allows us to use the existing data in the most efficient way;¹¹²
- it analyses the impact on firms: while many micro-simulation models focus on the impact on individuals, the approach can also be applied to firms.¹¹³ This study estimates the impact on start-ups rather than on individual entrepreneurs.

A1.2 Interviews

We have conducted interviews with 19 professionals who have experience with the IIL regime and start-up ecosystem in general and in the focus countries.

Legal focus: we spoke with four lawyers practising and/or teaching on intermediary liability in Chile, Germany and India, and with experience in global approaches to litigation relating to intermediary liability. We also spoke with an academic who works on research on the Thai IIL regime.

Internet start-up focus: we spoke with a wide range of people who work for and with Internet start-ups, particularly intermediaries. These include entrepreneurs who are active in Chile, Germany and Thailand, and an entrepreneur who led a now globally active Internet start-up. Two interviewees are actively engaged in

 ¹¹¹ More examples can be found in Spadaro, A. (ed.) (2007), 'Microsimulation as a tool for the evaluation of public policies: Methods and applications', Fundacion BBVA.
 ¹¹² A more detailed explanation and examples can be found in Li, J. and O'Donoghue, C. (2013), 'A survey of

¹¹² A more detailed explanation and examples can be found in Li, J. and O'Donoghue, C. (2013), 'A survey of dynamic microsimulation models: uses, model structure and methodology', *International Journal of Microsimulation*, **6**:2, 3–55.

¹¹³ Shahnazarian, H. (2011), 'A dynamic micro-econometric simulation model for firms', *International Journal of Microsimulation*, 4:1, 2–20.

advising start-ups in South America and Germany, respectively. We also interviewed a venture capital investor with global experience from India.

We spoke to five Google Policy Managers and two Google employees with expertise in local start-up communities.

A2 Model specification for the focus countries

The model used to estimate the direct effect of a change in the IIL regime on intermediary start-ups is based on assumptions derived from a variety of sources. Where possible, we have used a consistent approach and comparable data sources across countries.

For some of the parameters used in the modelling, little data is collected by official sources. In these cases, we have combined information and views from several non-official sources, including insights from the interviewees for this study. We have used this information consistently across countries when our sources indicated that the patterns across countries were similar, as in the case of user growth rates. When our research indicated that a parameter differed across countries, we used hard data where available. Where no specific information was available for some of the countries (e.g. on revenues and compliance cost per user), we have inferred the parameters based on the data available for other countries and qualitative information provided by our sources.

The following sections describe the inputs into different parts of the model, listing the inputs and sources we used to obtain a coherent model for each country. To ensure the robustness and plausibility of the assumptions, we have cross-checked the results of the model with the outcomes achieved in the actual start-up ecosystems.

A2.1 User base

The user base is a central driver of the model and the success of start-ups. While the level of the user base differs by country, we expect similar dynamics to apply to intermediaries across regions. The user base over time is dependent on the size of the user base at launch and subsequent growth.

User base at launch: we assume that the maximum initial user base is a share of the potential target market. The potential target market is given by the population size, the share of the population with access to the Internet (both are country-dependent) and the size of the targeted segment. To ensure consistency across countries, we have applied the same proportionate assumption in each case to identify the size of the target market (assumed to be 10% of the Internet-using population) and the maximum proportion that can be addressed at launch (assumed to be 0.04% of the potential target market). The amount of this user base that is actually addressed at launch depends on the amount of funding the start-up can secure in the product development phase. In accordance with insights from our interviewees and desk research, we have assumed that higher funds before product launch allow for a higher initial marketing expenditure, which increases the likely initial user base.

