

Open for Business?

the Economic Impact of
Internet Openness



Dalberg

MARCH 2014



Open for Business?

the Economic Impact of
Internet Openness



ACKNOWLEDGMENTS

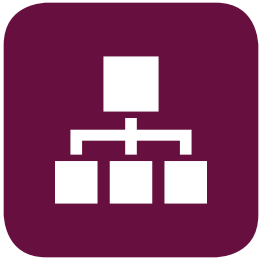
Dalberg Global Development Advisors would like to thank the individuals and organizations who shared their time, experiences and knowledge with us for this report.

This work would not have been possible without the generous contributions of the following individuals who participated in interviews, shared data and anecdotes for case studies, and provided general input and guidance: Dr. Susan Aaronson, Associate Research Professor, The George Washington University's Elliott School of International Affairs; Karin Alexander, World Wide Web Foundation; Nick Ashton-Hart, Geneva Representative, Computer and Communications Industry Association (CCIA); Vinton G. Cerf, Vice President and Chief Internet Evangelist, Google; Sally Costerton, Senior Advisor to the President – Global Stakeholder Engagement, Internet Corporation for Assigned Names and Numbers (ICANN); Anwar Dafa-Alla, Garden City College for Science and Technology; Ron Deibert, Professor of Political Science and Director, Citizen Lab, Munk School of Global Affairs, University of Toronto; Berhane Demissie, Managing Director – Ethiopia, Schulze Global Investments Limited; Soumitra Dutta, Dean, Johnson Graduate School of Management, Cornell University; Robert Faris, Research Director, Berkman Center for Internet and Society, Harvard University; Liz Gasster, Vice President, Business Roundtable; Mike Godwin, Senior Policy Adviser, Global Internet Policy Project, Internews; Dr. Gordon M. Goldstein, Managing Director and Head of External Affairs, Silver Lake; Luukas Ilves, Head of International Relations, Estonian Information System Authority; Sedat Kapanoğlu, Founder, Ekşi Sözlük; Michael Kende, Chief Economist, Internet Society; Kaiser Kuo, Director for International Communications, Baidu; Tomas Lamanauskas, Head, Corporate Strategy Division, International Telecommunications Union (ITU); Emma Llanso and Andrew McDiarmid, Center for Democracy and Technology; Eric Loeb and Jeff Brueggeman, Vice President, International External Affairs and Vice President, Public Policy (respectively), AT&T; Dr. Michele L. Malvesti, Senior Fellow, Jackson Institute for Global Affairs, and the students of Senior Capstone Seminar GLOB 499-02, Yale University; Dr. Bitange Ndemo, Former Permanent Secretary, Kenyan Ministry of Information and Communications; Dr. Alejandro Pisanty, Director of Academic Computing Services, National Autonomous University of Mexico; Carolina Rossini, Project Director, Latin America Resource Center, New America Foundation; Dr. Thomas Schildhauer, Director, Humboldt Institute for Internet and Society; Arthit Suriyawongkul, Thai Netizen Network; Vatsun Thirapatarapong and Sandy Walsh, Managing Director for Thailand and IndoChina and Regional Director for the Social Innovation Group in Asia Pacific (respectively), Cisco Systems, Inc.; Teri Jenkins Treille and Charu Adesnik, Corporate Social Responsibility and Deputy Director, Cisco Foundation (respectively), Cisco Systems, Inc.; and Algy Williams, CEO, Every1Mobile.

We are also very grateful to Simon Schropp and Andreas Lendle of Sidley Austin LLP for their work in testing the relationship between eBay transactions and openness, and to eBay Inc. for authorizing the use of this analysis. Thanks also to Sam Petulla for his contribution to the research on Myanmar.

Finally, we would like to thank Google for sponsoring this report, as well as the Google staff who contributed their expertise and insights, especially Ross LaJeunesse, Betsy Masiello, and Patrick Ryan.

This study was authored by Patricia E. Pina (patricia.pina@dalberg.com), Jeff Kaiser (jeff.kaiser@dalberg.com), Karen Mok (karen.mok@dalberg.com), Joe Dougherty (joe.dougherty@dalberg.com), and Michael Tsan of Dalberg Global Development Advisors, in collaboration with Corporate Visions who did the design and layout of this report. We sincerely thank all of our colleagues at Dalberg Global Development Advisors and Dalberg Research who contributed to this study in countless ways.



Contents

Foreword	1
Executive Summary	2
1. Context and Approach	9
2. Attributes of an Open Internet	13
3. Understanding Restrictions on Internet Openness	21
4. How Internet Openness Benefits the Economy	27
4.1. Impact on the ICT Sector	33
4.2. Impact on E-Commerce	40
4.3. Impact on Investment	42
4.4. Impact on Innovation	44
4.5. Social Gains that Enable Long-Term Economic Growth	45
5. Implications and Opportunities for Action	49
Additional Resources	53



James Mwangi
*Global Managing Partner
Dalberg Global
Development Advisors*

Foreword

The Internet has profoundly changed our world.

The Internet allows us to instantly answer questions that were previously unanswerable and interact with people whom we would never otherwise have met. It allows us to keep in touch with loved ones half a world away, re-connect with old friends, and even find a spouse. It has changed how we respond to crises, read the news, advocate for change, communicate with our governments, and express our personal thoughts. It has changed the way we do business, providing a new platform for the trade of goods and making possible the trade of services across continents. It has streamlined business operations and supply chains. And it has changed the way we consume, improving access to information, creating online markets where physical markets did not reach, and increasing competition and lowering prices.

But for these to be truly universal effects, every citizen on earth must be online. We are still far from that point, but we've come a long way. In just the last five years, nearly 1.2 billion new people gained access to the Internet.¹ By 2017, about half of the world's projected population is expected to be connected.²

But it is not the Internet itself that brought about these changes. The Internet is merely a platform, an enabler. It is the services and applications that we have been able to build on top of the Internet—the way we utilize the underlying networks and connections—that have made possible fundamental changes to the human experience.

We take the capabilities of today's Internet for granted, as though it was inevitable it would evolve in this way. But in the early days of the Internet, few people knew how profoundly this technology could transform our lives. We've witnessed growth that would have been impossible to predict, growth that can only be understood in the context of one essential attribute of the system: the openness of the network. Since its emergence, the Internet has remained an open platform, allowing any of us to innovate, create new services and tools, share freely and widely, and access all of the products and services that others have made available.

Today, many developments threaten this openness. While we should continue to work to better understand these threats and predict and quantify their consequences—as this report does—we must also recognize that openness has been a fundamental driver of the growth and evolution of the Internet as we know it. Without openness, many of the services and tools we rely on in our daily lives would not be possible.

A handwritten signature in red ink, consisting of a series of loops and a long horizontal stroke extending to the right.

James Mwangi

1 "Key ICT indicators for developed and developing countries and the world (totals and penetration rates)," ITU statistics.

2 "The Zettabyte Era—Trends and Analysis," *Visual Networking Index*, Cisco, 29 May 2013, http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/VNI_Hyperconnectivity_WP.html



Executive Summary

Background

The Internet has enriched the lives of hundreds of millions of people. It has spurred innovation, raised productivity, and given people the power to connect with each other across barriers of distance and language. The Internet's contribution to global economic performance over the past two decades is almost immeasurable.

The idea of 'openness' is intrinsic to the Internet and how it creates value. The Internet was designed as an open platform across which innovators, entrepreneurs, and everyday people could freely exchange information and ideas—as well as products and services—without fear of repression or reprisal. While exact definitions of openness vary, virtually all experts and commentators agree that it is not just any Internet, but a free and open Internet, that drives the digital economy and its ability to create value.

Today, the openness of the Internet is under unprecedented attack. Freedom House's "Freedom on the Net 2013" report describes a decline in global Internet freedom for three consecutive years. The "2013 Web Index Report," published by the World Wide Web Foundation, notes that politically sensitive Web content is blocked to a moderate or severe extent in nearly one out of every three countries. Outright censorship is on the rise in many places, and government surveillance—such as the NSA's PRISM program in the United States—has called into question the security of personal information and has prompted some countries to consider limiting how much data can be shared across borders.

No one has yet explored the economic implications of Internet openness in detail. Advocates of an open Internet have argued that these trends threaten basic human rights and freedoms. But there have been no in-depth studies of the extent to which Internet openness enhances economic performance or, conversely, how censorship and other restrictions on openness can damage economic performance.

Objectives and scope of this report

This report represents a first attempt to understand the economic impact of Internet openness. In order to do so, it is first necessary to determine what is meant by "openness." We offer a working definition from a user's perspective: *Internet openness is the degree to which users in a given country are able to decide freely which platforms and services to use and what lawful content to access, create, or share.* The report outlines four core attributes of an open Internet—freedom, interoperability & equity, transparency, and security & privacy—as seen in the illustration below. We note that protecting these attributes requires an inclusive and decentralized governance model, and that access (i.e., the ability to go online easily and affordably) is a basic precondition for openness.

Our report draws on both quantitative analysis and primary qualitative research to explore the economic impact of Internet openness.

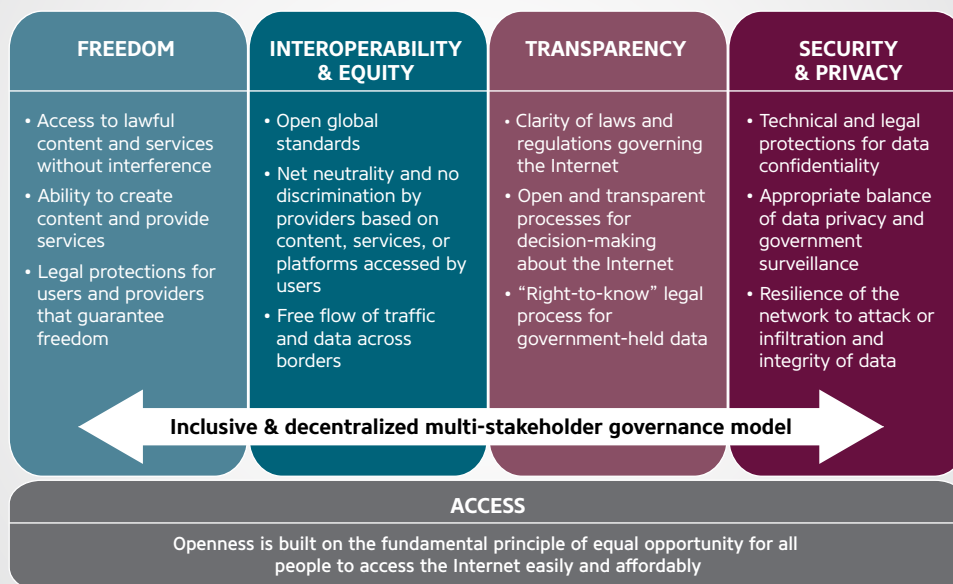
The report introduces no new indexes to measure Internet openness; nor does it rely exclusively on correlations to demonstrate the economic impact of an open Internet. We carried out a series of statistical tests to examine the relationship between openness (as measured by the “Freedom on the Net” index published by Freedom House)³ and economic indicators such as the Internet’s contribution to overall GDP, the maturity of the Internet economy (the e-Intensity Index), levels of e-commerce activity, and measures of innovation. We also interviewed some thirty experts and practitioners from around the world—including academics, government officials, ICT company executives, entrepreneurs, investors, and advocates—and reviewed more than sixty studies and reports from a wide range of sources in order to augment the statistical findings with first-hand accounts of the specific ways in which Internet openness can contribute to a dynamic and growing economy.

Key takeaways

1. Openness matters. It is not just any Internet, but a free and open Internet, that enables the innovation and entrepreneurship that fuel economic growth. Internet openness is intrinsic to the way the Internet stimulates economic growth. **Specifically, an open Internet:**

- **Makes it easier for people to go online**, which creates demand for Internet-enabled services; and **reduces risks and operating costs for Internet businesses**, which build the supply of such services and thus supports the growth of the Internet economy.
- **Attracts investment** from ICT companies and others, who prefer to invest in countries with an open Internet and are far less likely to invest in countries with significant restrictions.

An open Internet includes four core attributes: freedom, interoperability & equity, transparency, and security & privacy. These attributes are built on a foundation of Internet access and sustained by an inclusive and decentralized governance model.



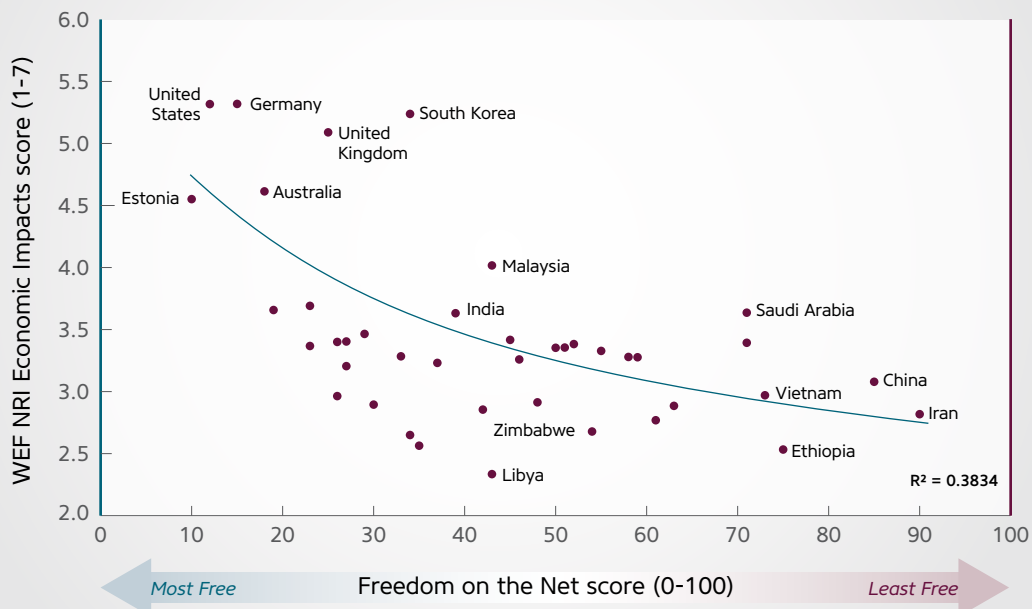
³ We explored the possibility of including other metrics such as the Web Index scores for Internet openness and freedom and the OpenNet Initiative’s filtering scores. However, the former is still being refined and is highly correlated with the Freedom on the Net index (thus resulting in similar findings). The latter we discarded because it only focuses on a very specific aspect of openness (i.e., technical filtering) and was not well-suited for an econometric exercise given the low level of variability within the sample (half of the countries had the same total filtering score).

- **Facilitates innovation** by allowing the sharing of ideas and information. Countries with an open Internet tend to be more innovative, and innovation is a key driver of economic growth.
- **Supports the use of e-commerce and e-banking** which, especially in developing countries, tend to represent new economic activity, rather than a replacement for in-person transactions. Moving transactions online can also enhance firm-level productivity and growth.
- **Helps build a solid foundation for sustained economic growth** and stability by enabling improvements in education, institutions, and the formation of social capital—all of which are associated with robust and resilient economic growth over the long term.

2. Internet openness requires vigilance, transparent governance, and proactive policies that promote universal and affordable access, reduce risks and operating costs for Internet businesses, attract investment, and promote ongoing innovation. Openness is not merely the absence of censorship, but rather an ideal state comprised of four components: 1) freedom, 2) interoperability & equity, 3) transparency, and 4) security & privacy. For the Internet to remain free and open, these four components must be actively monitored and maintained.

3. More and better information is needed to clarify the economic impact of Internet openness and disentangle the ways in which specific restrictions on openness harm the economy. More detailed information will enable more robust quantitative analyses which, in turn, will make the economic case for Internet openness clearer and even more compelling.

Countries with greater openness on the Internet—indicated by lower Freedom on the Net scores—also tend to score better on the “Economic impacts” pillar of the World Economic Forum’s Networked Readiness Index (NRI).⁴



⁴ The Economic impacts pillar of the World Economic Forum’s Networked Readiness Index (NRI) measures the effect of ICTs on competitiveness thanks to the generation of technological and non-technological innovations in the shape of patents, new products or processes, and organizational practices. It also measures the overall shift of an economy toward more knowledge-intensive activities.

Supporting findings

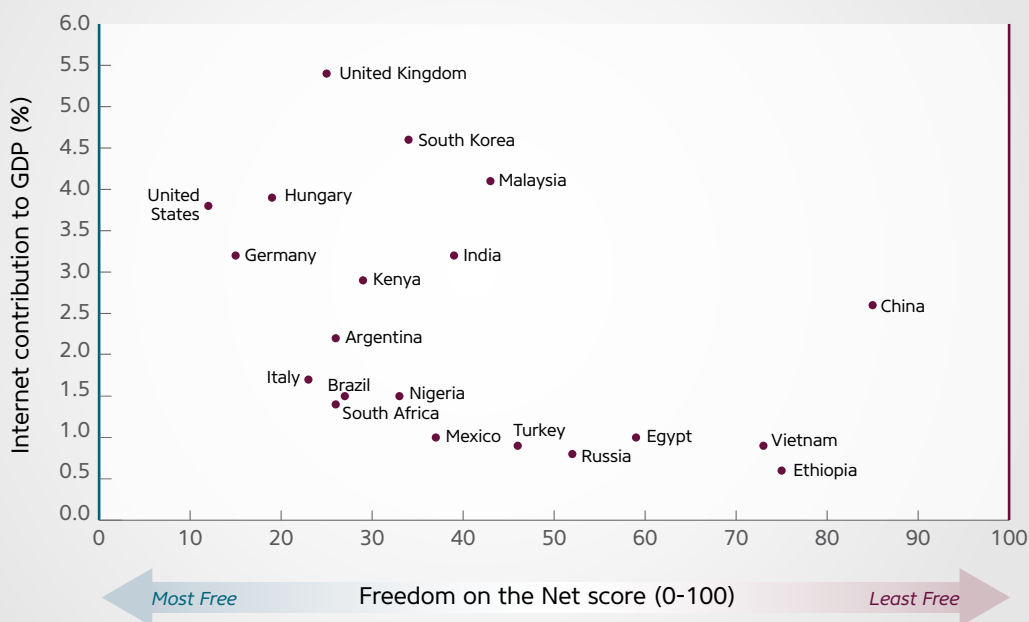
Countries with a more open Internet have benefited the most from the Internet economy. Specifically, we find a strong correlation between the degree of Internet openness in a given country (as measured by its Freedom on the Net score) and the degree to which the country has economically benefited from the Internet (as measured by the “Economic impacts” score of the World Economic Forum’s Networked Readiness Index). We find a similar relationship when the analysis relies on measures of the Internet’s contribution to overall GDP. The charts below illustrate this relationship.

