



Research Publication No. 2005  
October 2005

# The Internet and Democracy: Global Catalyst or Democratic Dud?

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## THE INTERNET AND DEMOCRACY: GLOBAL CATALYST OR DEMOCRATIC DUD?

Michael L. Best\*  
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### ABSTRACT

In this study we explore the global effect of the Internet on democracy over the period of 1992 to 2002 by observing the relationships between measures related to democracy and Internet prevalence. Our results show a significant correlation between Internet penetration (measured as the estimated number of Internet users per 1,000 people) and a common indicator of a nation's level of democratization provided by the Freedom House. With a multivariate linear regression model, we show that this correlation maintains even when we control for a nation's geographic region, economic level, and social development. Our findings suggest that a 25% increase in Internet penetration links to a one point jump on the 14 point Freedom House democracy index while still accounting for regional and socio-economic development. Indeed, we find that Internet penetration explains more variation in the level of democratic development within a country than does literacy rates and some of the regional categories.

We employ Lessig's framework of regulation to examine the cause of this Internet-democracy correlation. Lessig defines four classes of regulators, forces that control and define systems such as the Internet. They are markets, architectures, norms, and laws. We argue that a democratic regulator is a force that serves to enhance civil or political liberties. And we argue by example that there are democratic (and, indeed, anti-democratic) regulators which control aspects of cyberspace.

Keywords: Internet, Democratization, Regulability, Democratic Regulators.

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## Introduction

Since the globalization of the Internet, researchers have puzzled as to its effects on political institutions and their operation. In particular, researchers and practitioners alike have asked if the Internet acts as a positive force in the development of democratic systems and ideals. Often the question has been asked with great expectations for an affirmative answer. Some of this optimism might be due to the correlations found in the diffusion of earlier communication networks (e.g. voice telephony) and democracy (Sun & Barnett, 1994). Another source of the optimism might be, simply put, due to the democratic vision and architectures of the Internet itself (Barlow, 1996).

However, in terms of a rigorous establishment of the democratizing effects of the Internet, the jury is still out and there are a number of reasons why this is so. For one, the sheer quantity of potential variables involved complicates everything. Government regime type, degree of Internet diffusion, and social roles of the Internet are just a few of the variables that may play a role in how the Internet affects democracy. Furthermore, the definition and measurement of many of these variables can be contentious. For instance, the boundaries of the term “democracy”, and how it is measured, is subject to lively debate.

Despite these analytic hardships, the research community continues to explore how the Internet and democracy interrelate. And while debate continues, there is no doubt that rigorous and data-driven analysis of this relationship will benefit scholars and policymakers alike. Indeed, the majority of earlier studies of the effects of the Internet on democracy are case studies and/or largely theoretical analyses. Few previous studies approach the issue of Internet and democracy with data-driven analysis. There are two additional reasons that can explain this: 1) the limited Internet data, and 2) the limited Internet presence especially in the very nations (those with recently dynamic levels of democracy) that are most relevant to such a study.

These limitations have been diminishing however. From the 90s, the Internet has exploded globally. In addition, Internet diffusion data is becoming increasingly available. The presence of this new data allows us to statistically explore the relationship of the Internet with democracy with greater accuracy than ever before.

In this study we explore the global effect of the Internet on democracy over the period of 1992 to 2002 by observing relationships between measures related to democracy and an Internet prevalence variable. We study the relationship of a nation’s GDP per capita (PPP) and adult literacy along with measures of the nation’s level of civil liberties and political rights. To represent Internet penetration we consider the number of Internet users per 1,000 people. Finally, we also utilize an aggregate measurement of a nation’s level of democratization.

We employ several methods of analysis to gauge how these various variables relate. The first part of our analysis involves bivariate distributions and correlations. Through these methods we can ascertain how well our “democracy-affecting” variables really relate to democracy in the first place.

The second part of our analysis utilizes a simple linear regression model. The democracy-causing variables act as the predictors in the model while the democracy index acts as the dependent

variable. We examine changes in the variables' coefficients, both independently and in relation to each other, to determine degrees of relatedness.