User growth: the user growth rate is stochastic, which means that its value is taken from a certain distribution. We have found various sources on the range of user growth rates that intermediary start-ups can be expected to achieve. While almost all of them achieve positive growth rates, only a few will achieve sustained high growth. We have assumed that growth rates follow an exponential distribution, starting from zero. A database of Internet start-ups suggests that the median monthly growth rate is likely to lie between 8.7% and 14.0%, depending on the current size of the user base.¹¹⁴ Based on discussions with the interviewees and given that the companies that are willing to disclose their user base may be among the more successful ones, we have used the

¹¹⁴ Compass (2014), 'Are you growing fast enough?', 24 March, <u>http://blog.startupcompass.co/how-to-avoid-74-percent-of-startup-failures-benchmark-growth</u>, accessed 5 February 2015.

lower end of the range, and assumed 8.7% as the median monthly growth, translating into 28.4% growth per quarter. That would translate into a growth rate of around 172% year on year, which is slightly higher than the data collected by a venture capital firm would suggest,¹¹⁵ but lower than the weekly growth of 5–7% envisaged by start-up expert, Paul Graham.¹¹⁶ We also assumed that growth rates cannot exceed 200% per quarter. The resulting distribution of user growth rates is shown in Figure A2.1.





Source: Oxera analysis.

The growth rate for each particular start-up is affected by its growth in the previous quarter. To capture this effect consistently between countries, we have assumed a serial correlation of 0.9 between the quarterly growth rates. This means that the growth rate of the previous quarter has a strong influence on the growth rate in the subsequent quarter.

Some very successful start-ups may even approach the size of the target market. As they get closer, we assume that growth rates fall slightly, as suggested by both Compass and data from a venture capital firm.¹¹⁷ Hence, the target market size effectively acts as a cap for the very positive outliers. This is unlikely to be an accurate representation of very successful start-ups, as they would be likely to consider expansion into other markets; however, we have found that this affects only a very small number of start-ups in our model and a more detailed modelling of their behaviour would not materially affect the results.

A2.1.1 Country-specific

The country-specific inputs into the user base are limited to the determination of the initial user base. Table A2.1 lists the relevant variables and sources.

¹¹⁵ Maltz, J. and Saljoughian, P. (2013), 'How Fast Should You Be Growing?', 24 August,

http://techcrunch.com/2013/08/24/how-fast-should-you-be-growing/, accessed 5 February 2015. ¹¹⁶ Graham, P. (2012), 'Startup=Growth', September, <u>http://www.paulgraham.com/growth.html</u>, accessed 5

¹¹⁶ Graham, P. (2012), 'Startup=Growth', September, <u>http://www.paulgraham.com/growth.html</u>, accessed 5 February 2015.

¹¹⁷ See Compass (2014), op. cit. and Maltz, and Saljoughian (2013), op. cit.

Variable	Chile	Germany	India	Thailand	Source
Population (m)	17.6	80.6	1,252.1	67.0	World Bank
Internet coverage (%)	61	84	13	27	World Bank
Mean initial user base	111	760	1,702	184	Based on population size and Internet coverage
Maximum initial user base	433	2,709	6,311	710	Based on population size and Internet coverage

Table A2.1 Assumptions and data on the initial user base by country

Source: Oxera analysis.

A2.2 Funding

A start-up requires funding when it comes into existence, and often also to continue to exist while it is not yet generating (sufficient) revenues to cover its costs. We have assumed that funding from different sources comes into play before launch and when the start-up is running. In the pre-launch phase, funds from the entrepreneur and external sources may be distinguished.

Private funds: entrepreneurs will be expected to bring in some initial private funds, which may also come from family, friends, angel investors, or even bank loans. As a representative estimate, we have taken this figure to be 1.5 times annual salaries in the IT sector, as published on platforms about employment and salaries. The figure represents a midpoint between the estimated costs of successful intermediary development¹¹⁸ and discussions with experts. It is likely to include some time investment from the founder or founding team who could otherwise earn a salary.

Venture capital: entrepreneurs may also try to raise venture capital, the amount and probability of which differ by country. We have used data on the probability of obtaining seed funding where available and otherwise inferred it based on comparative and/or qualitative information. It was found to be below 10% in all countries. The model determines stochastically when the environment provides seed funding. The amounts made available are assumed to follow a uniform distribution between minimum and maximum amounts that we inferred from published data on actual seed funding rounds.