These results are consistent when differences in GDP per capita are accounted for, which shows that countries with an open Internet are better off regardless of their stage of economic development. Countries categorized as “free” by the Freedom on the Net report are more likely to over-perform in terms of the maturity of their Internet economy compared to expectations based on their GDP per capita.⁵ Similarly, countries with more

restrictions (categorized as “partly free” or “not free”) are more likely to be worse off even when we correct for their GDP per capita.

Restrictions on openness increase the risks and costs of doing business for firms that rely on the Internet, and therefore inhibit investment and innovation, resulting in lower levels of economic activity. One Internet entrepreneur in Turkey estimates that the cost of complying with an arcane and restrictive set of rules regarding website content accounts for 15% of his total operating costs. His company has fought 250 lawsuits in the 14 years since it was founded. In Thailand, the 2007 Act on Computer Crime, which included broad provisions concerning intermediary liability, has led many service providers to conclude that the burdens of doing business outweigh the benefits. The owner of the user-moderated discussion forum 212cafe.com, for example, has opted to shut down his business. And while local-language social networks are emerging in nearby countries like Laos and Myanmar, these are not emerging in Thailand, despite its much larger online population and stronger infrastructure.

In more restrictive countries—indicated by higher Freedom on the Net scores—the Internet contributes less to the overall economy.



⁵ Measured by the e-intensity index score, which assesses maturity based on infrastructure deployment, stakeholder engagement, and online expenditures.

Internet openness clearly benefits the economy, but more data is needed to quantify its impact. Expert opinion, descriptive statistical analyses, and the real-life experience of investors and Internet entrepreneurs overwhelmingly support the assertion that an open Internet fosters economic growth, but data limitations prevent us from conclusively demonstrating a statistically significant causal relationship between Internet openness and economic performance. Systematic, quantitative measurement of Internet openness began only a few years ago (2009), making it difficult to isolate any non-immediate economic effects of improvement or deterioration in a country's level of openness. Moreover, numerical indicators of openness are only available for some sixty countries—a sample size that is too small to support a robust regression analysis.



As online services and Internet-enabled technologies become the global norm, countries that do not embrace Internet openness may find themselves left behind, no longer able to compete in the global marketplace.



Implications and opportunities for action

Today we sit at a critical juncture for the future of an open Internet. In the span of modern history, the Internet is an infant technology, its commercial application only about two decades old. Yet over this short period it has enabled unprecedented economic growth in many parts of the world. Our research suggests that openness is fundamental to the Internet's ability to enable economic growth.

Many countries face important decisions today about how to regulate the Internet, especially smaller and less developed countries that can ill afford to impede a vital engine of economic growth. The window of opportunity to ensure that the Internet has a transformative effect on economies, however, may be closing soon: As online services and Internet-enabled technologies become the global norm, countries that do not embrace Internet openness may find themselves left behind, no longer able to compete in the global marketplace.

Yet countries cannot simply adopt the Internet and expect to reap all its benefits without a proactive approach to openness.

Maximizing economic return requires thoughtful policymaking that promotes access, guarantees freedoms, and incentivizes entrepreneurship and innovation. Online censorship can have a chilling effect on economic as well as civic life, not just as a result of the limits it places on communication and commerce but also due to the burdensome costs that firms incur to ensure compliance. If governments can eliminate onerous regulatory barriers, establish a clear and fair regulatory framework, and promote policies that encourage competition and investment, they will be fostering an environment in which Internet-enabled businesses can thrive. Promoting and supporting the global interoperability of the Internet and a collaborative and transparent model of Internet governance will also create additional economic value.

Finally, there is an urgent need to capture new data and strengthen existing measures of openness. As noted above, we must expand our dataset on Internet openness and the Internet economy if we are to develop a robust understanding of the economic impact of openness. This is still a nascent field, but if we can improve the breadth and depth of the available data, we believe the case for an open Internet can be made clearer and even more compelling.





... nearly everyone agrees that openness is fundamental to how the Internet functions and how it creates value.





CHAPTER 1

Context and Approach

Background

While not everyone agrees on an exact definition of “openness,” nearly everyone agrees that it is fundamental to how the Internet functions and how it creates value. The Internet was intentionally designed as an open platform with an open architecture. It allows networks that are separately and individually designed—offering unique interfaces—to interact with each other seamlessly. This approach has enabled tremendous growth of the Internet in just a few decades: this fundamental openness has enabled users and providers to create an enormous diversity of content and services that can be integrated on a highly flexible platform.⁶

Today, we are witnessing unprecedented threats to Internet openness. Freedom House’s “Freedom on the Net 2013” report describes a decline in global Internet freedom for three consecutive years.⁷ The “2013 Web Index Report,” published by the World Wide Web Foundation, notes that politically sensitive Web content is blocked to a moderate or severe extent in nearly one in three countries.⁸ Internet censorship and government surveillance are on the rise, while laws and regulations are being proposed and passed that might challenge users’ freedom of choice. Countries like Brazil are considering so-called data localization laws, which would require that all data related to Brazilian companies and citizens be stored in Brazil. In January 2014, a federal court in Washington, DC, ruled against the current net-neutrality rule in the USA, which prohibited service providers like Verizon and Comcast from discriminating against certain types of data or Internet traffic. The effect of this decision on Internet openness remains to be seen, but many observers fear that it could affect the prices consumers pay to access entertainment, news, and other online content.

Advocates of an open Internet have been alarmed by these trends and claim that Internet censorship, surveillance, and other restrictions violate freedom of speech and other rights. To our knowledge, however, no one has yet explored the economic impact of these measures. Do restrictions on the Internet inhibit economic growth? If so, how?

6 “Brief History of the Internet,” Internet Society, <http://www.Internetsociety.org/Internet/what-Internet/history-Internet/brief-history-Internet>

7 “Freedom on the Net 2013,” Freedom House, 3 October 2013.

8 “2013 Web Index Report,” The World Wide Web Foundation, <http://thewebindex.org/>

Objectives

The objective of this study is to address the knowledge gap surrounding the ways in which—and the degree to which—the economic benefits a country reaps from the Internet are enhanced by the openness of the Internet within that country.

The Internet can be a strong driver of growth in a nation, but not all properties of the Internet create equal value. This study intends to differentiate the ways in which openness helps create economic value and spur growth. We investigate countries that have proactively promoted Internet openness as well as countries where restrictions on the Internet are still prevalent. Using concrete examples from countries around the globe, we aim to illustrate both the value that openness can create or enable as well as the specific economic repercussions that restrictions on the Internet can bring about.

Our approach

In order to achieve this objective, this study draws on both quantitative and qualitative research. The quantitative component includes statistical analyses that examine the relationship between Internet openness and economic variables such as Internet

contribution to GDP, maturity of the Internet economy, e-commerce activity, and innovation indexes. To measure Internet openness, the study primarily relies on the “Freedom on the Net” index published by Freedom House. While several other metrics are available—such as the Web Index scores for Internet openness and freedom or the OpenNet Initiative’s filtering scores—we chose not to use these metrics either because they are highly correlated with the Freedom on the Net index (thus resulting in similar findings) or because they focus on a much narrower concept of openness than the one we discuss in this report (for more detail on these indexes of Internet openness, see the box on “Measuring Internet Openness”).

The study also draws on a review of over sixty papers and reports as well as more than thirty interviews conducted with sector experts and practitioners from around the world—including academics, government officials, ICT companies, entrepreneurs, investors, and advocates.

This report represents an initial attempt to understand the mechanisms through which openness can affect a country’s economy. Yet we also hope it will serve to advance an international dialogue on Internet openness, the essential components of an open Internet, and the reasons why Internet openness matters for economic growth.



Measuring Internet Openness

Efforts to systematically measure Internet openness are nascent and have proven challenging. Given the great variety of laws and policies, no single index or measurement can currently account for all possible types of restrictions or quantify their severity—especially in the absence of a consensus on how to define openness.

In 2007, the OpenNet Initiative began empirically testing for filtering—that is, the blocking of specific web pages—and publishing country scores on a five-point scale according to the observed level of filtering.⁹ However, technical filtering data alone do not provide a complete picture of Internet openness; a wide range of policies and regulations that limit openness are excluded from this metric.

In 2009, Freedom House launched the Freedom on the Net index with 15 countries.¹⁰ This index measures the level of Internet and digital media freedom on a numerical scale from 0 (the most free) to 100 (the least free). Since then the number of countries measured has grown each year; in 2013, the index included assessments of sixty countries. Each country's score is calculated based on three sub-scores: 1) obstacles to access (e.g., economic barriers to access; legal or regulatory obstacles for Internet service providers), 2) limits on content (e.g., filtering and blocking; forced deletion of content), and 3) violations of user rights (e.g., extralegal intimidation or physical violence; state surveillance). The scoring system primarily relies on expert qualitative assessments and surveys.

More recently, in 2012 the World Wide Web Foundation launched the Web Index, a multi-dimensional measure of the Internet's contribution to development and human rights globally.¹¹ This index includes a measure for Internet freedom and openness that assesses the extent to which citizens enjoy rights to information, opinion, expression, safety, and privacy online. It assesses the level of blocking of content, the personal data protection framework, and the privacy of electronic communications protection framework. It also includes proxies such as freedom of the press, political rights, or civil liberties. This index, like the Freedom on the Net index, relies on qualitative assessments and surveys.

Each index examines Internet openness from a different angle. The oldest data, from the OpenNet Initiative, focuses on a very specific aspect of openness, leaving out critical components such as legal and regulatory frameworks. The newest indexes are based on more comprehensive definitions of Internet openness, but the data available is still limited to a small subset of countries and years. It is still too early, for example, to conduct analyses of historical trends and quantify the effect that changes in these trends might have had. In the case of the Web Index, the metric is new and is still in the process of being refined. The debate over what specific indicators should be included in a comprehensive measure of Internet openness continues, especially while a definition of openness as a concept remains contested.

9 OpenNet Initiative, <https://opennet.net/>

10 "Freedom on the Net," Freedom House, <http://www.freedomhouse.org/report-types/freedom-net>

11 "Web Index," World Wide Web Foundation, <http://thewebindex.org/>



CHAPTER 2

Attributes of an Open Internet

There is no uniform consensus among experts, businesses, or policymakers on how precisely to define openness. Many proposed attributes of an open Internet are similar, but few people agree on a comprehensive list. Yet a common language regarding openness is an important prerequisite for an informed and effective global conversation on the set of issues that surround it. In other words, what do we mean when we talk about “openness” on the Internet?

This report uses a definition of openness framed around the user experience: *An open Internet allows users to freely decide which platforms and services to use and what lawful content to access, create, or share.* While a positive user experience is fundamental to the growth and adoption of the Internet, the core attributes required to enable this experience go far beyond the user. Figure 1 below lays out the qualities underpinning this definition of openness. With this definition, we aim to offer one possible way of thinking about openness; however, we do not propose this as a conclusive definition, and we encourage continued debate and discussion on this issue.

We believe that in order for users to be able to exercise full freedom of choice online, an open Internet should feature the following four core attributes: 1) freedom, 2) interoperability & equity, 3) transparency, and 4) security & privacy. Underpinning these four attributes, Internet openness is facilitated and protected by a decentralized Internet governance model that includes all key stakeholders and provides checks and balances. Openness also rests on a foundation of Internet access; broad and affordable access is a precondition for openness.

The four attributes of openness

1. Freedom: Freedom online exists when the full spectrum of lawful content, services, and platforms is widely available to users in the absence of external control or suppression of choice. This requires an environment that enables all stakeholders to participate fairly and equally. Components of freedom include:

- *Access to lawful content and services without interference.* While different jurisdictions might ban content deemed to be harmful—pornography or hate speech, for example—it is important to ensure that such laws do not violate fundamental freedoms of expression or inhibit access to legitimate information;

- *Ability for individuals and organizations to create and share content and provide services.* In addition to the absence of restrictions that limit access to content and services, the Internet must also be open to continued rapid expansion through the creation of new content and services, a property critical to fostering innovation and entrepreneurship;
- *Legal protections for users and service providers.* Laws that clearly define and protect the rights and responsibilities of users and service providers create an open environment conducive to the uninhibited use of the Internet by all, and equal opportunity for all businesses to participate in the provision of services.

2. Interoperability & equity: The remarkable growth of the Internet in the last two decades can be largely explained by the principle of interoperability. The ability of users, content hosts, and service providers to exchange information via a common set of formats with no barriers to access has directly spurred the massive growth of networks. Interoperability and equity online are guaranteed by:

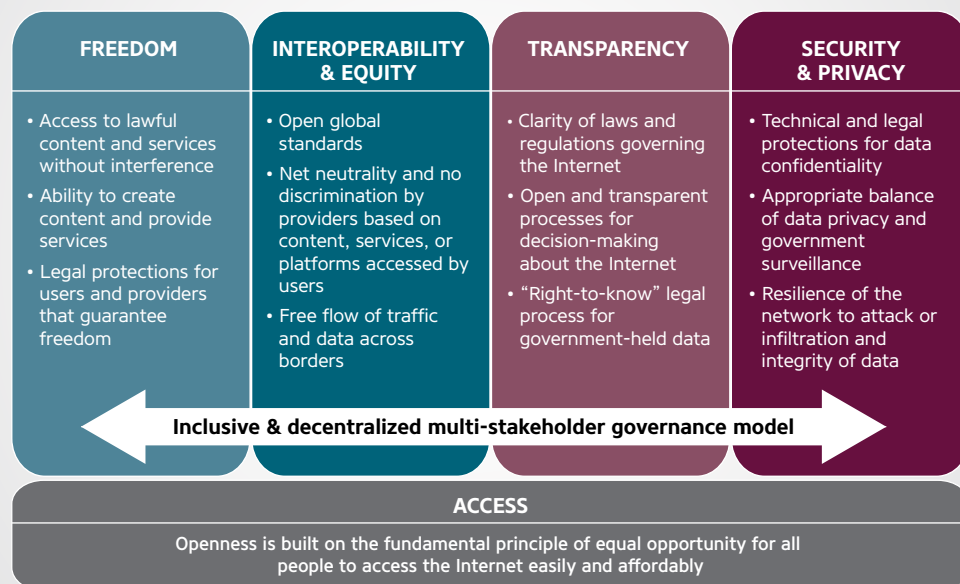
- *Open global standards.* Standards made available to the general public without licensing or royalty fees

and developed and maintained via a collaborative and consensus-driven process ensure that all services and interfaces are able to communicate and share data using a common set of exchange formats;

- *Net neutrality and non-discrimination.* The principle that service providers enable access to all content and applications regardless of the source, and without favoring or blocking particular products, services, or types of content is critical to providing full decision-making authority and freedom of choice to users. The principle of non-discrimination by providers based on content, services, or platforms also prevents market distortion and promotes competitiveness, and thus innovation;
- *Free flow of traffic and data across borders.* A fundamental component of the Internet since its inception has been the ability to transcend national borders, creating economies of scale and enabling a new cadre of global services and communications platforms to emerge that have made the world more connected than it has been at any other point in history.

FIGURE 1

An open Internet includes four core attributes: freedom, interoperability & equity, transparency, and security & privacy. These attributes are built on a foundation of Internet access and sustained by an inclusive and decentralized governance model.



3. Transparency: Transparency is critical for ensuring an open future for the Internet. Transparency, as it relates to an open Internet, includes:

- *Clarity of laws and regulations governing the Internet.* Clearly defining and making publicly available all laws and regulations that govern the Internet at a national and global level can help reduce the perceived degrees of uncertainty and risk of operating in a country, resulting in greater investment and entrepreneurship;
- *Transparent decision-making.* Individual nations and global governance bodies can contribute to improving the quality of Internet-related decisions and create trust in these decisions through transparency; a transparent process tends to facilitate the implementation of decisions once they have been made;
- *Access to government-held data.* The Internet can also help make societies more open by promoting public access to information and data held by the government. While technical or financial difficulties might prevent some governments from making all of their information available online quickly or easily, all countries should strive for transparency and openness regarding government data.

4. Security & privacy: Security and privacy online create a safe and open environment for users. A sense of safety enables users to take advantage of the full potential of the Internet without fear that can lead to self-censorship or reluctance to engage in online transactions. Security and privacy are ensured by:

- *Technical and legal protections for data confidentiality.* Confidentiality makes people more likely to use many Internet services by creating a safe space for creativity and experimentation. Users also share the responsibility for maintaining their own online safety, which requires an understanding of the privacy policies of the services they choose to use as well as vigilance regarding how and to whom they disclose information;
- *Appropriate balance of data privacy and government surveillance.* Limitations on government surveillance contribute to the creation of a safe, open space for creativity and experimentation. While in certain instances limited surveillance programs may be justified for reasons of national security, it is important for governments to establish transparent legal parameters for such activities;

- *Data integrity and resilience of the network to attack or infiltration.* Adequate and up-to-date technical measures can promote network safety, shield users from cyber threats, and protect the integrity of data, which means that data is accurate, consistent, and only able to be altered or accessed by users with permission to do so.