## **Related Works**

In a 1997 RAND paper, Christopher Kedzie (1997) argues that the collective characteristics (multidirectional capability, low cost, etc.) of the Internet help further democracy. To test his hypothesis, he uses linear regressions to compare the strength of traditional predictors of democracy including economic development and education, human development and health, ethnicity and culture, as well as indicators that represent pre-Internet ICTs, and studies them against the strength of Internet prevalence. His analyses, which include data from 144 nations, suggest that the Internet is a stronger predictor of democracy than the other more traditional predictors. This research is corroborated by Richards (2002) in his exploration of physical integrity rights and the Internet.

Kedzie's results may or may not be indicative of a true relationship between the Internet and democracy. His study makes use of data from 1993, a time when the Internet was only beginning to build international prevalence (ITU, 2004). Moreover, he draws rather broad conclusions based on a simple longitudinal analysis (1993 variable levels minus 1983 variable levels).

In any case, not all analyses yield such positive results. Scheufele and Nisbet's 2002 study gives statistical evidence that the Internet does not increase democracy in America. Through linear regression, they find that mass media broadcasting (e.g. television, newspapers) plays a far more effective role than the Internet in promoting democratic citizenship. This is consistent with findings Putnam (2000) made in his landmark study *Bowling Alone*. To explain their results, Scheufele and Nisbet argue that people often find political news to be less interesting than other types of news. This preference implies that news-seeking Internet users will view only a subset of the political news that, for example, news-seeking television users are obliged to view. Consequentially, Internet news-seekers become disconnected with American politics, and American democracy suffers.

Scheufele and Nisbet caution against overextending the results of their study as there is not yet an established body of quantitative research to build on and compare theirs to. For example, it could be that Internet users are more attracted to forms of democratic knowledge and participation which were not covered in their study's questionnaire.

In addition to these quantitative studies there are also a great number of qualitative studies that tackle the Internet-democracy relationship. Pippa Norris (2000) provides a fairly comprehensive list of them.

## **Description of data and methods**

The variables

We employ several variables in this study to try to quantitatively assess the impact of the Internet on a nation's level of democratization. The independent variables consist of measures often associated with levels of democracy, in particular a nation's GDP and levels of adult literacy. In addition, Internet prevalence measured as the number of Internet users per 1,000 people serves as an independent variable. The data for these indicators comes from the World Bank Development Indicators database (World Bank, 2004). The sole dependent variable was provided by Freedom House (2004b). It attempts to quantify a nation's level of democratization by aggregating indicators of that nation's level of civil and political liberties.

#### Principle independent variables

We represent the level of Internet penetration by using the number of Internet users per 1,000 people, measured nationally. This number is approximated by first determining the exact number of Internet subscribers within a nation and then trying to account for the level of sharing amongst accounts (for instance, via a cyber café or community center or amongst friends and family members).

We want to control for many of the factors which traditionally are associated with levels of democratization – in particular those related to social and economic development levels. A nation's level of economic development has long been known as a strong predictor of democracy (Lipset, 1959). In addition, Hadenius (1992) has shown that literacy can be an even better predictor of democracy than economic welfare. Of course, while strong correlations are evident, the direction of causal influence of these variables on democracy has been debated (Olson, 1993).

To represent economic development we use the GDP per capita PPP in constant 1995 dollars. For literacy we consider the percentage of adults (age 15 and older) who are literate. Both indicators come from the World Bank Development Indicators database (2004).

#### Dependent variable

To represent national levels of democratization we employ the Freedom House (2004b) scores for political rights and civil liberties. Freedom House measures national political rights and civil liberties by tabulating ordinal sets of survey questions. The resulting political rights and civil liberties scores range from 1 to 7, 1 being the highest score. Our index is computed by summing these two scores and inverting the result; thus our index runs from 2 to 14 with 14 as the highest level of democratization. Kedzie (1997) reviews a number of scholarly publications that gauge democracy in the same way.