Ongoing funding: funding may be raised as the start-up develops. We have assumed that additional capital becomes accessible as new users are added to the current user base. The funding may come from venture capital funds that are interested in investing in more developed businesses (series A or B rounds), or from other external parties that wish to invest in the business model. Even where monetisation is low, such funding may represent increased availability of finance based on expectations about future growth and revenue opportunities. Such funding can be a key part of the capital available to start-ups and is likely to be related to the established user base of the start-up. For this reason, we have assumed this additional funding to be: a) equal in magnitude to the quarterly revenue per user; and b) accruing as a one-off to each new user that joins the user base.

In the base model, we have applied a minimal underlying set of assumptions concerning investment behaviour—they prescribe that no money can be taken

¹¹⁸ Boyd Myers, C. (2013), 'How much does it cost to build the world's hottest startups?', 2 December, <u>http://thenextweb.com/dd/2013/12/02/much-cost-build-worlds-hottest-startups/</u>, accessed 5 February 2015.

out once it is made available, and that no additional money is invested when a start-up is running out of cash, even when recovery would seem feasible in the short to medium term. A variation to this assumption is considered in Appendix A3.

A2.2.1 Country-specific

Various sources were combined to obtain assumptions for the funding parameters. Table A2.2 lists the main inputs into each parameter for each country.

Table A2.2 Assumptions on funding by country

Variable	Chile (CLP)	Germany (EUR)	India (INR)	Thailand (THB)	Source
Private funds	16.05m	70,033	637,079	506,898	1.5 times annual IT salary (as published on <u>www.glassdoor.com</u> , <u>angel.co</u> and other websites)
VC seed funding: probability	1.6%	8.0%	5.0%	1.5%	Chile: inferred from Hermann et al. (2012), op. cit., and Germany figure; Germany: ZEW study ¹ ; India: a combination of sources ² ; Thailand: inferred from relative ranking in the GITR report ³ and Chile figure
VC seed funding: minimum	2.97m	14,233	653,387	356,753	Publicly available information on seed funding for Internet start-ups
VC seed funding: maximum	98.1m	892,904	12.02m	713,507	Publicly available information on seed funding for Internet start-ups
Ongoing funding per user	772	2.17	13.13	17.56	Revenue per user (see below)

Note: ¹ Müller, B., Egeln, J., Höwer, D., Licht, G. and Murmann, M. (2012), 'Hightech-Gründungen in Deutschland. Gründungsdynamik im ITK-Sektor', November. ² This combines information from Pulluru, S. (2013), 'Accelerate your Startup to Success', 24 June,

http://thetechpanda.com/2013/06/24/accelerator-your-startup-to-success-workshop/, and Chanchani, M. (2013), 'Investors expand capital funds to supports startups', *The Economic Times*, 20 March, http://articles.economictimes.indiatimes.com/2014-03-20/news/48402248 <u>1</u> venturecapital-blume-ventures-capital-funds, both accessed 15 October 2014, and information provided by one of the interviewees for this study. ³ Bilbao-Osorio, B., Dutta, S. and Lanvin, B. (eds.) (2014), 'Global Information Technology Report 2014. Rewards and Risks of Big Data', World Economic Forum and INSEAD.

We do not preclude the possibility that other estimates or cases of higher or lower funding than covered by our distribution may exist. However, we consider the order of magnitude to be based on the available evidence and consistent across countries.

A2.3 Revenues

Revenues are crucial for a start-up to be able to cover its costs, and eventually reach a positive cash flow and generate profits. Start-ups can opt for different revenue-generating models, and some may even decide to delay monetisation until a later stage when a certain user base is using their service. Ways to generate revenue include advertising, upfront prices, commissions and subscriptions ('freemium' models are a variant in which the basic service is free of charge with additional features charged to the user).