These four pillars offer a framework for thinking about Internet openness. Because openness is such a fundamental concept, we have chosen to define it broadly with a comprehensive list of attributes. Given the breadth of this definition, no country in the world has a perfectly open Internet. All countries have room for improvement in respecting fundamental freedoms, guaranteeing the interoperability and equity of the system, enhancing the transparency of policies and decision-making processes, or protecting users' security and privacy.

The debate on the relative importance of these attributes remains unsettled, as does the question of how best to strike a balance between what may appear to be opposing principles. Can privacy and transparency co-exist as equals? When is surveillance justified? What content should be "lawful?" We hope that the framework for an open Internet we present here can help inform and advance the dialogue on these issues.

As noted earlier, Internet openness is facilitated and protected by a decentralized Internet governance model and rests on a foundation of Internet access. These concepts are explained and illustrated below.

Internet governance

If the four attributes outlined above are essential to openness, our research suggests that a collaborative and inclusive governance model for the Internet has the best chance of ensuring their promotion and sustainability. The governance model should ensure that different aspects of oversight sit with different types of organizations (e.g., civil society, technical bodies, governments, and the private sector); that all relevant stakeholders have the opportunity to express their opinions and perspectives; that decisions are made in coordination across these groups; and that individual organizations, governments, and multilateral institutions have limited control. Such a model can help ensure the promotion of our four primary attributes of openness. Today there is an ongoing and hotly contested debate on the future of Internet governance (see the box on "The Future of Internet Governance").



The Future of Internet Governance

The 2012 World Conference on International Telecommunications (WCIT) led to the most vigorous and heated debate yet on the future of Internet governance. The conference was intended to revise the International Telecommunication Regulations (ITRs)—a series of outdated regulations passed in 1988 and unchanged since. Fifty-five member states of the International Telecommunication Union (ITU)—the UN special agency for the ICT sector—ultimately refused to sign the new treaty, leaving the governance model unchanged ... for now.

According to Dr. Gordon M. Goldstein, managing director for the technology investing firm Silver Lake and a member of the US delegation to the 2012 WCIT, the collapse of the meeting “marks just the first battle in what will be an enduring global contest to define the governance and control of the Internet in the 21st century.” This year will be critical in defining the future of the Internet. A series of meetings and discussions are already scheduled to take place in 2014, including the ITU Plenipotentiary Conference,¹² the Internet Governance Forum,¹³ The Global Multistakeholder Meeting on the Future of Internet,¹⁴ the World Summit on the Information Society (WSIS),¹⁵ and RightsCon—a non-governmental forum hosted by the international human rights and digital freedom non-profit Access.¹⁶

A key question with important implications for the processes and outcomes of these events is: Who should be involved in each decision regarding the Internet? One approach to determining

participation in decision-making is a layered-governance model, analogous to the layered structure of the Internet (e.g., infrastructure layer, logical layer, content layer). Breaking it down this way, different types of organizations would be involved in different decisions based on their mandates (i.e., the layer at which they function). For example, while the ITU can be an important forum for debate and decision-making on issues related to Internet infrastructure, other forums like the World Intellectual Property Organization and the Internet Governance Forum may be more appropriate settings in which to discuss and regulate the content layer.

While the current multistakeholder governance model is certainly not perfect, no clear alternative seems to exist. Many experts believe that the current system works well enough that it should be left alone, at least for now. A recent study by ICANN’s Strategy Panel¹⁷ on ICANN’s Role in the Internet Governance Ecosystem reviewed the governance ecosystem—including existing complaints and input from the global community—and concluded, “the multistakeholder model is by far preferable and should be elaborated and reinforced.”¹⁸ According to Ismail Serageldin, a member of this panel, “it behooves us to keep this situation under constant review, but we should not allow the technical functions of the Internet to become politicized, nor should we allow them to become bureaucratized in pursuit of some ‘politically correct’ demand for greater political representation of governments.”¹⁹

12 “About PP-14,” ITU, <http://www.itu.int/en/plenipotentiary/2014/Pages/about.aspx>

13 “About the Internet Governance Forum,” IGF, <http://www.intgovforum.org/cms/about/igf>

14 “Global Multistakeholder Meeting on Internet Governance,” NETmundial, 10 January 2014, <http://netmundial.br/blog/2014/01/10/the-global-multistakeholder-meeting-on-the-future-of-internet-governance-sao-paulo-update/>

15 “Internet Governance Processes: Visualizing the playing field,” Access, Global Partners Digital, and the Center for Technology and Society of the Getulio Vargas Foundation.

16 “About RightsCon,” <https://www.rightscon.org/about.php>

17 ICANN, the Internet Corporation for Assigned Names and Numbers, is a private nonprofit organization that oversees the Internet’s naming and registry systems. ICANN coordinates Internet Protocol (IP) addresses and manages the top-level domain name space, among other things.

18 Cerf, Vinton G. (Chair) et al., “ICANN’s Role in the Internet Governance Ecosystem,” Report of the ICANN Strategy Panel, February 20, 2014, <https://www.icann.org/en/about/planning/strategic-engagement/governance-ecosystem>

19 Serageldin, Ismail, “Don’t Mess With (Im)perfection,” February 2014, https://docs.google.com/document/d/1kreg_ZnXlYpl8qG3X3UThUcdynSBnu42pmiYr2YdfBE/edit

Internet access

Openness is built on the fundamental principle of equal opportunity for all people to access the Internet easily and affordably. If people cannot get online in the first place, the core attributes of an open Internet are irrelevant. Where the Internet is not widely available or affordable, governments can play an important role in implementing policies that encourage growth of access. Policies can offer incentives for all actors in the market by promoting investment in the sector, bringing down costs of services, and supporting the expansion of necessary infrastructure.

A proactive policymaking approach is critical to promoting access, particularly for expansion of infrastructure. Broadly, there are five types of policies that facilitate the prompt and efficient deployment of infrastructure: 1) promoting shared infrastructure among providers; 2) enacting policies to promote effective licensing and use of the spectrum available for mobile and portable Internet access; 3) favoring the development of an Internet exchange point market;²⁰ 4) creating an ecosystem that stimulates demand for broadband through policies that offer incentives for entrepreneurs, governments, and the public at large to use broadband; and 5) sharing information and discussing best practices among parties with common interests within geographical regions.²¹ Together, these policies form a framework for broadband deployment that aims to bring “the next five billion” users online.²²

One approach to policymaking that has proven successful in a number of contexts is the deployment of a national broadband strategy. A recent study by the ITU and Cisco demonstrates that countries with clearly-defined national broadband strategies or plans have broadband penetration rates 8.7% greater on average

than countries that take a more relaxed approach to Internet access. Even controlling for factors like income and urbanization, the study still shows average penetration rates 2.5% higher in countries with broadband plans.²³ The effect is even more robust for mobile broadband penetration: the study finds the adoption of a national broadband plan results in an increase of mobile broadband penetration of 7.4%, holding all other variables constant. The history of broadband in Kenya is an example of a policymaking approach that directly enabled expansion of access, as outlined below in the box on ICT Policymaking in Kenya.

Though fixed broadband remains important to increasing Internet access, the enormous growth in smartphones suggests that mobile devices may quickly become the chief access points for new users. According to ITU data, the global mobile broadband penetration rate grew to 29.5% in 2013, up from 22.1% in 2012.²⁴ A report by the Swedish technology and telecommunications company Ericsson notes that around the world some 4.5 billion people have access to a mobile phone, over 2 billion of which have access to mobile broadband. Ericsson estimates that smartphone traffic will grow by a factor of ten by 2019.²⁵

Finally, Internet openness is characterized by more than just the absence of restrictions. Openness is a proactive state requiring thoughtful policymaking that promotes access, guarantees freedoms, and incentivizes creativity and innovation. While many countries are working hard to create an open Internet, few places have been as successful as Estonia in this respect. The box below on Estonia’s Openness Revolution highlights some of the ways in which Estonia has fostered an open Internet and reaped the benefits.

20 An Internet exchange point (IXP) is a physical infrastructure through which Internet service providers (ISPs) exchange Internet traffic between their networks. The primary role of an IXP is to keep local Internet traffic within local infrastructure and to reduce costs associated with traffic exchange between ISPs.

21 Reed, David P., Jennifer Haroon, and Patrick S. Ryan, “Technologies and Policies to Connect the Next 5 Billion,” (January 13, 2014). Berkeley Technology Law Journal, Vol. 29, 2014, Forthcoming

22 Ibid.

23 “Planning for progress: Why national broadband plans matter,” ITU and CISCO, July 2013 <http://www.broadbandcommission.org/documents/reportNBP2013.pdf>

24 “Global mobile statistics 2013 Part B: Mobile Web; mobile broadband penetration; 3G/4G subscribers and networks,” mobiThinking, February 2013, <http://mobithinking.com/mobile-marketing-tools/latest-mobile-stats/b#mobilebroadband>

25 “Ericsson Mobility Report: On the Pulse of the Networked Society,” Ericsson, November 2013.



ICT Policymaking in Kenya: Towards Affordable and Universal Access

Since the arrival of the Internet in the 1990s, Kenya has consistently made decisions and crafted policies for the ICT sector that have improved access and affordability. Today, thanks largely to a liberal market approach complemented by proactive and effective policymaking, Kenya is a regional hub for tech and Internet start-ups and has attracted substantial investment from employers like IBM and Microsoft. Although only roughly 32% of Kenya's population has access to the Internet, access has been growing at a rate of about 30% per year (over the last five years).²⁶

“ In Kenya, we saw the number of Internet users more than double in a single year after we liberalized markets. ”

—Dr. Bitange Ndemo,
former permanent secretary
in the Kenyan Ministry of
Information and Communications

Kenya first liberalized its telecommunications market in 1999, making it easier for private companies to enter the sector. Telkom Kenya's monopoly to operate the Internet backbone—the network infrastructure on top of which all online traffic travels—ended in 2004, at which point the Communications Commission of Kenya (CCK) opened the door to competition by licensing two additional operators. Yet the most important advances came later, starting in 2008 when the government introduced a technology-neutral licensing regime (i.e., the licensee retained the ability to decide what technology and equipment to use). This new licensing structure further simplified the market and removed most remaining obstacles to business entry and competition. Most importantly, it made it

easier and cheaper for Kenyans to access the Internet, for a number of reasons. First, the new licensing regime enabled infrastructure sharing among service providers and operators, which reduced costs. Second, it improved connectivity in less-developed rural regions. Finally, it resulted in increased price competition for Internet services.²⁷

Market liberalization plays a critical role in affordability and access by driving down prices and forcing service providers to compete on quality and availability. According to Dr. Bitange Ndemo, formerly the permanent secretary of the Ministry of Information and Communications, “In Kenya, we saw the number of Internet users more than double in a single year after we liberalized markets.”²⁸

In 2009 and 2010, four international submarine fiber optic cables reached Kenya. The arrival of these cables resulted in a substantial increase in available bandwidth and drastically lowered service costs to operators. Tariffs on these services decreased by 90%, savings that the CCK ensured were passed along to consumers.²⁹ The Kenyan government launched and spearheaded one of these cable projects, The East African Marine System (TEAMS), in reaction to the slow progress of the other cable projects. TEAMS was structured as a public-private partnership, ensuring that the government kept some control over the project and retained an option to intervene if it determined that service prices were too high, but leaving operations largely to the private sector.³⁰ The government's proactive approach ensured both that bandwidth availability increased exponentially and that the cable initiatives led directly to expanded access and lower prices for citizens.³¹

While promoting “last mile” access remains challenging, Dr. Ndemo believes that Kenya's proactive and thoughtful approach can ultimately result in Internet penetration of 100%. “The answer is persistence,” he says, “You don't give up.”

²⁶ Percentage of Individuals using the Internet, ITU.

²⁷ Souter, David and Monica Kerretts-Makau, “Internet Governance in Kenya – An Assessment,” Internet Society, September 2012: “The Affordability Report 2013,” Alliance for Affordable Internet.

²⁸ “What our supporters say,” Alliance for Affordable Internet, <http://a4ai.org/press-centre/what-our-supporters-say/>

²⁹ “The Affordability Report 2013,” Alliance for Affordable Internet.

³⁰ Msimang, Mandla, “Broadband in Kenya: Build it and They Will Come,” Information for Development Program (*infoDev*), 2011.

³¹ “Unlimited Bandwidth? Governance & submarine fibre-optic cable initiatives in Kenya,” Africa Centre for Open Governance, November 2010.



Estonia's Openness Revolution

Estonia is home to one of the most dynamic and open Internet sectors on the planet. The country received the highest score in Freedom House's "Freedom on the Net" report in 2011 and 2012, and ranked second in 2013. The government has fast-tracked the growth of an Internet society with a robust offering of digital services and e-government initiatives—in 2013, 95% of all tax declarations were filed electronically, a process that takes five minutes on average. The country utilizes electronic health records, an online land registry, entirely digital business registration, a secure digital signature system, online voting, and social welfare e-services, to name just a few. Estonia's Internet revolution has been most successful because of a digital foundation built on the principles of openness, including decentralization, interconnectivity, and an open platform.³²

At the core of Estonia's Internet sector is a decentralized infrastructure system that was designed to be flexible enough to incorporate future adaptations and link together a large and growing variety of services and databases from both the public and private sectors. This universal backbone, called X-Road, connects all components of the system and allows interfaces and databases to interact seamlessly. Businesses, government agencies, and users can choose the products and services that meet their needs, and control and ownership of all data remain with each user.³³

Another critical component of Estonia's Internet infrastructure is the e-Identity system. Citizens can access all of Estonia's online services by using their national ID cards, which give Estonians a secure way to verify identity for everything from online voting and digital signatures to e-prescriptions and bank account access.³⁴ Most

services utilize a highly secure two-step verification process that requires a physical ID card along with a personal key code, or the use of other authorization "tokens" that may be issued independently by public and private organizations.³⁵ Although Estonia is certainly not the first country to adopt an online public-key infrastructure (PKI) system like this, adoption rates have been far higher than in most places, likely due to a population that is already familiar and comfortable with online platforms and services.

At a recent event in Washington, DC, Estonian President Toomas Ilves described an Estonian law that states that "the government may only ask you for any bit of data once. Once you've given the government your address, for example, you never have to fill out your address again."³⁶ This law exemplifies the interconnectedness and interoperability of the Estonian system, and the efficiency and productivity gains it enables.

Estonia's Internet infrastructure—built on a foundation of interoperability, security & privacy, and decentralization—has enabled more than 800 organizations, public registers, and databases to interact seamlessly, offering an unprecedented level of efficiency and transparency in government. Moreover, these systems have clear economic benefit. According to President Ilves, "There are many, many investments coming into Estonia because of the ease of doing things here. You can set up a company in 15 minutes online."³⁷ Skype and Kazaa (an early file-sharing network) were developed in Estonia; the country leads the world in start-ups per person.³⁸ Today, the successes of e-Estonia—as it has come to be known—are being replicated across Europe and around the globe, exemplifying all the benefits and rewards of openness.

32 "Laying the Digital Foundation," e-Estonia – The Digital Society, <http://e-estonia.com/e-estonia/digital-society/infrastructure>

33 "X-Road," e-Estonia – The Digital Society, <http://e-estonia.com/components/x-road>

34 "Laying the Digital Foundation," e-Estonia – The Digital Society, <http://e-estonia.com/e-estonia/digital-society/infrastructure>

35 "The Estonian Example: Q&A with Toomas Hendrik Ilves," *The Ripon Forum*, Volume 47, No. 1, Winter 2013, <http://www.riponsociety.org/forum131thi.htm>

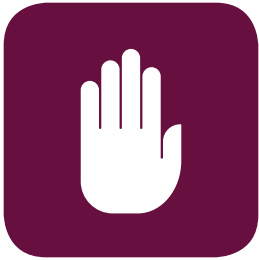
36 Remarks by President Toomas Hendrik Ilves to the NDI Democracy Dinner, 10 December 2013, <http://www.youtube.com/watch?v=NA5WpyTkbZg>

37 "The Estonian Example: Q&A with Toomas Hendrik Ilves," *The Ripon Forum*, Volume 47, No. 1, Winter 2013, <http://www.riponsociety.org/forum131thi.htm>

38 "Estonia's technology cluster, not just Skype," *The Economist*, July 11, 2013, <http://www.economist.com/blogs/schumpeter/2013/07/estonia-s-technology-cluster>



... in many parts of the world, governments have been the leading culprits in implementing restrictions that fundamentally limit the utility of the Internet.



CHAPTER 3

Understanding Restrictions on Internet Openness

Restrictions that inhibit the openness of the Internet can originate anywhere, but national governments are uniquely positioned to promote openness and proactively create an environment that enables countries to extract as much economic value as possible from the Internet.

Unfortunately, in many parts of the world, governments have been the leading culprits in implementing restrictions that fundamentally limit the utility of the Internet.

Direct restrictions

Governments use three direct mechanisms to restrict the ability of users to freely choose which services and content to access.

Filtering, blocking, and manipulation: Many governments restrict access to certain types of content and block particular online tools and services. All of these restrictions directly limit a user's ability to freely access, create, and share content on the Internet. Examples of these types of restrictions are: restricted access to specific web pages, online tools, and search keywords; IP address blocking; and distributed denial-of-service (DDoS) attacks.³⁹ In addition to limiting access to content and services, some governments also hire personnel to post specific content online in an attempt to manipulate existing content and Internet users.

Regulatory barriers: Some governments enact laws and policies that inadvertently or intentionally limit the demand for and supply of Internet services. These barriers include over-regulation of the ICT sector, local ownership requirements or limits on foreign investment, red tape that suppresses market competition, and data localization and traffic routing regulations. Restrictions in this category can create an unfriendly business environment and result in infrastructural and economic barriers for citizens and businesses that want to connect and use the Internet.