#### Methods

To determine how the Internet affects democracy, we study the relationship of Internet prevalence to our indicator of democratization (and controlling for economic and social development) using ordinary least squares (OLS) regression. OLS regression is commonly employed to examine cause and effect relationships in the social sciences. Kedzie (1997) notes that “[s]tudies of democracy's correlates have relied extensively on the tools of linear regression”.

We find that an important explanatory variable for level of democratization (and many other factors), in addition to level of social and economic development, is a nation's geographic region. We have grouped nations into six different regions. By demarcating our data into these regions we can get some insight on how global results compare to regional results and how geographic region helps to explain levels of development.

Kedzie (1997) split the nations in his study up according to general regional categories and we employ the same approach. His categories are as follows: 'Western Europe' includes nations that have a dominantly Western European heritage. 'Middle East' includes nations in and around the Middle East that are predominantly Muslim. 'Africa' includes Africa minus the North African Muslim states included in the 'Middle East' category. 'Asia' includes the East Asian states, India, and the island nations of the Southeast Pacific. 'Latin America' includes all of Latin America except Cuba. Finally, 'Eurasia' includes the former Warsaw Pact states and the Balkan states, plus Cuba and North Korea.

While our raw data set contains records from 188 nations, not every nation is represented by a full eleven years of records (1992-2002). This is especially the case for nations in the early 90s and for the lower income nations. For example, Afghanistan has Internet usage data only for the year 2002.

## Results

There are three parts to this section. First, to get some footing on the principle independent variables, we overview their annual trends around the world from 1992 to 2002. Next, we begin the process of analyzing the relationships between democracy and the independent variables. Here, we use bivariate distributions and bivariate correlations to try to reveal interesting trends and relations.

Finally, we study a multi-variate linear regression model to estimate how much the variance in democratization across nations can be accounted for by the Internet when controlling for the socioeconomic and cultural/regional factors.

Summary of indicators, 1992 to 2002

In Figures 1-3 we overview the changes in Internet use, GDP, and literacy levels broken out by region from 1992 to 2002.

Figure 1 shows that from 1992 to 2002 the Internet proliferated within every regional group. Western Europe consistently held the highest level of Internet users per capita, while Africa consistently held the lowest. Explaining why one cultural region might have more Internet users than another can be a complicated matter. Wolcott, Press, and coauthors (2001) suggest a number of factors including perceived value of the Internet, ease of use, cost and affordability of access, geography, and regulatory framework.

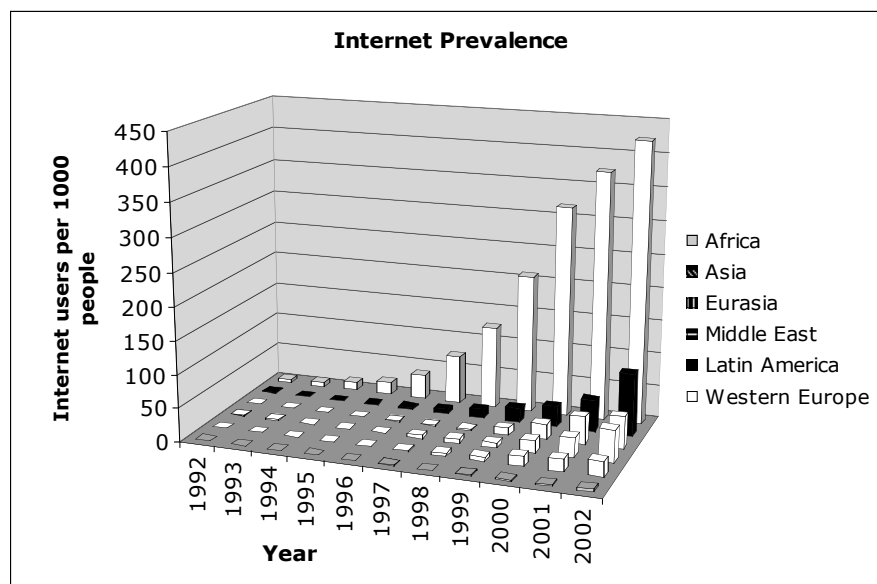


Figure 1. Internet penetration from 1992 to 2002 plotted by region.