Per-user revenue: we estimated one figure for the quarterly revenues from all types, as the available data was not sufficient to split them out. The level of revenue is stochastically drawn from a triangular distribution. The starting point of the distribution is at 0, while the peak and maximum value are inferred from intermediaries whose prices or (aggregate) revenues are publicly available. We

adjusted the available figures based on our literature review and discussions with experts—for example, all obtained datapoints were multiplied by a factor of 0.5 to account for the fact that publicly available data is unlikely to be representative of the industry, but is likely to indicate values above the average.

A2.3.1 Country-specific

We reviewed a range of intermediaries for each country to obtain their prices or revenue per user at an aggregate level. Based on the available datapoints and qualitative insights from our interviewees, we imposed the assumptions on quarterly revenues per user set out in Table A2.3.

Variable	Chile (CLP)	Germany (EUR)	India (INR)	Thailand (THB)
Minimum per-user revenue	0	0	0	0
Peak per-user revenue	728	0.88	1.88	4.39
Maximum per-user revenue	1,588	5.64	37.50	48.28
Sources	Includes Loharia.com, reglut.cl, comparaonline.cl, chevereto.com	Includes Xing.com, wunderlist.com, Dawawas	Includes JustUnfollow, MobiKwik and Snapdeal	Includes Ookbee and input on its position relative to India

Table A2.3 Assumptions on revenues per user by country

Source: Oxera analysis.

A2.4 Operating costs

Some of the most successful Internet start-ups are said to have been born in a garage with very simple equipment. However, most start-ups incur significant per-user costs, especially at the outset before network effects and economies of scale take effect.

We have distinguished between four main types of cost: start-up costs, staff costs, marketing costs and technology costs. Employees are considered by far the most important cost driver, as most start-ups tend to perceive doing things themselves as more appropriate when faced with make-or-buy decisions.¹¹⁹ The relative importance of marketing and technology costs varies by country. We have assumed that all ongoing cost components are characterised by relatively strong economies of scale. Sensitivities to this assumption are explored in Appendix A3.

Start-up costs: before a firm can be founded, certain administrative steps are required. However, the number of procedures and their expected duration and cost vary considerably by country. To estimate this basic upfront cost, we multiplied the cost to register a business (indicated as a percentage of per-capita income) by the GDP per capita.

Staff costs: start-ups are often founded by small teams that can grow quickly if the business model becomes successful. At the beginning, entrepreneurs often take on various roles; specialisation is likely to increase as the company grows. Our assumption regarding the number of staff required to deal with a certain number of users is based on discussions with interviewees and publicly available data of intermediary start-ups. We also assumed that the number of staff grows in full-time equivalents (i.e. we have not considered part-time employees). This

¹¹⁹ Information provided by several of the interviewees.

means that, at the early stage in particular, gaining more users can lead to a temporary increase in the staff cost per user (see Figure A2.2 for an example).





Source: Oxera analysis.

Marketing costs: in the context of platforms marketing costs often materialise in the form of 'customer acquisition costs' and are used to advertise on the Internet, offer promotions or organise events. This may suggest that, by controlling marketing costs, start-ups could exercise some control over their user base. However, according to the interviewees for this study, this control is fairly limited as the value of the product to potential users is considered the main driver of the user base. Besides, word-of-mouth plays an important role for intermediary start-ups and is difficult to influence. To determine the level of marketing costs per user, we assumed that the quarterly cost of acquiring the first users equals 1.5 times the average quarterly revenue per user. This means that the initial revenues are likely to be smaller than the marketing costs, but as the user base grows, the costs per user fall quickly.

Technology costs: we have assumed that the prices for technology across countries are roughly similar in absolute terms. Hardware and software are often priced similarly across regions; this generally leads to technology being more expensive compared with other goods in less-developed countries. Broadband connections and mobile data may even be more expensive in absolute terms in countries with a lower level of technology adoption.¹²⁰ We assume a maximum level of technology costs per quarter and user of US\$1, converted into local currency. However, these costs fall relatively quickly due to economies of scale.