Shutdown and throttling: The full or partial shutdown of networks and "throttling" of connection speeds make it difficult for users to access the Internet. These actions are often motivated by a desire to limit freedom of speech on the net and usually target a specific geography and time period that corresponds to a political protest or otherwise sensitive event.

³⁹ A DDoS attack is an attempt to make a network or system unavailable to its users. Methods for these attacks vary, but they generally target the host of a service to interrupt or suspend it, often by overwhelming a system with false queries or traffic.

Indirect restrictions

In addition to these direct restrictions, governments can take actions that make certain online activities costly for users and providers as a way to indirectly control behavior and force self-censorship. Self-censorship can come in many forms. In some places, users may limit politically sensitive content; in other settings, users may be hesitant to leave an online “footprint” at all.

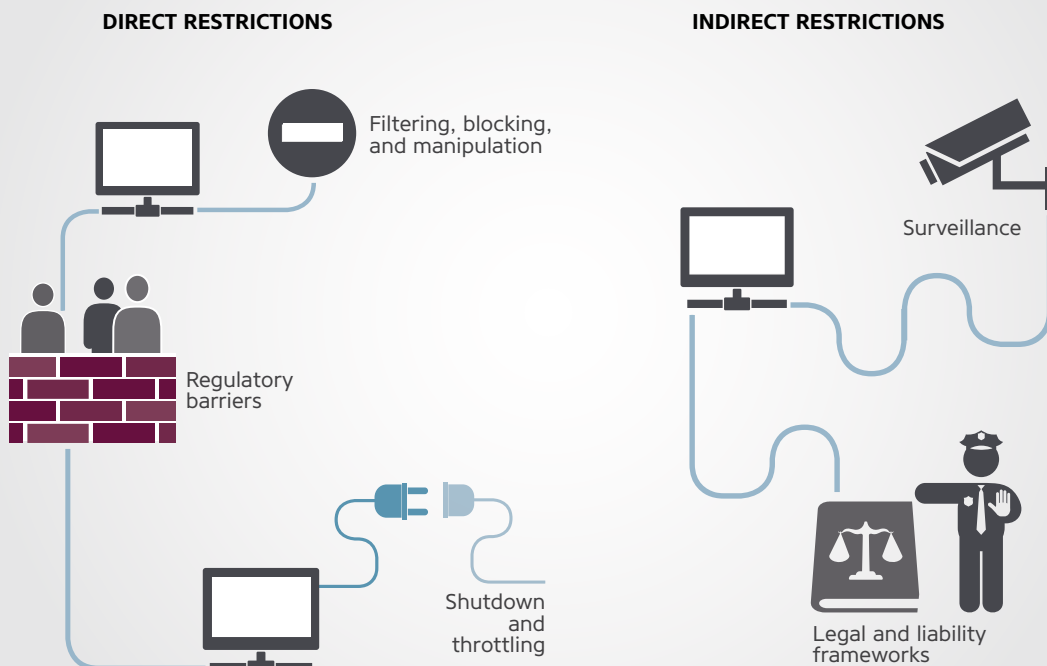
Surveillance: Any government monitoring of online behavior can encourage users to self-censor. Government surveillance is often motivated by national security concerns. Therefore, protection of users’ privacy needs to be balanced with the protection of national security interests. The chilling effect that surveillance can have is exacerbated when the parameters of surveillance—who is targeted, what is collected, and how information is used—are poorly defined, not transparent, or overly broad in scope.

Legal and liability frameworks: Governments can enact laws to control online behavior, imposing legal penalties for certain activities that would be considered innocuous in an open environment. Often these laws form one component of government censorship measures. Examples of these restrictions include: intermediary liability laws that hold service providers liable for users’ content; laws and rules restricting free speech and/or banning certain types of content; and detentions, prosecutions, and sanctions for online activity.

Chapter 4 provides examples—drawn from the experience of Internet entrepreneurs and international investors—of how direct and indirect restrictions on Internet openness reduce access to the Internet and inhibit investment and growth among Internet-enabled businesses, thus hampering economic growth.

FIGURE 2

Governments take different actions to directly or indirectly restrict the ability of users to access the Internet freely and securely.





Do Access and Content Restrictions Always Go Hand in Hand?

It seems intuitive that governments aiming to restrict the Internet would use any and all means to control what Internet users can access, publish, or share. However, data suggests that restrictive governments take different attitudes with regard to access and censorship of content. Some governments focus on content restrictions while others not only impose limits on content, but also enact policies that inhibit the expansion of access to the Internet.

Figure 3 shows the Freedom on the Net sub-scores for limits on content and obstacles to access for different countries. While there is a correlation between the two sub-indexes, different patterns emerge.

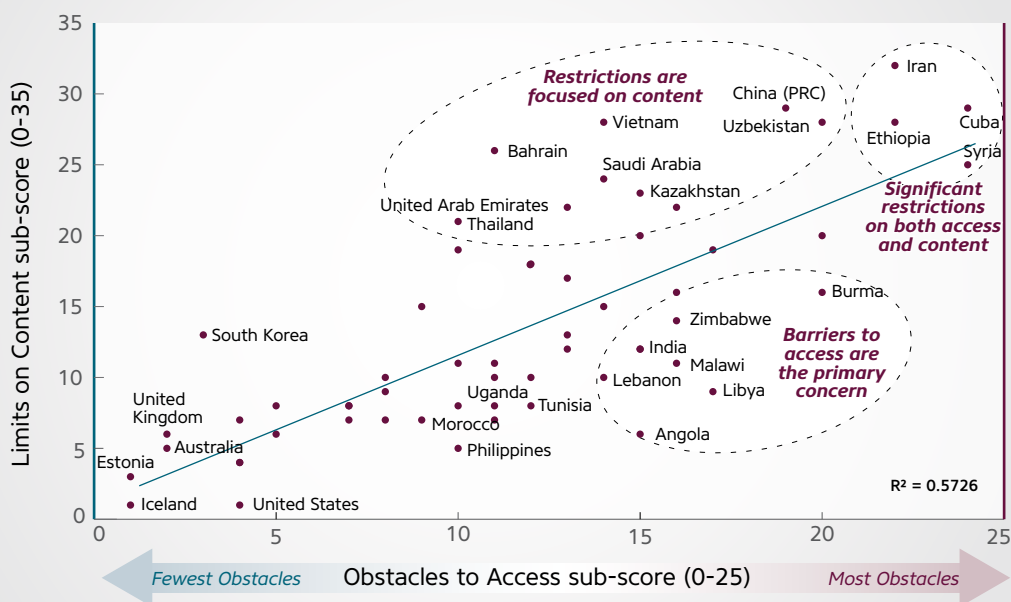
Countries such as Bahrain and United Arab Emirates exercise stringent controls on Internet content. According to the OpenNet Initiative, Bahrain and United Arab Emirates filter political, social, and conflict-related information and restrict the use of Internet

tools such as email, translators, or voice over IP (VOIP) services. However, barriers to access are less of a concern; according to the 2013 ITU data, 85% of the population of both countries uses the Internet.

In contrast, countries such as Iran, Ethiopia, Cuba, and Syria not only impose stringent limits on content but also maintain extensive barriers to access. For example, Ethiopia ranks 72nd out of 80 countries on Internet openness and freedom (according to the Web Index), and ranks 57th out of 60 countries on barriers to access (according to the Freedom on the Net), with a mere 1.5% of the population using the Internet (based on 2013 ITU data). The low ranking on barriers to access is not just due to restrictions on ICT connectivity, but also due to the absence of effective policies to address infrastructural limitations and the prohibitive cost of connectivity.

FIGURE 3

While some countries restrict both access to Internet and content, others are primarily focused on imposing limits on content.



Source: Freedom House, "Freedom on the Net 2013"; Dalberg analysis.

It is worth repeating that while content censorship can have significant economic effects (as discussed in chapter 4 of this report), affordable and widespread access is a prerequisite for an open Internet. Unfortunately, these conditions are still missing in many countries; governments that prioritize efforts to improve access and affordability will be making important steps towards positioning themselves to take full advantage of the benefits that the Internet economy offers.

How restrictions affect economic performance

Through discussions with experts and a review of available literature, we identified five pathways through which direct and indirect restrictions on Internet openness can affect economic growth:

- 1. Restrictions on Internet openness reduce investors' confidence in the regulatory environment**, especially when they are ambiguous, vague, or not transparent. Restrictions create uncertainty and increase perceived risk, which makes a country less attractive to investors.
- 2. Restrictions decrease the availability of information.** When access to sites like YouTube, Wikipedia, or media outlets is blocked, even temporarily, users are denied access to

information that can be used to generate innovation, enhance productivity, and otherwise spur economic growth.

- 3. Restrictions make it harder for people and organizations to connect with each other.** Online collaboration both across and within national borders leads to innovation—new ideas for products, services and improved ways of delivering them—that in turn contribute to economic growth.
- 4. Finally, restrictions on Internet openness can create distrust and fear** over adopting Internet-based solutions and experimenting on the Internet. When people fear that information they share over the Internet will be stolen, misused, or expose them to legal repercussions or persecution, they will be less likely to engage in online commercial transactions. They may also self-censor their online activity, which has the effect of further decreasing the availability of information and making it even harder for people and organizations to connect with each other.

All these effects are in play simultaneously, which makes it difficult to disaggregate the contribution of any one particular pathway. In addition, these effects are often intertwined; for example, the high cost of operating in a given country can inhibit the emergence of social media engines, which can limit the ability of people and organizations in that country to connect with each other online. Similarly, limiting access to online information can negatively impact the ability of a company to do market research and thereby can increase its operating costs.

The following section explains how Internet openness facilitates economic growth and, conversely, how restrictions on Internet openness can inhibit it.





... an open Internet is required to reap all the promised benefits from the Internet economy.



CHAPTER 4

How **Internet Openness** Benefits the **Economy**

The Internet is a cornerstone of today's global economy and has already unlocked enormous economic growth and job opportunities. It has the potential to vastly change the fortunes of millions of people. By 2016 almost half the world's population will be Internet users, and the Internet economy is expected to reach \$4.2 trillion in the G-20 economies alone.⁴⁰ If it were a country, the Internet would rank in the world's top five economies, behind only the US, China, Japan, and India, and ahead of Germany.⁴¹ In emerging economies, the Internet is playing an even more pivotal role than in the rest of the world. The Internet accelerates the process of economic growth by speeding up the diffusion of new technologies, spurring entrepreneurship, creating new business activities, and improving productivity levels.

Openness is not only intrinsic to the nature of the Internet and how it was intended to function, but it is also fundamental to the Internet's ability to generate economic value. Virtually all of the experts and stakeholders we interviewed for this report agreed that Internet openness, or the lack of it, has very real economic consequences. Moreover, the data suggest that an open Internet is required to reap all the promised benefits from the Internet economy. Figure 4 illustrates that more restrictive countries see lower economic impact from the Internet and the broader ICT sector. This figure shows that restrictive countries have lower scores in the "Economic impacts" pillar of the Networked Readiness Index (NRI) published by the World Economic Forum. This metric assesses the extent to which the ICT sector is leading to new organizational and business models, new services and products, new employment opportunities, and new patents.⁴²

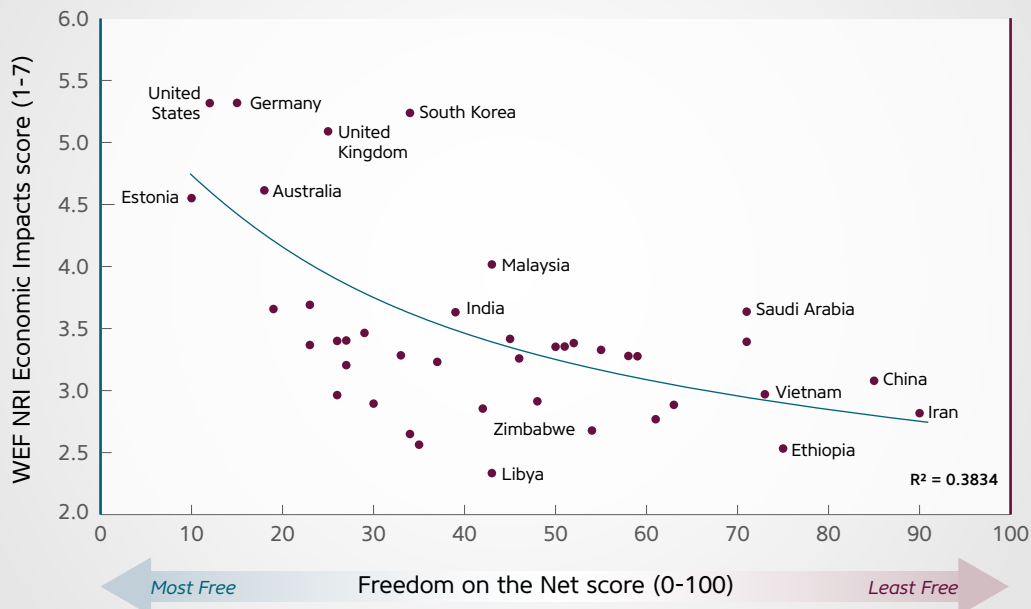
40 Dean, David, Sebastian DiGrande, Dominic Field, Andreas Lundmark, James O'Day, John Pineda, and Paul Zwillenberg, "The Internet Economy in the G-20," Boston Consulting Group, March 2012.

41 The Internet economy includes all the activities linked to the creation and use of Internet networks and services in four major categories: private consumption, public expenditure, private investment, and trade balance. It includes activities such as e-commerce, but excludes effects such as productivity impacts through e-procurement.

42 "Technical Notes and Sources," *The Global Information Technology Report 2013*, World Economic Forum.

FIGURE 4

Countries with greater openness on the Internet—indicated by lower Freedom on the Net scores—also tend to score better on the “Economic impacts” pillar of the World Economic Forum’s Networked Readiness Index (NRI)⁴³



Source: Freedom House, “Freedom on the Net 2012”; World Economic Forum, “The Global Information Technology Report 2013”; Dalberg analysis.

Using a different measure of the Internet’s contribution to the economy yields a similar result. Figure 5 shows that the countries where the Internet contributes the most to the overall economy (measured by the Internet contribution to GDP) also have the lowest levels of Internet restrictions.

43 The Economic impacts pillar of the World Economic Forum’s Networked Readiness Index (NRI) measures the effect of ICTs on competitiveness thanks to the generation of technological and non-technological innovations in the shape of patents, new products or processes, and organizational practices. It also measures the overall shift of an economy toward more knowledge-intensive activities.

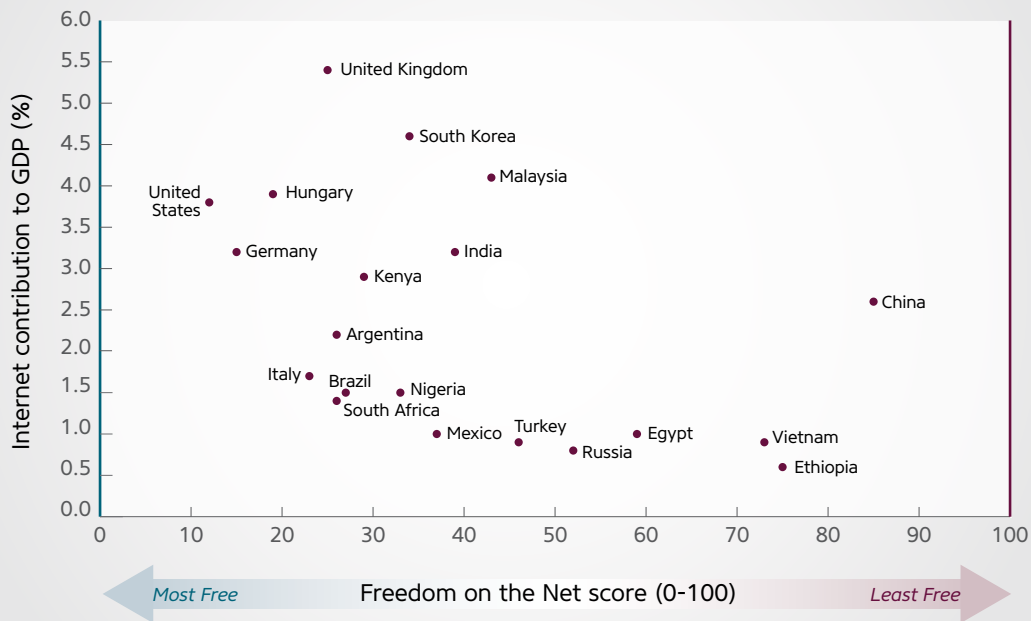


... higher levels of Internet openness are associated with larger and more dynamic Internet economies which, in turn, contribute more to the overall economy ...



FIGURE 5

In more restrictive countries—indicated by higher Freedom on the Net scores—the Internet contributes less to the overall economy.



Source: Freedom House, "Freedom on the Net 2012"; McKinsey Global Institute, "Lions go digital: The Internet's transformative potential in Africa," Nov 2013; Dalberg analysis.



The China Exception

The Chinese Internet sector and digital economy have flourished despite some of the most severe restrictions in the world. What explains this relative anomaly? Likely more important than any other factor is the size of China's Internet user base—nearly 600 million users and growing rapidly. A market of this size easily creates a domestic commercial ecosystem and internal economies of scale on the Internet, without having to rely on external actors and markets as other countries do.