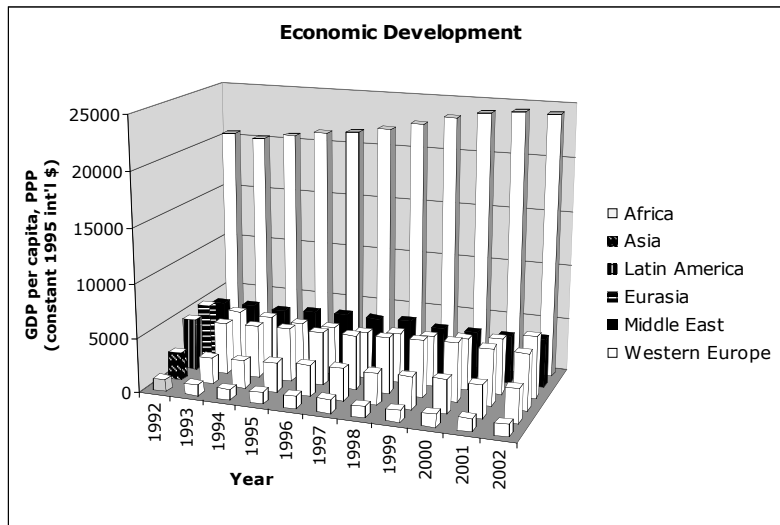


Figure 2. GDP per capita (PPP) from 1992 to 2002 plotted by region.

Figure 2 depicts GDP per capita during our period of study. From 1992 to 2002, Western Europe consistently held the strongest economic position while Africa consistently held the weakest. Also evident is significant economic disparity between Western Europe and all the other regions. Despite this disparity, the economic level of these other nation-groups does improve over the eleven year period.

Figure 3 shows levels of adult literacy from 1992 to 2002. We can see that literacy levels consistently improved in Africa and the Middle East, while for the rest of the regions the rates remained fairly constant. All of Asia, Eurasia, Latin America and Western Europe maintain literacy rates around or above the 80% mark. Eurasia maintained the most literate population of any nation-group.

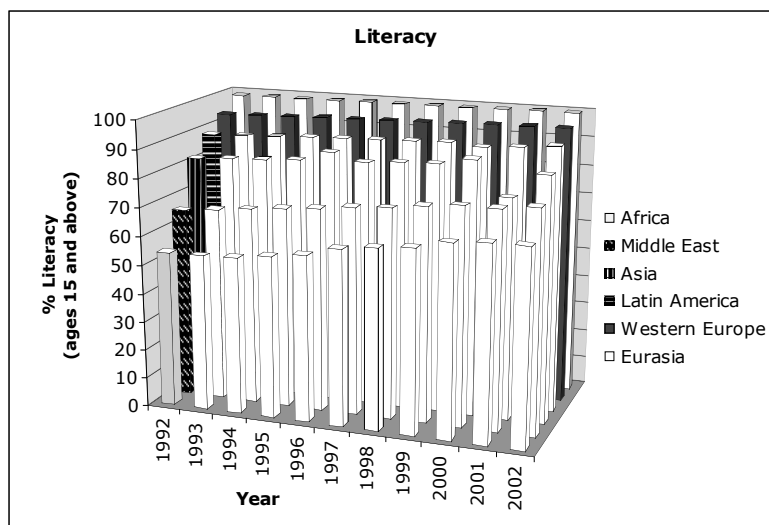
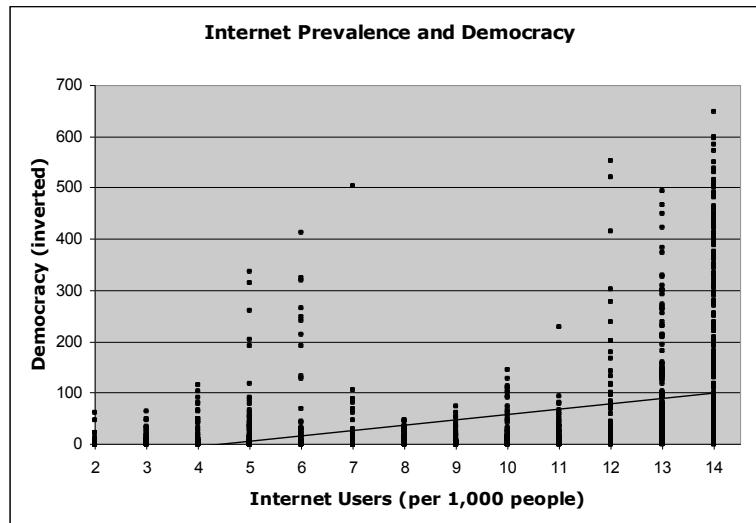