A2.4.1 Country-specific

The costs vary by country, often representing different income levels—as in the case of staff costs and marketing costs. We have used consistent sources to arrive at estimates for the different cost components, as shown in Table A2.4.

¹²⁰ For example, the Ookla Net Index indicates that broadband is most expensive in both relative and absolute terms in India (with a median cost of Megabit per second of \$8.97, representing around 10% of monthly GDP per capita), but cheapest in Thailand in absolute terms (at a price of \$2.29), and in Germany in relative terms (representing 0.08% of monthly GDP per capita), <u>http://www.netindex.com/value/allcountries/</u>, accessed 5 February 2015.

Variable	Chile (CLP)	Germany (EUR)	India (INR)	Thailand (THB)	Source
Staff costs per quarter and employee	2.68m	11,672	106,180	84,483	Publicly available IT salaries (from <u>www.glassdoor.com</u> , <u>angel.co</u> and other websites)
At-launch marketing costs per quarter and user	1,158	3.28	20	26	Based on the mean quarterly revenue per user (see above) and discussions with the interviewees
At-launch technology costs per user and quarter	557	0.73	59	31	Based on industry reports and discussions with the interviewees
Start-up costs	61,601	1,568	41,544	11,897	Based on the cost of starting a business (as a share of income per capita) in 2014 and the GDP per capita in 2013, both from the World Bank

Table A2.4 Operational cost components by country

Source: Oxera analysis.

A2.5 The IIL regime and liability costs

The current level of risk and costs associated with the IIL regime is the main driver of the effect of changing the IIL regime to a level with full compliance at a low cost and no residual risk. While specific start-ups may decide to turn down legal advice or to over-comply by employing full monitoring, we have aimed to capture the approach that start-ups typically pursue, as indicated by industry reports and insights provided by the lawyers, entrepreneurs, investors and policy researchers interviewed for this study. To determine the impact of a change in these costs, we have estimated both a 'current regime' and an 'increased protection' scenario (as explained in section 4.2).

We have focused on estimating the direct costs that liability creates for firms, as described in section 3.2.1. We split these costs into two categories: the cost of monitoring and compliance; and the cost of legal proceedings if and when they are brought.

Cost of monitoring and compliance: we found that the costs of monitoring and the costs of compliance are associated with similar activities. The main cost driver is the time and effort dedicated by staff, often involving the founding team. In addition, certain technological knowledge and requirements are essential to exercise some control over the alleged infringing content, where possible. Furthermore, legal advice is often required to assess the legitimacy of claims and to respond to them.

We based the figures on publicly available information on monitoring and compliance efforts of intermediaries in the focus countries, and on estimates provided by the interviewees. The experts indicated that, while small companies might be targeted by complaints, bigger start-ups face much greater exposure to complaints requiring more monitoring and compliance. This means that economies of scale are likely to be absent. Where required, we have framed the costs of monitoring and compliance as a percentage of staff costs at a certain stage in the start-up development.

We found that while the costs in the 'increased protection' scenario are lower than in the 'current regime' scenario, their levels also depend on the definition of illegal content. This means that the assumed minimum compliance cost in Thailand and India is above that in Chile and Germany.

Sensitivities based on variations of this assumption are presented in Appendix A3.

Probability and cost of legal proceedings: we estimated the probability of legal proceedings as a function that increases with the number of users, but eventually flattens out. We also incorporated a likelihood of losing the legal proceedings, which means that the intermediary is required to pay damages or a fine. Irrespective of losing, certain costs may need to be incurred to get through the legal proceedings. We evaluated publicly available information on legal cases as well as information provided by our interviewees to estimate these costs. To estimate the costs of legal proceedings, we evaluated publicly available information on legal costs and fines.

In three of the four focus countries, the probability of legal proceedings was found to be close to zero; while informative from a modelling perspective, this meant that there was insufficient data to estimate the precise probability of legal action. In two countries, the presence of some isolated legal actions brought against start-up intermediaries indicates that the number is likely to be non-zero; however, in the absence of evidence on the magnitude, we found it to be conservative to run our model on the assumption of a zero probability.