Many arguments have been put forth explaining unique features of Chinese culture, society, and economy to shed light on why China's Internet sector and digital economy have witnessed such growth despite restrictions:

- China's censorship policies often allow citizens to benefit from the social and commercial aspects of the Internet, while placing strict limits on its use for political activism and collective expression.⁴⁴ Chinese citizens, particularly those in urban areas, frequently use the Internet for entertainment, leisure and shopping. For example, e-commerce in China has experienced a rapid growth—an astounding 44% of China's urban population is expected to shop online by 2015. One explanation for this: consumers have access to products online that they did not previously have in physical stores.⁴⁵
- The government's efforts are largely focused on domestic Internet censorship—deletion of Chinese language content on the much more frequently visited China-hosted websites. Some experts, such as Kaiser Kuo, the director of international communications for China's leading search engine Baidu, argue that restrictions on foreign content and services—the so-called “Great Firewall” that blocks sites outside of China—are “trivially easy to get around.” He believes the government does not try very hard to prevent people from actually accessing services like Facebook and Twitter, but rather “creates enough of a barrier to require some effort on the part of users who want to access those blocked sites.” However, not everyone agrees with his view, and the severity and impact of the “Great Firewall” is still debated.
- Some evidence suggests that despite the severity of current restrictions, China's Internet users are not particularly concerned with government surveillance. Chinese users may not be self-censoring or limiting their use of the Internet because of government monitoring. A possible explanation may be that users have accepted the status quo, knowing that they cannot change the state of government regulation within China.⁴⁶
- Other research has indicated that the Internet lends itself to “culturally-defined markets,” clustering online traffic to websites that share the same language, geography, or other cultural features. This theory suggests that Chinese users would choose restricted Chinese platforms over open platforms that originate in a different language and/or culture.⁴⁷
- China's ICT policies supporting domestic companies and incentivizing R&D efforts are also often cited as drivers of growth in the sector. In addition, the government's strategy of attracting foreign investment while requiring foreign firms to transfer technology in return for market access has been largely successful. Given the size and potential of China's market, many foreign firms have been willing to make this tradeoff.⁴⁸

But the sheer size of China's online population seems to have more explanatory power than any of these arguments. As of June 2013, China's online population was nearly 600 million,⁴⁹ more than twice the number in the US; the Chinese government projects this figure will reach 800 million users in 2015.⁵⁰ The size of the domestic Internet market is large enough to sustain the growth of a Chinese Internet that functions largely apart from the global Internet. Services like Baidu, Renren, WeChat, and Weibo—Chinese alternatives to the likes of Google, Facebook, and Twitter—have been able to tap into this market and achieve enormous growth, perhaps with the assistance of some other factors outlined above. While other countries that restrict the Internet may be similar to China with respect to some of these factors, none has the unique combination—a massive online market size coupled with growth-enhancing ICT policies and specific cultural and economic features—that has enabled China's unprecedented Internet growth.

44 King, Gary, Jennifer Pan, Margaret E. Roberts, “How Censorship in China Allows Government Criticism but Silences Collective Expression,” *American Political Science Review*, May 2013.

45 “Understanding China's E-commerce Market,” 24 November 2011, <http://www.chinaInternetwatch.com/1306/understanding-chinas-e-commerce-market/>, based on findings from “The World's Next E-Commerce Superpower,” *BCG Perspectives*, 22 November 2011.

46 Thomander, TJ, “Does Chinese Internet censorship have an effect on its ICT industry?,” The Institute for Technology and Social Change, 25 April 2011, <http://techchange.org/2011/04/25/does-chinese-Internet-censorship-have-an-effect-on-its-ict-industry/>; Bolsover, Gillian and Soumitra Dutta, “Social Foundations of the Internet in China and the New Internet World: A Cross-National Comparative Perspective,” Draft Working Paper, 14 June 2013.

47 Taneja, Harsh and Angela Xiao Wu, “How Does the Great Firewall of China Affect Online User Behavior? Isolated ‘Internets’ as Culturally Defined Markets on the WWW,” Northwestern University.

48 “Developing and Innovating the ICT Industry,” *China's Information Revolution*, The World Bank, 2007, <http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/282822-1176738081732/China-ch4.pdf>

49 “China's online population hits 591 million,” *Xinhuanet*, 18 July 2013, http://news.xinhuanet.com/english/sci/2013-07/18/c_132551883.htm

50 “MIIT: China's Internet User Base to Hit 800 Mln by 2015,” *Marbridge Daily*, Marbridge Consulting, January 2013, http://www.marbridgeconsulting.com/marbridgedaily/archive/article/62428/mit_chinas_Internet_user_base_to_hit_800 mln_by_2015

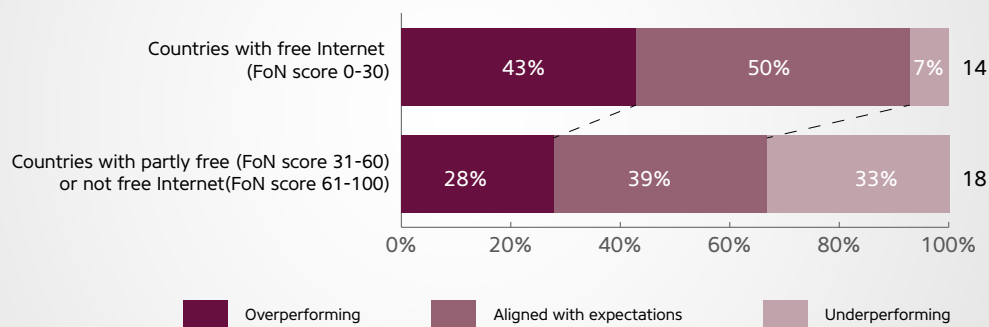
Given that the Internet economy is more likely to flourish in higher-income countries, we also explored differences among countries when correcting for GDP per capita. Figure 6 shows that even when correcting for GDP per capita, countries with an open internet are much more likely to “overperform” (e.g., they see greater effects from the Internet on the economy than would be predicted by their GDP per capita). The figure compares country performance on the e-Intensity Index, which measures the maturity of the Internet

economy, and the performance that would be expected based on its GDP per capita.⁵¹ A country with fewer restrictions (categorized as “free” by the Freedom on the Net index) is more likely to have a more mature Internet economy when we account for GDP per capita. Similarly, countries with more restrictions (categorized as “partly free” or “not free”) are more likely to be worse off in terms of the maturity of their Internet economy even when we correct for GDP per capita

FIGURE 6

Countries with more Internet restrictions—classified by Freedom on the Net as “partly free” or “not free”—are more likely to have underperforming Internet economies than countries classified as “free.”⁵²

Comparison of e-Intensity Index scores with per capita GDP



Source: Freedom House, “Freedom on the Net 2012”; BCG, “Adapt and Adopt: Governments’ Role in Internet Policy,” Oct 2012; Dalberg analysis.

51 The e-Intensity Index measures the relative maturity of countries’ Internet economies on the basis of three factors: enablement (measures various aspects of fixed and mobile infrastructure deployment), engagement (measures how actively businesses, governments, and consumers are embracing the Internet), and expenditure (measures the proportion of money spent on online retail and advertising).

52 This analysis does not disaggregate the FoN categories of “Partly free” and “Not free” because of the sample size.



Why GDP Misses the Internet's Full Impact

Gross Domestic Product (GDP), an aggregate measure of a country's total economic production, is the most widely accepted measure of economic well-being. Government officials around the world rely on GDP figures to inform their policies and make decisions. Yet, how do GDP figures capture the utility of Wikipedia articles, Google maps, Linux open source software, or YouTube videos?

They do not. It is hard to assign value to the service rendered when these tools are free to use. If there is no money exchanged in a transaction, it won't be reflected in the country's GDP. This means that the benefits that accrue to a student when he or she takes a free online course are not factored into GDP figures. GDP calculations assume that the amount we spend is equal to the value we get.

What are we missing by not including these effects in the GDP? Erik Brynjolfsson and JooHee Oh of the Massachusetts Institute of Technology conducted research based on the time Internet users spend on free websites. They estimate the increase in consumer surplus created by free Internet services to be over \$30 billion per year in the US alone, about 0.23% of average annual GDP during the period of 2002-2011.⁵³ Of course, it is fair to ask if users would be willing to pay for these services—and if they were, would they pay this much money? Probably not. However, these impressive figures tell a story: the value that societies gain from the Internet goes beyond just the monetary transactions that it enables; the Internet provides an opportunity for users to increase their prosperity and well-being beyond economic traditional measures.

The three correlations described above all demonstrate that higher levels of Internet openness are associated with larger and more dynamic Internet economies which, in turn, contribute more to the overall economy—regardless of a country's level of income.

The following sections discuss in greater detail how Internet openness affects the Internet economy and allow it to contribute more fully to the growth and resilience of the overall economy:

- 1. Impact on the ICT Sector:** Policies and regulations that support Internet openness make it easier for people to access the Internet, which in turn creates a market for Internet-enabled businesses. Conversely, policies and regulations that restrict openness make it costlier and riskier for Internet-enabled businesses to operate, which can depress economic growth.
- 2. Impact on e-Commerce:** Higher levels of Internet openness are associated with greater volumes of e-commerce, including online banking. Especially in developing countries, increases in e-commerce represent new economic activity, rather than merely replace in-person transactions. Moving transactions online can also enhance productivity and thus supports economic growth.
- 3. Impact on Investment:** Multi-national companies report that they are more likely to invest in countries with an open Internet and far less likely to invest in countries with significant (and especially unclear or non-transparent) restrictions on openness. By 'scaring off' potential investors, countries that restrict Internet openness limit their economic growth.
- 4. Impact on Innovation:** Countries with a free and open Internet tend to be more innovative. Innovation, in turn, is broadly recognized as an important driver of economic growth.
- 5. Social Gains that Support Long-Term Economic Growth and Stability:** Finally, an open Internet facilitates improvements in education, institutions, and the formation of social capital—all of which are associated with robust and resilient economic growth over the long term.

53 Brynjolfsson, Erik and Dr. JooHee Oh, "The Attention Economy: Measuring the Value of Free Goods on the Internet," *Current Project*, <http://mitsloan.mit.edu/ide/research/>

SECTION 4.1 Impact on the ICT Sector

A strong Internet economy requires a healthy and dynamic ICT sector⁵⁴ that can enable a country's transformation into a digital society. An open Internet can accelerate this process, creating a positive business climate for entrepreneurs and investors by keeping operating costs low and decreasing the perceived level of risk of doing business in a certain country. Such conditions can help attract new investment flows, eliminate the barriers to growth for existing firms in the sector, and foster the emergence of new Internet businesses.

The first step toward creating a strong ICT sector is to expand infrastructure and access. Research has shown significant economic returns for investing in ICT infrastructure. The American Recovery and Reinvestment Act of 2009 stated that for every dollar invested in broadband the economy sees a ten-fold return on that investment.⁵⁵ A November 2013 study commissioned by the UK Department for Culture, Media & Sport projected that public investment in faster broadband networks would have a 20-fold net economic return.⁵⁶ In emerging markets, expansion of Internet access and ICT growth can also have a large impact: a McKinsey study estimated that expanding broadband penetration in emerging markets to the levels in Western Europe could add up to increases in the GDPs of all countries classified as emerging markets in the study of \$300-420 billion and result in 10-14 million new jobs.⁵⁷ A study from the Inter-American Development Bank shows that in Latin America and the Caribbean, on average, a 10% higher

broadband penetration is associated with 3.19% higher GDP, 2.61% higher productivity, and 67,016 new jobs.⁵⁸

Data confirms that countries that are home to significant regulatory, economic, and infrastructural obstacles (as measured by the Freedom on the Net score for "obstacles to access") also tend to have low Internet penetration rates (see Figure 7 below). Without lifting these restrictions, the ability of the Internet to contribute to economic growth in these countries will remain limited.

In addition to widespread Internet access, developing a robust Internet economy also requires a well-functioning physical network. Where connection speeds are slow, businesses are less likely to adopt Internet-reliant technologies and platforms. Data on national average connection speeds suggest that countries with greater Internet restrictions also have slower network speeds (see Figure 8 below). Slower speeds in countries with more restrictions may be part of the explanation for why those countries see fewer economic benefits from the Internet. However, it should be noted that accurate and consistent measurement of Internet speed continues to pose a challenge. The analysis below relies on data from Akamai, a leading distributed computing platform, but there are a number of other sources for broadband speed tests, all employing different methodologies, sample sizes, and user populations.⁵⁹ Akamai's speed measurements in its quarterly *State of the Internet Report* are calculated based on content requests made to Akamai's HTTP/S platform, which sees between 100 and 200 trillion requests each quarter.⁶⁰

54 The ICT sector includes a combination of manufacturing and service industries that capture, transmit, and display data and information electronically. It includes the Internet and other system networks such as mobile networks. We acknowledge that Internet openness does not directly affect the entire ICT sector, but primarily Internet-enabled services. However, given the growing role that the Internet plays in the ICT sector globally, this report uses the term "ICT sector" throughout, although we refer specifically to its Internet components.

55 "Stimulus: American Recovery and Reinvestment Act of 2009: Essential Documents," Federal Government. Government Institutes, June 16, 2009.

56 "UK Broadband Impact Study—Impact Report," SQW in partnership with Cambridge Econometrics, November 2013, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/257006/UK_Broadband_Impact_Study_-_Impact_Report_-_Nov_2013_-_Final.pdf

57 Buttkeireit, Sören, Luis Enriquez, Ferry Grijpink, Suraj Moraje, Wim Torfs, and Tanja Vaheeri-Delmulle, "Mobile Broadband for the Masses: Regulatory Levers to Make it Happen," McKinsey & Company, February 2009, in *ICT for Economic Growth: A Dynamic Ecosystem Driving The Global Recovery*, World Economic Forum, 2009, www.weforum.org

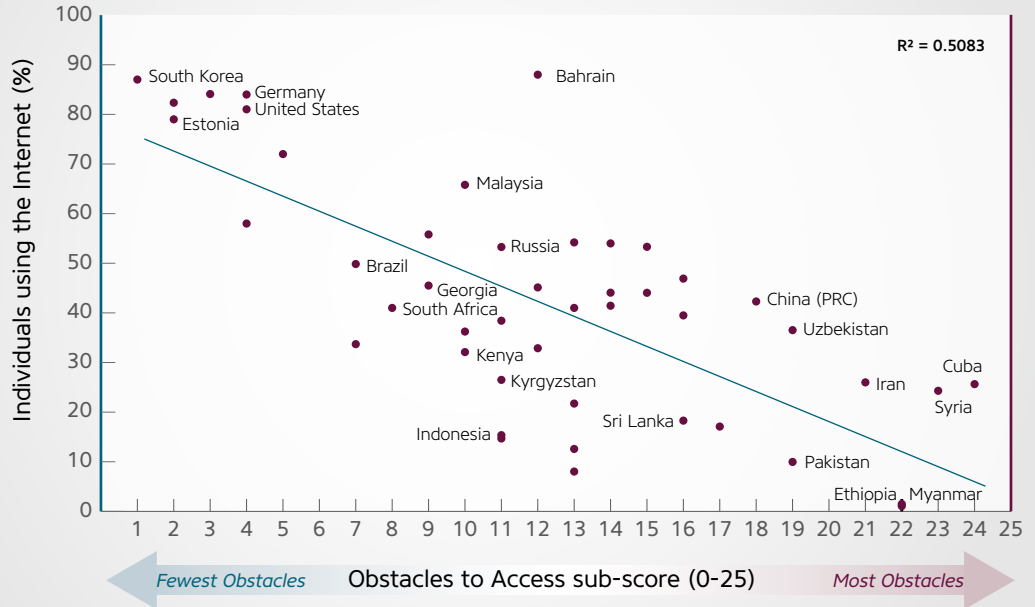
58 Zaballos, Antonio García, and Rubén López-Rivas, "Socioeconomic Impact of Broadband in Latin American and Caribbean Countries," Inter-American Development Bank, November 2012.

59 Measurements are also collected by Ookla (SpeedTest/NetIndex), Pando Networks, and SamKnows, among others.

60 For more information on Akamai's methodology please refer to <https://blogs.akamai.com/2013/04/clarifying-state-of-the-internet-report-metrics.html>

FIGURE 7

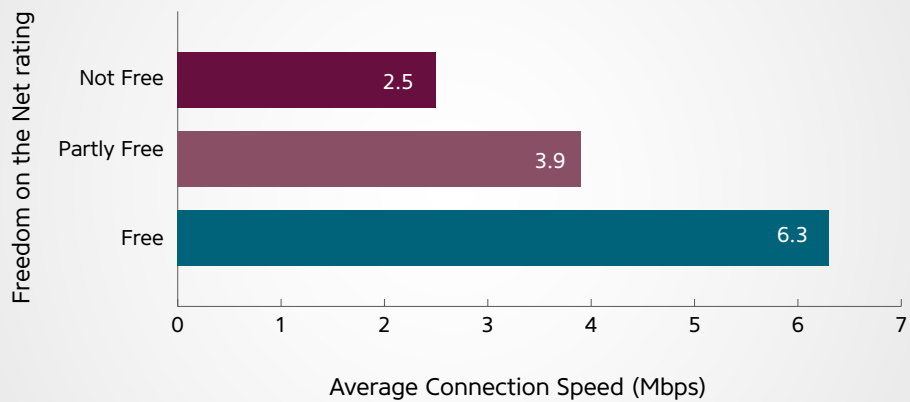
Countries with significant obstacles to access (e.g., infrastructural limitations; prohibitively expensive access; legal, regulatory, or economic obstacles for internet service providers) have low Internet penetration rates.



Source: Freedom House, "Freedom on the Net 2012"; ITU Telecommunication/ICT Indicators Database, Dec. 2013; Dalberg analysis.

FIGURE 8

Countries with more Internet restrictions tend to also have slower connection speeds.



Source: Freedom House, "Freedom on the Net 2013"; Akamai, "The State of the Internet," Volume 6, Number 2, 2nd Quarter, 2013 report; Dalberg analysis.

While the relationship between Internet openness and connection speeds bears further exploration, poor performance in restrictive countries is often a result of poor infrastructure, intentional bandwidth throttling, or a side effect of Internet-censoring and filtering technologies.