Figure 3. Adult literacy from 1992 to 2002 plotted by region.

## Bivariate analysis

We now study how the independent variables relate to democracy and, in particular, how Internet prevalence helps to explain variance in democracy. Figure 4 shows each country's democracy score plotted against its level of Internet penetration. The global correlation between these two variables is evident (Pearson's  $r = 0.39$ ,  $p < .0001$ ). We also plot the linear fit for these two variables (Internet users (per 1,000 people) =  $-47.08067 + 10.464863$  Democracy (inverted),  $R^2 = 0.15$ ).



*Figure 4.* Correlation (and linear fit) between democracy variable and Internet users per 1000 people.

This analysis shows that there was a statistically powerful correlation between Internet penetration and level of democratization. To continue, we look at these correlations over time for all of our principle independent variables.

Figure 5 shows how democracy correlates to the three independent variables from 1992 to 2002 across all regions. We can see that economic prevalence consistently holds the strongest correlation with democracy, followed by Internet prevalence and literacy. The more salient observation to make, however, is that while economic prevalence and literacy maintain relatively constant correlations with democracy, the correlation for Internet prevalence gradually strengthens, almost to the same level as economic prevalence. This steady increase in the strength of correlation is suggestive of a growing bond between Internet prevalence and democracy. This growth in correlation strength might be expected given the positive network externalities, the “network effect”, that is a salient property of the Internet.

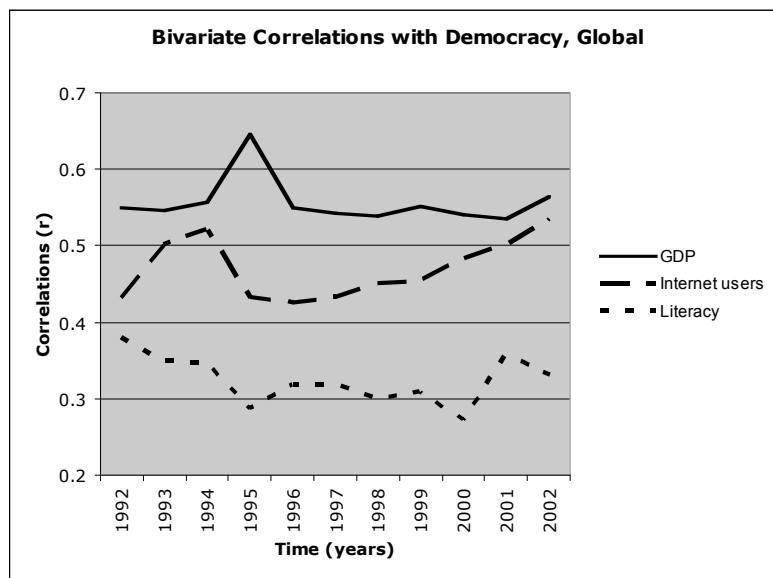


Figure 5. Correlation of GDP, Internet users, and literacy levels with democracy.  $p < 0.05$  for all points on the graph.