A2.5.1 Country-specific

The liability costs vary by IIL regime and by scenario. The risk of legal proceedings could be established with sufficient precision only in the case of Thailand; therefore, this is the only case where the costs of legal proceedings feed into our model. Table A2.5 lists the value used in the central specification of the model.

Table A2.5 Liability costs by country

Variable	Chile (CLP)	Germany (EUR)	India (INR)	Thailand (THB)	Source
Quarterly monitoring and compliance costs per user— current regime	34.65	0.23	2.75	3.28	Based on estimates from the interviewees and publicly available data from intermediaries
Quarterly monitoring and compliance costs per user— increased protection	13.86	0.06	0.82	0.66	Based on estimates from the interviewees
Increase in and maximum probability of legal proceedings per 100,000 users—current regime	n/a	n/a	n/a	5%/50%	Based on estimates from the interviewees and reported frequency of legal proceedings for intermediaries
Increase in and maximum probability of legal proceedings per 100,000 users—increased protection	0%/0%	0%/0%	0%/0%	0%/0%	Based on discussions with the interviewees and the arguments presented in section 2.3
Chance of losing legal proceedings	n/a	n/a	n/a	50%	Based on discussions with the interviewees
Costs of legal proceedings	n/a	n/a	n/a	30,000	Based on publicly available data on legal fees and lawyers' salaries
Fine amount	n/a	n/a	n/a	60,000	Based on Section 15 of the CCA (it can be up to THB100,000, but has also been lower in some cases)

Source: Oxera analysis.

A2.6 Outcomes: success rate and profitability

We calculated the success rate and profitability in the same way across countries, with all differing assumptions described above.

Success rate: the intermediary start-ups are assumed to go out of business after a short period after having no more funds available. Funds tend to diminish quickly shortly after launch. We calibrated the model to reflect the suggestion from several interviewees and online research that most start-ups do not fail immediately, but often in the second or third year. However, in many cases, a start-up does not cease to exist at the very moment when the last cash is spent; entrepreneurs may often decide to work without getting paid and even use overdrafts if a turnaround seems in sight. We assumed this period to last nine months at most, after which revenues would need to cover the costs; otherwise, the start-up is assumed to go out of business. A variation of this assumption is presented in Appendix A3.

Profitability: we used the NPV over five years as a main indicator of profitability. We calculated it as the sum of quarterly profits which were discounted at a rate of 15% annually across countries. While it may be argued that the risks and therefore discount rates should differ, the model captures the change in the NPV due to a change in the IIL regime, and does not aim to capture precisely the exact level of NPV after discounting.

A3 Sensitivities

We tested the sensitivity of the results when using assumptions that depart from those made in the base scenario and set out in Appendix A2. Since there is some uncertainty in the precise magnitude of some assumptions, we explore the impact of considering different magnitudes on the size of the effect of changing the IIL regime. We varied four assumptions as set out below; we find that the size of the effect differs within modest ranges, as shown in Table A3.1.

Table A3.1 Results of the base case and summary across sensitivities

		Chile	Germany	India	Thailand
	Start-up success: current regime	11.3%	18.0%	7.6%	6.5%
ario	Start-up success: increased protection	11.8%	19.6%	9.2%	8.0%
cen	Percentage change	3.6%	8.7%	21.5%	24.0%
e se	NPV: current regime	1,317	18	334	65
Bas	NPV: increased protection	1,335	19	351	67
_	Percentage change	1.4%	2.9%	4.9%	2.3%
≥ s	Start-up success change: minimum	2.8%	6.6%	16.3%	8.3%
mar oss ario	Start-up success change: maximum	4.5%	10.6%	26.5%	29.8%
acro	NPV change: minimum	1.1%	2.4%	2.9%	1.8%
ŝ	NPV change: maximum	1.5%	4.1%	6.7%	3.5%

Source: Oxera analysis.