Access and speed are necessary but not sufficient for the ICT sector to flourish. Our research suggests that there are four primary types of restrictions that can also slow down the development of the Internet infrastructure in a country and have significant effects on the emergence and growth of ICT companies and services. The four restrictions are 1) regulatory barriers restricting market access; 2) data localization and traffic routing laws; 3) content restrictions and legal frameworks; and 4) intermediary liability laws.

Regulatory barriers restricting market access to ICT companies can limit the growth of Internet access and prevent the widespread adoption of the Internet as a business tool. A recent comparison between approaches to broadband in Kenya and Senegal illustrates this effect. While proactive policymaking on broadband in Kenya has been critical to expanding affordable access, in Senegal, regulations have made it difficult for broadband operators to obtain licenses, limiting the number of service providers and creating a de facto monopoly.⁶¹ Users have few options to choose from, and prices remain high. While Kenya and Senegal had similar levels of Internet penetration in 2005—and Senegal’s growth even outpaced Kenya’s in certain years—Kenya quickly leapt ahead following the liberalization of markets. As of 2012, Senegal’s Internet penetration remained below 20%, while Kenya’s had grown to 32%.⁶² Access is a major contributor to economic growth; slowing down access expansion has significant costs: research suggests that a 10% increase in Internet penetration is correlated with a 1% increase in the annual rate of new business formation.⁶³

Ethiopia is another example of the negative effect that regulatory barriers can have on the growth of the ICT sector. Foreign providers like Vodafone and MTN have recently been issued licenses to operate in the country, but the sector remains closed to foreign

investment in infrastructure. While some infrastructure is in place, Internet penetration in the country stood at just 1.5% in 2012⁶⁴ while network performance remains poor and prices high.

Other regulatory measures that can have a significant impact on the expansion of the ICT sector in a country are **data localization and traffic routing laws**. Restrictions that disrupt the free flow of Internet traffic across national borders can negatively affect a large variety of companies. According to Nick Ashton-Hart, Geneva Representative of the Computer & Communications Industry Association, “The Internet is designed to automatically optimize itself in terms of network pathways, not to deal with arbitrary routing restrictions.” He argues that any restrictions imposed on traffic will result in more congestion and less efficient use of the network, negatively affecting business productivity.

“*The security of data does not depend on where it is stored, only on the measures used to store it securely. ... these misunderstandings about the security and privacy of data result in policies that negatively affect innovation, productivity, trade, and consumer welfare.*”

—Daniel Castro, *The False Promise of Data Nationalism*, Information Technology and Innovation Foundation

Countries around the world—including Brazil, Malaysia, Germany, and India—have proposed or discussed enacting restrictions on Internet traffic, many in reaction to the revelations of NSA surveillance in 2013. The ostensible rationale for these measures is to guarantee privacy for citizens’ data by ensuring that certain types of information are stored only on servers within national borders. However, such policies can be ineffective in guaranteeing security and privacy, and can also harm the economy. In a recent paper on “The False Promise of Data Nationalism,” Daniel Castro of the Information Technology and Innovation Foundation writes, “The security of data does not depend on where it is stored, only on the measures used to store it securely.” He believes that “these

61 “Senegal—land of the de-facto Internet monopoly—is urged to encourage greater competition and innovation to improve penetration levels,” 19 October 2012, <http://www.balancingact-africa.com/news/en/issue-no-627/top-story/senegal-land-of-the-en>

62 “Percentage of individuals using the Internet,” ITU Statistics, 2013.

63 “Towards a Connected World: Socio-economic Impact of Internet in Emerging Economies,” Telenor-BCG report, <http://www.telenor.com/wp-content/uploads/2012/03/Towards-a-Connected-World-1MB.pdf>

64 “Percentage of Individuals using the Internet,” ITU Statistics.

misunderstandings about the security and privacy of data result in policies that negatively affect innovation, productivity, trade, and consumer welfare.”⁶⁵

Schildhauer, director of the Alexander von Humboldt Institute for Internet and Society: “Say I have an innovative idea that I want to roll out all over the world. If I have to build a business plan that accounts for different laws and governance structures in different countries, I won’t be able to succeed. Think about a Facebook or WhatsApp—how could these emerge and thrive if the first question entrepreneurs have to ask themselves is: ‘How can I survive in a world where every country has different regulations about user data, privacy, and information security?’”

These restrictions can also make a country and the businesses within it unattractive to investors; data localization laws have powerful economic implications for prospective investors. Many investors will not invest in markets where they think that the local regulatory structure is inherently unstable or subject to change in a way that could impose significant new costs on business operations. To date, no strict data localization laws have been implemented. However, certain related regulations may have similar consequences. For example, Malaysia’s Personal Data Protection Act 2010—in force as of November 15, 2013—imposes cross-border data transfer restrictions under penalty of fines or imprisonment.⁶⁸ It is still too soon to assess the economic consequences of this law for companies operating in Malaysia—and the law may improve data protections for individual users—but experts predict that compliance with the Act will require substantial investment for many ICT companies.

In addition to the regulatory obstacles discussed above, ICT businesses in certain countries also suffer from extra costs derived from existing **content restrictions and legal frameworks**. The policies and laws imposed by governments banning certain types of online content create costs for Internet businesses.

A number of Internet businesses we spoke to—including search engines, discussion forums, and social networks—cited the high costs of compliance with these types of restrictions as a major constraint to business growth. These costs include personnel costs, legal expenses, and investment in hardware and software. Such costs are most significant when companies are required to monitor all content they host or mediate—compliance with such laws can require special hardware and software for filtering and monitoring, additional staff, management time, and legal support for defending against lawsuits.

68 Chi, Melissa, “Data protection act gazetted, effective today,” November 15, 2013, <http://www.themalaymailonline.com/malaysia/article/data-protection-act-gazetted-effective-today>



By The Numbers

Cost of revelations about NSA Internet surveillance in estimated lost revenue to U.S. cloud computing industry until 2016:

\$35
billion⁶⁶

Estimated direct cost of five day network shutdown in Egypt in 2011:

\$90
million⁶⁷

For large and small companies alike, these proposals would mean significant additional costs of doing business in certain parts of the world. Eric Loeb, Vice President of International External Affairs for AT&T, says the ability of information to move across borders is vital to economic growth because many businesses depend on the free flow of data: “For communications companies, like AT&T, our goal is to seamlessly move data globally for businesses so they can exchange information across time zones and borders. To make this happen, our network needs to operate in a consistent way around the world; a country that forces data to be localized will cause friction in the network, and it can be counter-productive towards goals to promote investment there,” he says.

Much more problematic are the implications of these data localization proposals for online startups. Says Dr. Thomas

65 Castro, Daniel, “The False Promise of Data Nationalism,” The Information Technology and Innovation Foundation, December 2013.

66 Given how recent these revelations are, little work has been done to estimate their costs. This estimate—on the high end—assumes that US cloud computing providers retain their current domestic market shares but ultimately lose 20% of the foreign market to competitors. The low estimate assumes a 10% loss in foreign market share and a total cost of \$21.5 billion over three years. See: Castro, Daniel, “How Much Will PRISM Cost the U.S. Cloud Computing Industry?,” The Information Technology and Innovation Foundation, August 2013.

67 “The economic impact of shutting down Internet and mobile phone services in Egypt,” OECD, 4 February 2011.

While even the most open countries limit certain types of harmful content, the economic implications of these limits can be minimized by implementing laws that are narrowly defined, specific, and transparent, and that avoid imposing excessive additional compliance costs on ICT companies. Where these regulations are

vaguely defined, inconsistent, or require that companies monitor and store all content that they host or mediate, compliance can be quite costly and thus reduce the ICT sector's ability to generate tax revenue, create jobs, and contribute to overall economic growth.



Ekşi Sözlük: Censorship and the Costs of Compliance in Turkey

Even though Turkish law does offer some protections for online intermediaries, the costs of compliance with a relatively strict legal framework governing online content and activities can be high. Take the example of the popular Turkish website Ekşi Sözlük.

Founded in 1999, the satirical online dictionary and social network is driven entirely by user-generated content. It is one of the most popular websites in Turkey, with over 14 million visitors each month.

“A business of Twitter or Facebook's size and scale could never happen in Turkey until the legal system is changed to be more conducive to these types of businesses.”

—Sedat Kapanoğlu,
founder of Ekşi Sözlük

Despite legal protections exempting the site from liability for third-party content, founder and CEO Sedat Kapanoğlu spends at least one day a month in court defending the site and educating prosecutors and judges about the protections afforded to him by law. The site is still required to comply with takedown requests and complex restrictions on specific types of content, resulting in substantial legal and management costs. Failure to comply can result in up to a year in prison.

Because of its commitment to free expression, Ekşi Sözlük faces threats and accusations of defamation that recently led to the collapse of talks with an investor.

In early February 2014, the Turkish Parliament approved a new Internet law that further tightens existing restrictions and grants new powers to the government to censor and monitor Internet traffic.⁶⁹ This new law will make life even more difficult for sites like Ekşi Sözlük. The bill allows broader website blocking without a court order, higher penalties for intermediaries failing to comply with censorship orders, and more widespread government surveillance. It also increases compliance costs by expanding the mandates for companies to store data and making the language regulating the types of content that can be blocked even vaguer.⁷⁰ While the implementation of this law is still uncertain, it is facing strong opposition both at home and abroad. Given the challenges that Internet companies already face in Turkey, these changes make the environment less friendly for many businesses and may force some to shut down entirely.

KEY FACTS

- **250 lawsuits** fought to date
- **4 lawyers** on retainer to assist with content takedowns
- **One day** a month in court defending site
- **15%** of total operating expenses as compliance costs

69 "Turkish MPs endorse Internet control law," Aljazeera, 6 February 2014, <http://www.aljazeera.com/news/europe/2014/02/turkish-mps-endorse-internet-control-law-2014266540113308.html>

70 "Parliament Urged to Reject Draconian Internet Bill," Reporters Without Borders, 18 January 2014, <http://en.rsf.org/turkey-parliament-urged-to-rejected-18-01-2014,45745.html>

Intermediary liability laws can also inhibit the growth and emergence of certain ICT companies. Telephone companies are never held legally responsible for what their customers say over the phone, nor are they forced to monitor all phone calls for illegal activities. A telephone company is considered an intermediary because it provides a platform for communications between users. In many countries, online intermediaries—a broad category of service providers and platforms that includes ISPs, content hosts, websites, discussion forums, and social networks—can be held legally responsible for the activities of their users. Regulations that make online intermediaries liable for third-party content have enormous costs for Internet businesses.

Appropriate protections for online intermediaries are critical for a strong Internet sector and digital economy to develop. A recent study by Copenhagen Economics found that the activities of online intermediaries contributed over \$500 billion to the GDP of the EU27 in 2012.⁷¹ This sector of the economy is growing at greater than 10% a year, faster than GDP growth. The study argues that this large economic contribution exists due to the legal protections for intermediaries provided in the EU's E-Commerce Directive (Directive 2000/31/EC): "The limited liability regime is not only necessary for the functioning and growth of online intermediaries, but it is also beneficial to the European economy. The intermediaries' contributions to the economy would not be

“ *It is precisely these types of strong protections for online intermediaries that have led to the dramatic growth of online forums, social networks, and other interactive, user-generated content sites that have become vibrant platforms for expression in the U.S., Europe, and all over the world.* ”

—Kevin Bankston, policy director for New America Foundation's Open Technology Institute

71 The average 2012 exchange rate for the euro (1 USD = 0.809 EUR) was used to convert the original figure into US dollars.

possible at the current level without the liability regime as it is currently designed.”⁷²

According to Kevin Bankston, policy director for New America Foundation's Open Technology Institute, these protections have been critical to the growth of the Internet sector:

It is precisely these types of strong protections for online intermediaries that have led to the dramatic growth of online forums, social networks, and other interactive, user-generated content sites that have become vibrant platforms for expression in the U.S., Europe, and all over the world. Indeed, without laws like Section 230,⁷³ so-called Web 2.0 services that rely on user-generated content may never have even been funded or built, either due to the fear of potential liability or the high cost and impracticality of trying to proactively police all of the content being posted to such services.⁷⁴

As these examples illustrate, various restrictions on Internet openness can make it harder to access and use the Internet in the first place. They also make it both more costly and more risky for Internet-enabled companies to do business. Such restrictions limit the Internet's ability to generate value and facilitate economic growth.

72 Nielsen, Katrine E., Bruno Basalisco, and Martin H. Thelle, "The impact of online intermediaries on the EU economy," *Copenhagen Economics*, Prepared for EDiMA, April 2013.

73 In the United States, online intermediaries are afforded protections under Section 230 of the Communications Decency Act of 1996. In the early days of the commercial Internet, the US Congress recognized the importance of protecting intermediaries as a way to promote continued innovation and rapid growth of the digital sector. Another law—the Digital Millennium Copyright Act (DMCA)—passed a few years later, protects online services from claims of copyright infringement, establishing a "notice and takedown" regime. Under this regulation, intermediaries cannot be charged with copyright infringement as long as they take down allegedly infringing content when notified by the copyright owner.

74 Bankston, Kevin, "Shielding the Messengers: CDT Travels to Thailand to Argue Against Intermediary Liability," 5 April 2012, <https://www.cdt.org/blogs/kevin-bankston/0504shielding-messengers-cdt-travels-thailand-argue-against-intermediary-liabil>



The Consequences of Intermediary Liability in Thailand

“If I were a Thai entrepreneur and wanted to create an Internet application for Thailand right now, the first thing I would do is move to Singapore,” says Mike Godwin, Senior Policy Advisor to the Global Internet Policy Project at Internets. Godwin’s concerns over hosting an Internet-based business or platform in Thailand stem from the country’s Act on Computer Crime (2007), which outlines certain types of illegal content and makes platforms and service providers—including websites, social networks, and discussion forums—legally liable for users’ content.

At the core of Godwin’s statement is the lack of clarity surrounding some of the provisions outlined in the Thai law. Certain sections are vague and can be broadly interpreted and applied, making it too easy to invoke a law that prescribes penalties harsher than what already exists in the Penal Code.⁷⁵ Ann Lavin, Director of Public Policy & Government Affairs, Southeast Asia and Greater China at Google Asia Pacific, confirms that the Thai government is making efforts to clarify its position on the subject of intermediary liability; the Permanent Secretary at the Ministry of ICT has sent a letter explaining that “a service provider shall only be liable to the punishment under this section if he or she is aware that the computer data in the computer system under his or her control is an offense under Section 14 and still allows or supports the existence of such data in his or her computer system.”

However, in the meantime, according to Arthit Suriyawongkul of the Thai Netizen Network, a legal and policy advocacy group focusing on issues of Internet freedom, the law has created an

environment where many service providers feel there are more burdens to operating this type of business than are worthwhile. He cites numerous examples of website owners and platform providers facing protracted legal battles due to the intermediary liability provisions. For example, the owner of 212cafe.com, a user-moderated discussion forum, has opted to shut down his business. For those that do choose to remain operational in Thailand, the costs of compliance—including software, hardware, and human resources needed to filter and take down illegal content, along with money set aside to fight legal battles—can be quite significant.

While the lack of clarity of the 2007 law has made Thailand highly unattractive for large multinational Internet companies looking for regional operations centers or data storage facilities, its biggest impact has been on Thai entrepreneurs and businesses. A member of the Thai web hosting association has noted that many hosting companies are relocating to places like Singapore and Malaysia, taking jobs and revenues with them. And while local language social networks are emerging in nearby countries like Laos and Myanmar—capitalizing on a natural market barrier that creates advantages for start-ups that rely on local language content—similar services are not emerging in Thailand, despite its much larger online population and stronger infrastructure.

The Thai government’s attempts to clarify the limited circumstances under which intermediaries would be liable for online content, however, may have the desired effect of encouraging the emergence of new Internet businesses and new investment flows.

75 Tunsarawuth, Sinfah, and Toby Mendel, “Analysis of Computer Crime Act of Thailand,” May 2010, <https://thainetizen.org/wp-content/uploads/2010/07/Analysis-of-Computer-Crime-Act-of-Thailand-By-Sinfah-Tunsarawuth-and-Toby-Mendel.pdf>

SECTION 4.2 Impact on E-Commerce

As previously discussed, the Internet provides new opportunities for commercial activity, resulting in revenues and jobs that would not exist otherwise. Data support the hypothesis that restrictions on the Internet can affect demand for and supply of Internet-enabled services, resulting in lower levels of commercial activity online.

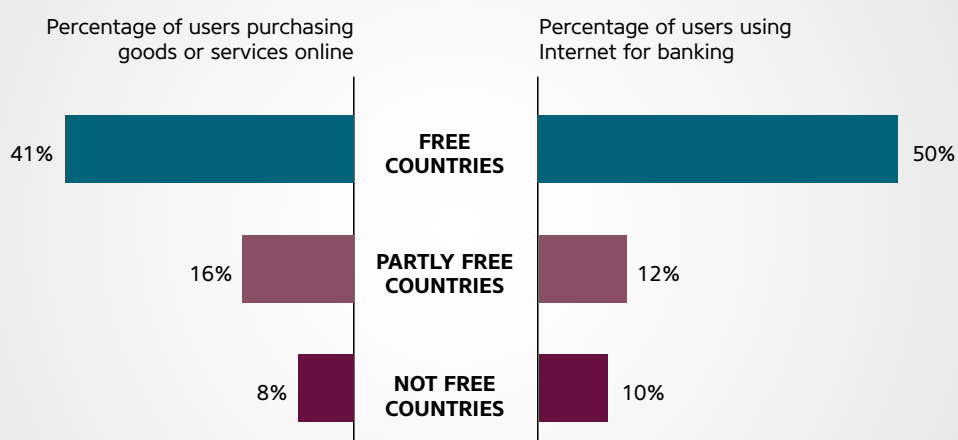
Figure 9 shows that consumers in countries with an open Internet (classified as “Free” by the Freedom on the Net report) are more likely to use the Internet for purchasing goods or services or executing financial transactions. This result may be driven by the limited availability of these services or by the lack of users’ interest in or ability to take advantage of them in “not free” countries. Our research and interviews suggest that supply constraints are most likely to be the primary explanation, but without additional data

and analysis it is hard to reach a definitive conclusion. Nevertheless, it is likely that the restrictions described in the previous section depress the availability of e-commerce services in countries without a free and open Internet.

An analysis of eBay data on electronic transactions lends support to these results and shows that countries with lower levels of Internet openness also tend to have lower eBay activity levels in terms of both sales and purchases per capita (outlined in Figure 10 on page 41). Though eBay transactions may not be fully representative of the e-commerce market in a particular country (e.g., in some markets other peer-to-peer sales or auction platforms have emerged as an alternative), these findings are consistent with the results discussed above.

FIGURE 9

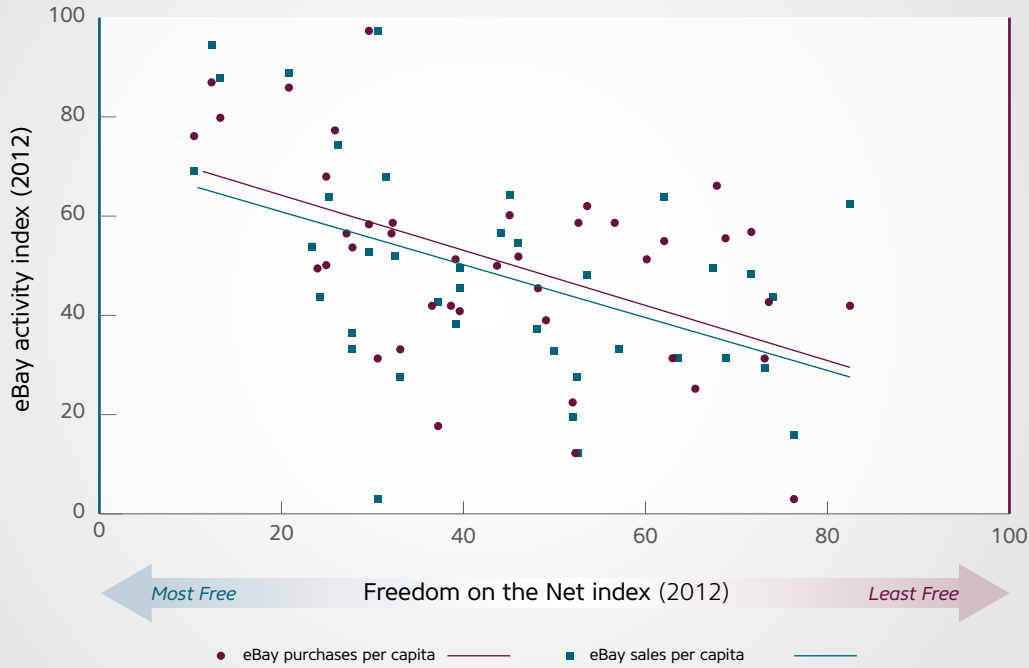
Countries that score as more open on the Freedom on the Net index also tend to use the Internet more for online banking and to purchase goods or services.



Source: Freedom House, “Freedom on the Net 2012”; “ICT Indicators database,” ITU, 2013; Dalberg analysis.

FIGURE 10

Countries with higher scores on the Freedom on the Net index—indicating less openness—also tend to have lower levels of eBay activity.⁷⁶



Source: Freedom House, "Freedom on the Net 2012"; eBay Inc; Sidley Austin LLP analysis.

Vietnam is an example of how Internet restrictions can inhibit online commercial activity. Recently enacted licensing regulations for e-commerce businesses have made starting a new online business difficult in this country. One Internet entrepreneur in Vietnam noted that the policymakers passing these rules might not be aware of the challenges that certain laws can pose to the Internet economy and to the emergence of new e-commerce startups. "People are trying to get entrepreneurs and policymakers in a room," he says, "but it's unlikely that they see eye-to-eye on these issues." Some businesses may nonetheless thrive in a challenging regulatory environment, but it is impossible to know

the counterfactual: how many additional businesses may have emerged without these restrictions.

Online economic activities are especially important in emerging economies because these activities most often represent new transactions rather than substitutes for face-to-face transactions. Thus they have a net positive effect on economic activity. In addition, greater e-sales and the adoption of other Internet-enabled processes and tools also result in greater productivity levels, which also contribute to economic performance. In other words, restrictions on Internet openness appear to depress e-commerce, which damages overall economic performance.

76. Calculations made by Sidley Austin LLP, based on data provided by eBay Inc. and "Freedom on the Net 2012" data from Freedom House. eBay activity is measured by the logarithm of eBay sales per capita and eBay purchases per capita (in 2012) and indexed to a scale from 0 (lowest activity among countries) to 100 (highest activity among countries). The "Freedom on the Net" index varies from 0 (highest degree of Internet freedom) to 100 (lowest degree of Internet freedom). For confidentiality reasons, figures shown are approximations of original values, but the chart looks almost identical with original data.

SECTION 4.3 Impact on Investment

Restrictions on the Internet can also have a chilling effect on investment, making a country less attractive to foreign investors. All types of Internet restrictions have a signaling effect that potential investors factor into their decisions. Investors look for markets where expected gains outweigh expected risk. Research has shown that foreign direct investment tends to flow to countries with large market sizes and high degrees of openness to trade, and where the rule of law prevails.⁷⁷ Restrictions of any kind—including network shutdowns, surveillance, and censorship—can be interpreted as a proxy for the risk of operating in a given country, particularly in terms of the government’s commitment to openness and the rule of law.

According to AT&T’s Eric Loeb, “AT&T, like any company, is constantly evaluating where it should invest its capital and resources. Over the last few years, we have annually invested more than \$1 billion in our global network and services, and a key

“Overall, countries that take active steps to remove market access barriers and promote modernized regulations will attract investment.”

—Eric Loeb, Vice President of International External Affairs, AT&T

driver of investing in a particular market or country is the ease of doing business.” Of course, companies take many other factors into consideration when determining where to invest, but Loeb notes market openness with respect to the Internet and other network related services will typically signal a positive business environment: “Overall, countries that take active steps to remove market access barriers and promote modernized regulations will attract investment,” he says.

Uncertainty plays an especially important role in investment decision-making. Where regulations are vague, hard to predict, or highly subject to change, companies are far less likely to invest significant resources. This is especially true in the ICT sector, where companies may be weighing whether or not to make large and often irreversible investments in infrastructure. In many cases, firms and investors are faced with difficult tradeoffs between attractive market opportunities and risk due to regulatory uncertainty. For example, in Myanmar, the recent political and economic opening has created an enormous market opportunity. But due to Myanmar’s history of restrictive policies and the fact that the implementation of important ICT policies is still pending, many firms and investors are approaching the market cautiously (for more on Myanmar’s ICT sector, see the box below on The Challenges of Overcoming a History of Restrictive Policies in Myanmar). In other countries—especially ones that have undergone a democratic transition in recent years—old, repressive laws remain on the books. Even if these laws are no longer enforced, their very presence can create uncertainty and deter investment.

77 Anyanwu, John C., “Why Does Foreign Direct Investment Go Where It Goes?: New Evidence From African Countries,” *Annals of Economics and Finance* 13-2, 425(462) (2012). This research also suggests that other factors positively affecting foreign direct investment are: low financial development levels, high volume of foreign aid, agglomeration, and natural resource endowment and exploitation.



The Challenges of Overcoming a History of Restrictive Policies in Myanmar

The end of the military junta in 2011 brought a series of reforms in Myanmar aimed at opening and connecting the country to the global economy. These reforms have also significantly changed the country's Internet ecosystem. In late 2012, the OpenNet Initiative reported that independent and foreign news sites, oppositional political content, and sites with content relating to human rights and political reform—all previously blocked—had become accessible.⁷⁸ In late 2013, Freedom House confirmed that the government continues to lift Internet censorship in practice; Myanmar's score on the Freedom on the Net index went down from 88 in 2011 to 75 in 2012 and 62 in 2013, indicating marked improvement.⁷⁹ However, overcoming a long history of restrictive policies is challenging and takes time.

One of the most promising reforms aimed at increasing Internet access and openness in Myanmar has been the recent issuance of licenses to two telecoms operators, Ooredoo and Telenor. However, progress has been slower than expected. After months of delays, the signing ceremonies to hand over the necessary licenses to the operators selected to build and run the new infrastructure finally occurred in January and February 2014.⁸⁰ Similarly, the country's new Telecommunication Law that opens the door to foreign investment was signed in October 2013, but the implementing regulations are still pending.⁸¹

In the meantime, over 90 percent of Myanmar's population is cut off from the Internet. Communications infrastructure in the country splits urban and rural areas and isolates ethnic factions and religious groups outside of Yangon. Even in major cities like Mandalay, with a population over 1 million, the Internet—for the few who can afford it—crawls at speeds slower than dial-up.

Limited access creates a “form of censorship,” as Ravi Chhabra, the co-founder of Barcamp Yangon, the country's largest technology conference with nearly 10,000 attendees, put it. Internet access is reserved for a minority of wealthy urban residents. And even for those with the fastest connections available in Yangon, speeds are still too slow to reliably watch video, access online courses, or download software applications.

Myanmar is struggling to get rid of the cumbersome and restrictive bureaucracy that characterized this country during five decades of heavy-handed military rule. Foreign companies and investors are starting to move into this new market, though slowly and with a great deal of caution. For example, Cisco has committed to invest in the first two Cisco Networking Academies and is exploring further business opportunities.⁸² Sandy Walsh, Cisco's Regional Director of the Social Innovation Group in Asia Pacific explains that “foreign companies are approaching this market with optimism, but also with caution.” Unprecedented changes are occurring but it is still too early to fully grasp the breadth and depth of progress.

78 Poetranto, Irene, “Update on information controls in Burma,” 23 October 2012, <https://opennet.net/blog/2012/10/update-information-controls-burma>

79 See 2013 and 2011 “Freedom on the Net,” Burma profiles at <http://www.freedomhouse.org/report/freedom-net/2013/burma#Uvk-H4V2Hfc> and http://www.freedomhouse.org/report/freedom-net/2011/burma#Uvk_yYV2Hfc

80 Song, Sophie, “Myanmar Telecom Tender Winners, Ooredoo and Telenor, Finally Confirmed To Receive Official Licenses,” *International Business Times*, January 29, 2014, <http://www.ibtimes.com/myanmar-telecom-tender-winners-ooredoo-telenor-finally-confirmed-receive-official-licenses-1550554>

81 Xinhua, “Myanmar's new Communications Law published,” *Mizzima, News from Myanmar*, Oct 14, 2013, <http://www.mizzima.com/mizzima-news/myanmar/item/10325-myanmar-s-new-communications-law-published>

82 Press Release, “Cisco expands commitment to Myanmar,” Press Release, 3 April 2013, <http://newsroom.cisco.com/press-release-content?articleId=1166597>

SECTION 4.4 Impact on Innovation

Internet openness can also catalyze innovation, a major driver of a country's future economic growth. Data shows that countries that have an open Internet also tend to score better in innovation (see Figure 11 below).

Internet-enabled innovations require an environment that encourages individuals to experiment with new uses of the Internet; in places with severe restrictions, especially where there may be unpleasant repercussions for certain online activities, people are less likely to experiment and thus innovation is less likely to emerge.

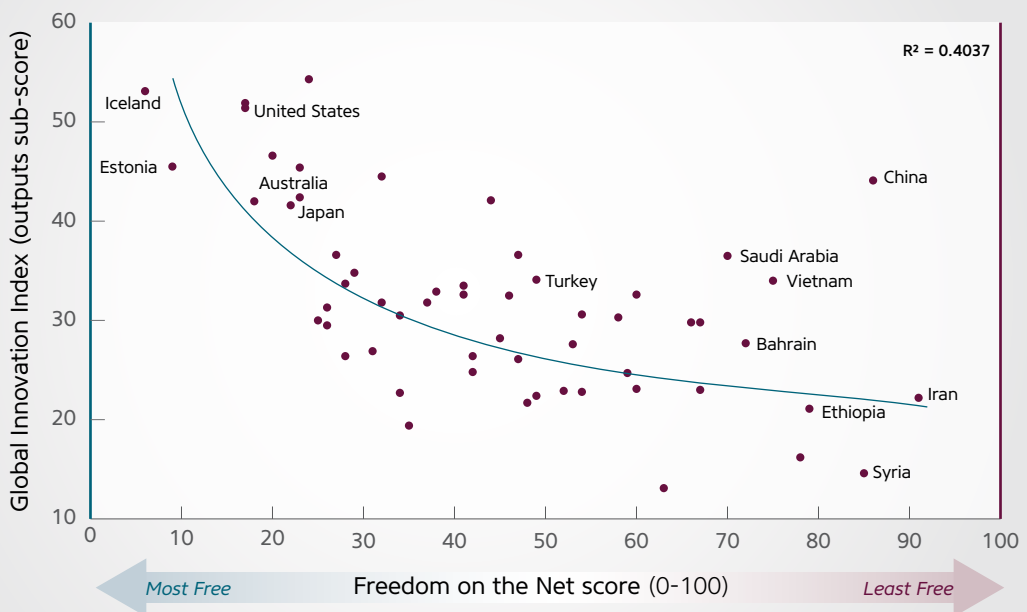
Also, and more broadly, the Internet enables dissemination of knowledge, collaboration, and cross-pollination of ideas among individuals and companies—important drivers of innovation. Internet openness can support these processes. According to Dr. Schildhauer of the Humboldt Institute, whose research focuses directly on Internet-enabled innovation, “We’ve seen that open access to knowledge via open source software and hardware can

be one important driver of innovation.” Enabling collaboration on scientific research, for example—a traditionally closed and highly competitive field—can speed up the process of innovation. But Schildhauer notes that it must be done in a way that encourages people to share and does not put their ideas at risk of being stolen.

But why does innovation matter? History shows that innovation plays a pivotal role in economic development: growth in many successful developing countries has been fueled by innovation. Innovation allows countries to improve productivity and competitiveness and to move up the economic development ladder. Internet openness can support innovation along the different stages of development. In earlier stages, Internet openness can accelerate the discovery and adoption of foreign innovations. At later stages, which rely on R&D-based innovation, Internet openness can facilitate scientific collaboration and create new learning opportunities.

FIGURE 11

Countries with higher scores on the Freedom on the Net index—indicating less openness—also tend to score lower on the Global Innovation Index.



Source: Freedom House, “Freedom on the Net 2013”; The Global Innovation Index 2013; Dalberg analysis.

SECTION 4.5 Social Gains that Enable Long-Term Economic Growth

An open Internet can also help unlock broader social gains. It often takes longer for these benefits to materialize compared to the effects discussed in the previous sections, but factors such as human capital, sociopolitical stability, or quality of institutions have been proven to enable long-term economic growth. This section discusses the different pathways through which Internet openness can also contribute to creating a social environment conducive to sustainable economic growth and prosperity. Given that it is too early to prove these effects and that the existing evidence is limited, the primary goal of this section is to begin to understand these different pathways rather than to prove their impact.

For years, economists have been studying the factors that determine the very large differences observed in economic growth rates around the world. Although many models have been tested, nearly all incorporate some measure of **human capital**. One of the most important benefits of Internet openness may be its ability to contribute to improving a country's educational outcomes and thereby strengthening its human capital. The Internet makes education more accessible, opening up opportunities for distance learning (which in most cases is free); today thousands of libraries, training programs, and open university courses are available online to millions of users across the globe.

Resources like the Khan Academy—a non-profit website that offers high-quality educational videos and comprehensive learning programs for free to anyone anywhere in the world—have emerged as powerful Internet tools that are changing the way students learn and interact. Khan Academy videos are hosted on YouTube, which has enabled the organization to grow rapidly. But access to YouTube has been blocked at various times in many countries, preventing users from accessing these educational videos. Moreover, in places where citizens do not have access to the Internet at all—likely the places where free educational

resources are most needed—or where speeds are too slow, people cannot take advantage of educational resources like the Khan Academy and others.

Open access to content and resources through the Internet can also have an indirect effect on educational outcomes through teachers. According to a survey conducted by the Pew Research Center's Internet & American Life Project, the Internet is already playing a central role in the development of teachers' professional skills in the USA; teachers are ahead of the curve in Internet use when compared to the average population.⁸³

Research has suggested that a free media may be a vital determinant of **sociopolitical stability**. It can enhance political participation, foster citizens' awareness of government policies, and provide an outlet for expressing grievances, which in some cases can contribute to reducing conflict.⁸⁴ Greater stability leads to greater domestic investment; a socially and politically stable economy boosts investors' confidence. By extension, an open Internet that promotes free expression has the potential to contribute to creating a more positive social and political climate in a country.

However, short-term outcomes are often unpredictable, as the recent events of the Arab Spring prove. One could argue that the Internet contributed to increasing instability during the Arab Spring—fueled in many places by organization over the Internet. In the short term, an open Internet can have very different social and political consequences depending on the time and the place; the Internet is still a young technology and it may be too early to fully grasp its long-term sociopolitical effects. But an open Internet enables education, access to information, and the free exchange of ideas—which, experience suggests, can lead to more prosperous, developed, and resilient societies over the long term.

83 Purcell, Kristen, Alan Heaps, Judy Buchanan, and Linda Friedric, "How Teachers Are Using Technology at Home and in Their Classrooms," 28 February 2013.

84 Pal, Sudeshna, Nabamita Dutta, and Sanjukta Roy, "Media Freedom and Socio-Political Instability," *Peace Economics, Peace Science and Public Policy*. Volume 17, Issue 1, March 2011.



ipaidabribe.com: Accountability on the Open Internet

Small-scale corruption—commonly known as “petty” bribery—can have major economic consequences. Swati Ramanathan, founder of ipaidabribe.com, conservatively estimates that these small bribes for public service delivery in India would amount to \$3 billion annually if each urban Indian household were made to pay one bribe each year. While this estimate may seem high, survey data from Transparency International’s Global Corruption Barometer 2013 shows that 54% of Indian respondents had paid at least one bribe to one of eight listed services (e.g., utilities, police, registry and permit, etc.) in the last 12 months. This type of corruption can also have profound social costs: distrust in government, disenchantment with public officials, and limited access to public services for those unable to pay.