Scenarios 1 and 2: 'patience' of the entrepreneur

The base case assumes that entrepreneurs can run a start-up without funds for a maximum of nine months if it starts to generate profits within this period (see section A2.6). As sensitivities, we considered a change in both directions, and calculated the impact of changing the IIL regime on the start-up success rate and profitability with a maximum period of six months (two quarters) and 12 months (four quarters). The results (presented in the table below) indicate only moderate changes in the size of the effect of a change in the IIL regime.

Scenario 3: 'active investors'

The base case assumes that investors do not actively respond to legal actions i.e. they do not aim to reduce their investment if the risk of failure of the start-up potentially increases if it is subject to a lawsuit. They also do not respond to break-even prospects and stop investing if no sufficient revenues are generated (see section A2.2). As a sensitivity, we assumed that investors change their behaviour with respect to both legal actions and future profitability. In particular, we assumed that investors reduce their investment by 25% over the period of a year if a start-up becomes involved in legal proceedings, and we assume that they invest additional funds if break-even is expected over the course of a year. The results are presented in the table below, and indicate modest effects on Chile, Germany and India, while the effect on the start-up success rate in Thailand is considerably reduced.

Scenarios 4 and 5: economies of scale

The base case assumes relatively strong economies of scale in the operating costs (see section A2.4). We considered variations to these assumptions and ran the model based on over 10% lower and higher economies of scale. While these changes have a relatively strong impact on the absolute levels of start-up

success and profitability, they only slightly affect the size of the effect of changing the IIL regime.

Scenarios 6 and 7: compliance costs

As no precise data on the level of compliance costs is available, we considered variations of plus and minus 20% compared with the assumed level based on existing research and interviews (see section A2.5). As shown in the table below, we have found that the lower the compliance costs are, the smaller the effect of changing the IIL regime.

Table A3.2 Results of the sensitivities

				Chile	Germany	India	Thailand
_			Start-up success: current regime	11.3%	18.0%	7.6%	6.5%
nario			Start-up success: increased protection	11.8%	19.6%	9.2%	8.0%
Sen			Percentage change	3.6%	8.7%	21.5%	24.0%
se sce			NPV: current regime	1,317	18	334	65
Bas			NPV: increased protection	1,335	19	351	67
_			Percentage change	1.4%	2.9%	4.9%	2.3%
	_		Start-up success: current regime	9.3%	15.7%	6.3%	5.0%
<u></u>	۲¥٥		Start-up success: increased protection	9.7%	17.1%	7.6%	6.3%
è.	ē	ers	Percentage change	4.2%	9.3%	21.0%	25.9%
enal	lsh	nan	NPV: current regime	1,406	19	327	72
Sc	000	σ	NPV: increased protection	1,424	19	349	73
	č		Percentage change	1.3%	2.8%	6.6%	1.8%
	L		Start-up success: current regime	14.0%	20.5%	9.7%	8.5%
enario 2: sh for fou	Įon		Start-up success: increased protection	14.4%	22.2%	11.6%	10.4%
	e fo	ters	Percentage change	3.0%	8.3%	19.3%	21.7%
	lsh	uar	NPV: current regime	1,213	17	335	58
ŝ	о С	σ	NPV: increased protection	1,231	18	346	59
	č		Percentage change	1.5%	3.0%	3.4%	2.7%
			Start-up success: current regime	11.4%	18.1%	7.8%	7.4%
	ors		Start-up success: increased protection	11.8%	19.6%	9.4%	8.0%
03	esti		Percentage change	3.4%	8.6%	20.9%	8.3%
nari	<u>S</u>		NPV: current regime	1,312	18	336	65
Sce	live		NPV: increased protection	1,330	19	353	66
.,	act		Percentage change	1.4%	3.1%	5.1%	2.6%
	ę		Start-up success: current regime	17.8%	29.7%	18.2%	11.9%
4.	es		Start-up success: increased protection	18.3%	32.0%	21.4%	14.3%
<u>io</u>	E o	e	Percentage change	2.8%	7.6%	17.9%	20.2%
ena	con	SCo	NPV: current regime	1,135	14	257	51
s,	Р П		NPV: increased protection	1,151	15	264	52
hia	hig		Percentage change	1.4%	2.9%	2.9%	2.8%

		Chile	Germany	India	Thailand
f	Start-up success: current regime	5.8%	9.3%	3.6%	2.6%
es ci	Start-up success: increased protection	6.1%	10.2%	4.3%	3.3%
le Di	Percentage change	4.5%	9.7%	21.1%	27.7%
ena conc sca	NPV: current regime	1,549	21	350	86
V ec	NPV: increased protection	1,565	22	373	89
<u>0</u>	Percentage change	1.1%	4.1%	6.7%	3.5%
¢)	Start-up success/current regime	11.2%	17.6%	7.1%	6.1%
6: ance	Start-up success/increased protection	11.7%	19.4%	9.0%	7.9%
rio (st	Percentage change	3.8%	10.6%	26.5%	29.8%
ena com cos	NPV/current regime	1,310	18	331	65
gh c	NPV/increased protection	1,329	19	349	67
'n	Percentage change	1.5%	3.7%	5.6%	2.7%
	Start-up success/current regime	11.5%	18.5%	8.2%	6.9%
7: nce	Start-up success/increased protection	11.8%	19.7%	9.5%	8.1%
rio . st	Percentage change	3.2%	6.6%	16.3%	18.0%
ena om co:	NPV/current regime	1,335	18	339	66
SC SC	NPV/increased protection	1,350	19	351	67
<u>o</u>	Percentage change	1.2%	2.4%	3.5%	1.8%

Source: Oxera analysis.

A4 The potential full effect

To illustrate the full impact of liability, we have created a generic start-up ecosystem that is calibrated based on the patterns of the key drivers identified in the analysis of the focus countries. This model allows us to capture the effect of going from an environment with high legal risks to an environment with full compliance at a low cost and no residual risk. This means going from the bottom-left to the bottom-right part in Figure 2.2.—i.e. going from a regime with no safe harbours to one with high legal protection for intermediaries.

In this model, the 'current' regime is characterised by very high legal risk, but low compliance costs (as no exemption from liability is possible)—i.e. intermediaries assume full liability for other parties' content. The counterfactual is similar to the one used in the country studies. By comparing these two scenarios, we illustrate the full effect of moving from full intermediary liability to a regime with certain and limited liability.

The magnitude of the potential full effect

In the scenario where the IIL regime moves from being characterised by high legal risks and low compliance costs (as no liability protection is available) to no risk and low costs (as compliance can be obtained with limited effort), we find that start-up success rates can increase by around 70%, and the NPV of successful start-ups by 90%. Both effects can be observed by comparing the start-ups' cash flows in the high- and low-risk scenario.

Figure A4.1 shows the cumulative cash flows of start-ups in a high-risk environment, whereas Figure A4.2 depicts the cash flows of start-ups exposed to the same underlying dynamics, but which operate in an environment with full compliance and no residual risk.



Figure A4.1 Cumulative cash flow of start-ups in an environment with high risk

Note: The vertical axis is logarithmic and does not display the value 0.

Source: Oxera analysis.





Note: The vertical axis is logarithmic and does not display the value 0.

Source: Oxera analysis.

The start-up success rate is represented by the start-ups that have not run out of cash by the end of the five-year period. This share is considerably larger in the environment without risk. The cumulative cash flow (which is related to the NPV) reaches a higher level in the environment without risk for both the best-performing start-ups and for the average of successful start-ups.

Tel: +44 (0) 1865 253 000 Email: enquiries@oxera.com

www.oxera.com

Oxford Park Central 40/41 Park End Street Oxford OX1 1JD United Kingdom

Berlin Pariser Platz 4a 10117 Berlin Germany

Brussels Stephanie Square Centre Avenue Louise 65 Box 11 1050 Brussels Belgium

London 200 Aldersgate 14th Floor London EC1A 4HD United Kingdom