Ramanathan founded ipaidabribe.com with her husband in 2010 to allow Indian citizens to report this type of bribery anonymously online. To date, there have been nearly 24,000 reports filed, amounting to close to \$10 million in bribes. Similar sites have emerged in 10 other countries, with 12 more launching in the near future. Attempts to launch similar sites in China have been blocked by the government, exemplifying the importance of freedom and openness online in ensuring that the Internet continues to foster social innovations that promote transparency, reduce corruption, and increase civic engagement.⁸⁵

The central role that government institutions play in long-term economic growth is well accepted among economists; some authors go as far as to claim that institutions are the fundamental cause of differences in economic development. Based on their estimates of the respective contributions of geography, trade, and institutions to income levels around the world, Dani Rodrik et al. argue that “institutions rule.” The quality of institutions, they suggest, has more explanatory power than the other variables, accounting for the majority of variance in incomes.⁸⁶ Internet openness can help a country improve the **quality and effectiveness of its institutions** by creating new accountability mechanisms. The Internet provides an easily accessible platform to publicly condemn government abuses, organize collective action, and monitor progress toward remediation. It can also contribute to strengthening institutions by improving coordination and increasing the pool of “neighbors” from which a country can learn and draw successful experiences.⁸⁷

Similarly, an open Internet promotes transparency and accountability and can help control corruption, which has been negatively linked to the level of investment and economic growth. A country that improves its standing on the corruption index from, say, 6 to 8, will enjoy the benefits of an increase of 4 percentage points of investment, with consequent improvement in employment and economic growth.⁸⁸ Some societies are already taking advantage of the opportunities for transparency that an open Internet offers. For example, in Nigeria, ranked 139 out of 176 countries in Transparency International’s 2012 corruption perceptions index, an online movement called “Transparency Nigeria” has emerged to hold the government accountable for its actions by publicizing the amounts and uses of Nigeria’s public funds.

85 ipaidabribe.com; Interview with Swati Ramanathan, NDI 2013 Democracy Dinner Honoring the Civic Innovators, 10 December 2013, <http://www.youtube.com/watch?v=m3BELQgGWQ0>; Strom, Stephanie, “Web Sites Shine Light on Petty Bribery Worldwide,” 6 March 2012, http://www.nytimes.com/2012/03/07/business/web-sites-shine-light-on-petty-bribery-worldwide.html?pagewanted=all&_r=0

86 Rodrik, D. et al., “Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development,” National Bureau of Economic Research, Working Paper 9305, October 2012.

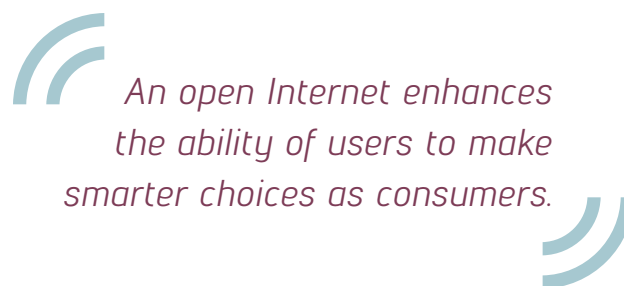
87 “Neighbors” in this case includes not only geographic neighbors, but also countries that have similar religion, culture, industry, and institutions. The theory suggests that countries benefit from their neighbors by replicating successes; the Internet increases the sample of successful examples from which a country can draw; Sheehan, K and A. Young, “It’s a Small World After All: Internet Access and Institutional Quality,” College of Business and Economics, West Virginia University, July 2012.

88 Mauro, Paolo, “Why worry about corruption?” International Monetary Fund, February 1997. This study relies on corruption indexes published by the IRIS Center of the University of Maryland and by The Economist Intelligence Unit, both indexes on a scale from 0 to 10, 0 being the most corrupt and 10 least.

An open Internet can also enable the **formation of social capital**, which research has demonstrated can contribute to the strength and growth of a society.⁸⁹ Social cohesion is critical to productivity—by increasing trust and thereby reducing transaction costs—and to the well-being of communities and their members. Online social networks like Facebook and Google+ allow users to create and sustain personal relationships and bond with other users; they also foster trust and enable the emergence of online communities of like-minded people. Recent studies of online social networks have found that the use of these sites can encourage social capital formation, especially the sort that involves “connections to a larger, heterogeneous network of weak ties that can be conduits for information diffusion.”⁹⁰

Social capital, in turn, can have direct economic effects: community-level trust makes economic transactions more efficient; groups and associations provide access to new information and enable parties to coordinate activities for mutual benefit; and social cohesion reduces the likelihood of individual opportunistic behavior.⁹¹ Studies of social capital formation offline have highlighted significant economic benefits: In rural Tanzania, growth in village-level social capital—as indicated by responses to a large-scale survey—led to an increase in household incomes.⁹² While little work has been done to date on understanding the economic impact of social capital formed through online interactions, we hypothesize the effect to be similar as the underlying mechanism of social cohesion is the same, regardless of the platform for interaction.

Finally, Internet openness creates intangible value and benefits for users that are not captured by traditional economic metrics. An open Internet allows consumers to research products online, finding the best quality items and the best prices available without moving



An open Internet enhances the ability of users to make smarter choices as consumers.

from their homes. An open Internet enhances the ability of users to make smarter choices as consumers. Take, for example, the Thai website Pantip.com. Pantip is a discussion forum largely used by consumers to post reviews of products and services. It emerged as an important platform for consumer protection, providing a space for honest product reviews. But companies began demanding that the site remove negative reviews or complaints about their products, and many have taken the site to court if reviews are not promptly taken down. To avoid these costly legal battles, the owner now feels that he has to remove many legitimate consumer reviews to appease these powerful companies. Because Thailand’s liability framework does not protect the website from its users’ content (for more information, refer back to the box on “The Consequences of Intermediary Liability in Thailand”), Pantip.com is no longer able to provide a safe and reliable forum for consumers.

As these examples suggest, countries that place excessive restrictions on Internet openness—either purposely or inadvertently—run the risk of damaging their long-term economic growth potential and sacrificing their competitiveness. As other countries experience dramatic improvements in education, institutional quality, and the formation of social capital, countries with restrictive Internet policies will find it increasingly difficult to compete economically.

89 “What is Social Capital,” The World Bank, <http://go.worldbank.org/K4LUMW43B0>

90 Steinfeld, C. et al., “Online Social Network Sites and the Concept of Social Capital,” *Frontiers in New Media Research*, New York, Routledge, 2012.

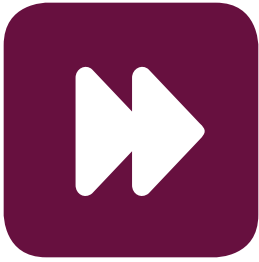
91 “What is Social Capital,” The World Bank, <http://go.worldbank.org/K4LUMW43B0>

92 Narayan and Pritchett (1997) in “What is Social Capital,” The World Bank, <http://go.worldbank.org/K4LUMW43B0>



If we do not invest in bridging the existing knowledge gaps in measurement, the ability to advocate effectively for an open Internet will remain limited.





CHAPTER 5

Implications and Opportunities for Action

Recommendations

This report has explored the ways in which Internet openness can contribute to economic growth and resilience. Expert opinion, descriptive statistical analysis, and the real-life experiences of Internet investors and entrepreneurs overwhelmingly support the assertion that, in terms of economic performance, openness matters.

Nevertheless, the relative paucity of quantitative, cross-country data makes it difficult to disentangle the ways in which specific types of restrictions on Internet openness can impede economic growth. Therefore, a key recommendation arising from our work is the need for better, more granular, and more accurate data. **Academics, advocates, policymakers, and businesses must take action today to start capturing new data and to refine and improve the robustness of existing measures of openness.** The Internet economy is still a relatively new phenomenon. As more data become available, it will be possible to better understand and demonstrate the relationship between openness and the promised benefits of the Internet. For specific recommendations on data collection, see below, “A call to action.”

Our findings also lead to a number of policy recommendations, specifically to help governments make decisions that will enable their countries to achieve the extraordinary economic transformation made possible by the Internet. Today, we sit at a critical juncture for the future of an open Internet. Many countries face important decisions about how to regulate the Internet—especially smaller and less developed countries that can least afford to impede a vital engine of economic growth. However, the window of opportunity to ensure that the Internet has a transformative effect on economies may be closing soon: As online services and Internet-enabled technologies become the global norm, countries that do not embrace Internet openness may find themselves quickly left behind, no longer able to compete in the global marketplace.

Yet countries cannot simply adopt the Internet and expect to reap all its benefits without a proactive approach to openness. All countries should take active steps to expand access to the Internet and ensure that users experience a free and open Internet. In particular, governments should:

- **Reduce regulatory barriers and promote policies that encourage competition, investment, and the creation of new businesses in the ICT sector:** A strong ICT sector is critical to economic health and to the emergence of a digital economy. To fully capture the economic

benefits that a strong ICT sector offers, governments need to remove limitations on investment, protectionist policies that may foster short-term gains but stifle long-term growth, and any other barriers that make it unnecessarily difficult for companies in the ICT sector to operate.

- **Remove online censorship policies and limit liability costs:**

By reducing the legal burdens that often accompany these restrictions and establishing limited liability frameworks for online intermediaries, governments can contain the costs of doing business—making it easier for existing businesses to grow and for entrepreneurs to start new businesses—and lower investors' risk perception of operating in a country. When necessary, content restrictions should be fully transparent to all actors in the sector and all users. They should not restrict basic freedom of expression, and compliance should not require burdensome costs for companies. Governments should promote open dialogues with Internet users and Internet-enabled businesses to learn more about the costs that flow from restrictions and to discuss ways in which obstacles can be removed while simultaneously ensuring that the Internet is a safe environment.

- **Promote the global interoperability and equity of the Internet:**

Ensuring the free flow of data and traffic across national borders and sustaining seamless interaction between all platforms and services are critical steps for enabling the Internet to generate substantial economic value. This requires a decentralized, multi-stakeholder governance model that ensures that the network does not splinter. Governments should also carefully evaluate the costs of any policies that could inhibit interoperability—including data localization and traffic routing laws—before enacting them; as doing so could have significantly negative economic repercussions.

- **Ensure universal and affordable access:**

Before openness can have any effect, countries must provide all citizens with the opportunity to affordably access the Internet. Widespread access is a prerequisite to capturing the benefits of an open Internet. Thus any steps that countries can take towards advancing the goal of universal and affordable access will yield substantial economic benefits.

A call to action

It is not yet possible today to demonstrate a statistically significant causal relationship between Internet openness and economic performance, largely due to the scarcity of data. If we do not invest in bridging the existing knowledge gaps in measurement, the ability to advocate effectively for an open Internet will remain limited.

First, we would urge stakeholders to establish standard and universally measurable indicators of Internet openness. Currently, Freedom House, The OpenNet Initiative, and The World Wide Web Foundation provide their own scores and rankings of countries based on surveys and secondary data. Not only does each organization study a different subset of countries, but each also draws on its own interpretation of Internet openness. The “Internet Openness Metric Project,” a collaboration between the George Washington University, the University College of London, and other organizations, was an important first step in this direction; unfortunately, it was put on hold due to lack of funding. All stakeholders—governments, think tanks, entrepreneurs, and Internet businesses, among others—should support and invest in efforts to define and standardize Internet openness metrics.

Furthermore, we would also encourage relevant stakeholders to gather more granular data on Internet openness that provides not just an overall score, but also assesses in detail the core components of this term. This would allow us to be more specific about the effects that different types of restrictions might have instead of broadly speaking about Internet openness. In order to achieve this objective, a solution must be found to allow governments and businesses to make detailed quantitative data on Internet censorship available while giving due consideration to privacy and legal concerns.

Stronger metrics for regulatory and legal frameworks are also needed. Our research suggests these restrictions are of paramount importance. For example, indexes that assess the ease of starting an Internet business or registering as an Internet service provider in a country would be valuable contributions to this ongoing dialogue.

Finally, additional data on the Internet economy is also needed to better understand the economic effect of Internet openness. Metrics such as the contribution of the Internet sector to the national economy, the number of jobs generated by the Internet economy, or the number of new Internet businesses should be systematically measured all around the world. Of particular interest to advancing the conversation on Internet openness would be data on operating costs of Internet businesses, Internet-enabled innovation, the density of Internet start-ups, and investment levels for Internet businesses. Robust and consistent measures of network speed are also necessary to understand the environment in which

businesses, organizations, and individuals use and benefit from the Internet. Greater investment of manpower and resources in data collection is needed especially in emerging markets where data is particularly sparse.

Overall, we must expand our dataset on Internet openness and the Internet economy if we are to build a robust case for the economic impact of Internet openness. This is still a nascent field, but if we can improve the breadth and depth of the available data, we believe the case for an open Internet can be made clearer and even more compelling.



Additional Resources

Included below is a list of useful resources and links on the topics of Internet openness and the economic value of the Internet. These references are not an exhaustive list of existing documents, but rather a selection of those we believe to be most relevant, including many that have been cited throughout this report.

- "The Affordability Report 2013," Alliance for Affordable Internet, http://a4ai.org/wp-content/uploads/2014/01/Affordability-Report-2013_Final-2.pdf
- Castro, Daniel, "How Much Will PRISM Cost the U.S. Cloud Computing Industry?," The Information Technology and Innovation Foundation, August 2013, <http://www2.itif.org/2013-cloud-computing-costs.pdf>
- Castro, Daniel, "The False Promise of Data Nationalism," The Information Technology and Innovation Foundation, December 2013, <http://www2.itif.org/2013-false-promise-data-nationalism.pdf>
- Cerf, Vinton G., Patrick S. Ryan, and Max Senges, "Internet Governance is our Shared Responsibility," forthcoming in *I/S: A Journal of Law and Policy for the Information Society*, 2014, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2309772#
- Cerf, Vinton G. (Chair) et al., "ICANN's Role in the Internet Governance Ecosystem," Report of the ICANN Strategy Panel, February 20, 2014, <https://www.icann.org/en/about/planning/strategic-engagement/governance-ecosystem>
- "Freedom on the Net," Freedom House, <http://www.freedomhouse.org/report-types/freedom-net>
- "The Global Information Technology Report 2013," World Economic Forum, <http://www.weforum.org/reports/global-information-technology-report-2013>
- "ICT for Economic Growth: A Dynamic Ecosystem Driving The Global Recovery," World Economic Forum, 2009, http://www3.weforum.org/docs/WEF_IT_DynamicEcosystem_Report_2009.pdf
- "The Internet Openness Metric Project," GWU, http://www.gwu.edu/~iiep/governance/internet_openness_metric_project/Internet_Openness_Metric_Project.pdf
- Manyika, James, Armando Cabral, Lohini Moodley, Suraj Moraje, Safroadu Yeboah-Amankwah, Michael Chui, and Jerry Anthonyrajah, "Lions go digital: The Internet's transformative potential in Africa," Copenhagen Economics, Prepared for EDiMA, April 2013, http://www.mckinsey.com/insights/high_tech_telecoms_internet/lions_go_digital_the_internets_transformative_potential_in_africa
- Nielsen, Katrine E., Bruno Basalisco, and Martin H. Thelle, "The impact of online intermediaries on the EU economy," The McKinsey Global Institute, November 2013, <http://www.europarl.europa.eu/document/activities/cont/201305/20130529ATT66947/20130529ATT66947EN.pdf>
- "OpenNet Initiative," Citizen Lab at the Munk School of Global Affairs at University of Toronto, the Berkman Center for Internet & Society at Harvard University, and the SecDev Group, <https://opennet.net/>
- Reed, David P., Jennifer Haroon, and Patrick S. Ryan, "Technologies and Policies to Connect the Next 5 Billion," (January 13, 2014). *Berkeley Technology Law Journal*, Vol. 29, 2014, Forthcoming, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2378684
- "Scaling Opportunity: Information and Communications Technology for Social Inclusion," World Economic Forum, 2010, http://www3.weforum.org/docs/WEF_IT_ScalingICT_Report_2010.pdf

Serageldin, Ismail, "Don't Mess With (Im)perfection," February 2014, https://docs.google.com/document/d/1kreg_ZnXIYpl8qG3X3UThUcdynSBnu42pmiYr2YDfBE/edit

Steinfeld, C. et al., "Online Social Network Sites and the Concept of Social Capital," *Frontiers in New Media Research*, New York: Routledge, 2012, https://www.msu.edu/~steinfie/Steinfeld_Internetat40.pdf

"UK Broadband Impact Study—Impact Report," SQW in partnership with Cambridge Econometrics, November 2013, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/257006/UK_Broadband_Impact_Study_-_Impact_Report_-_Nov_2013_-_Final.pdf

"The Value of Openness for a Sustainable Internet," *Internet Society*, October 2013 (preliminary version), https://www.internetsociety.org/sites/default/files/Internet_Society_openness_and_sustainability-en.pdf

"Web Index," World Wide Web Foundation, <http://thewebindex.org/>

Zwillenberg, Paul, Dominic Field, and David Dean, "Greasing the Wheels of the Internet Economy," *The Boston Consulting Group*, January 2014, <http://www.icann.org/en/news/presentations/bcg-internet-economy-27jan14-en.pdf>





Dalberg

www.dalberg.com

BOGOTÁ | COPENHAGEN | DAKAR | GENEVA | JOHANNESBURG | LONDON | MUMBAI
NAIROBI | NEW YORK | SAN FRANCISCO | SINGAPORE | WASHINGTON DC