Figures 6-8 give us a disaggregated picture of the correlations found in Figure 5. They serve two purposes. First, they show us the strength of the regional correlations for each variable against democracy. Second, they show us which regions' democracy scores have had significant relationships with the independent variables. We can tell when this happens based on whether the region is included in a figure or not. In other words, when you see a region is included in one of the figures, this implies that democracy has a statistically significant ( $p < 0.05$ ) relationship with that figure's variable (e.g. GDP) between 1992 and 2002. So, for instance, the presence of Africa, Eurasia, and Latin America in Figure 7 (the GDP/democracy figure) implies that GDP is statistically related to democracy for all these regions, whereas in Western Europe, Asia, and the Middle East, democracy has no significant correlation with GDP.

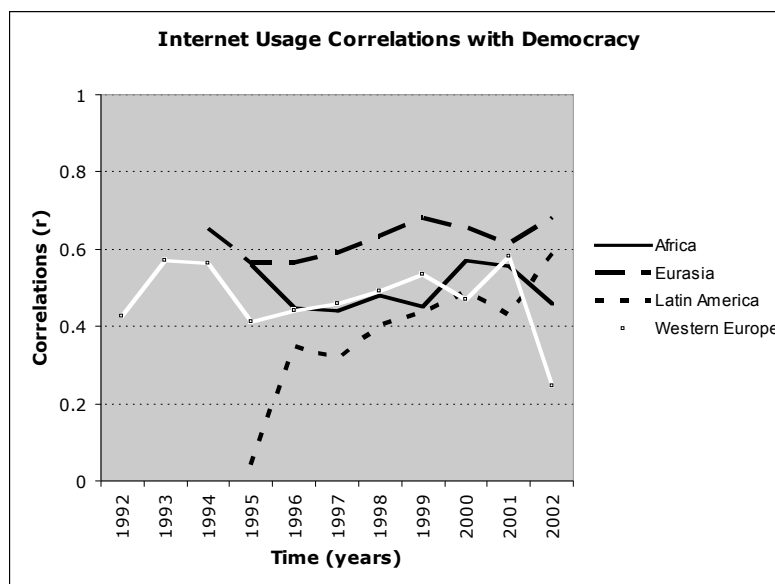
From these disaggregated figures it is apparent that the Internet has had more statistically relevant relationships with democracy from around the world than have the other two variables. In the Internet/democracy figure, 4 of 6 regions are statistically significant while only 3 of 6 regions are in the GDP/democracy figure, and just 1 of 6 in the literacy/democracy figure. There are several other things to take note of in Figures 6-8. For one, the correlations involving economic prevalence and literacy from Figures 7 and 8 remain relatively constant between 1992 and 2002. This is not surprising given the lack of change in GDP and literacy rates around the world (see Figures 2 and 3). In contrast, from Figure 6 we can see the correlations between Internet prevalence and democracy steadily strengthening between 1996 to 2002.

With regard to specific regions, Figures 6 and 7 reveal that Eurasian democracy has stronger correlations to GDP ( $r = 0.7$ ) and Internet prevalence ( $r = 0.6$ ) than any other region. And from Figure 8 we can see that literacy only correlates significantly to democracy in Latin America. Since literacy only has a statistically significant relationship to democracy in one out of the six regions, this suggests that literacy is not a very good predictor of democracy in general. Figure 5

affirms this; it situates literacy as the weakest correlate of the three independent variables. As for why Latin America is the only region where literacy and democracy relate (and especially at such high a rate:  $r = \sim 0.7$ ), the issue is not really addressed in the literature, so we are hard pressed to offer an explanation.

Finally, we should add that none of the independent variables managed to correlate significantly with democracy in the Asia and Middle East regions. Therefore, it is highly unlikely that they have had any endogenous democratic influence in those places. This lends credit to the theory that the Internet may only affect democracy in certain situations. Put plainly, this leaves us with an extremely important question: Has the Internet served as an agent for democratic change in some parts of the world (e.g. Africa) but not in others (e.g. the Middle East)?

**Note:** If a region is missing in Figures 6-8, it is because most of its correlations were insignificant.  $p < 0.05$  for all points on the graphs.



*Figure 6.* Internet usage correlates with democracy. Only the 1998-2002 correlations are statistically significant for Latin America.

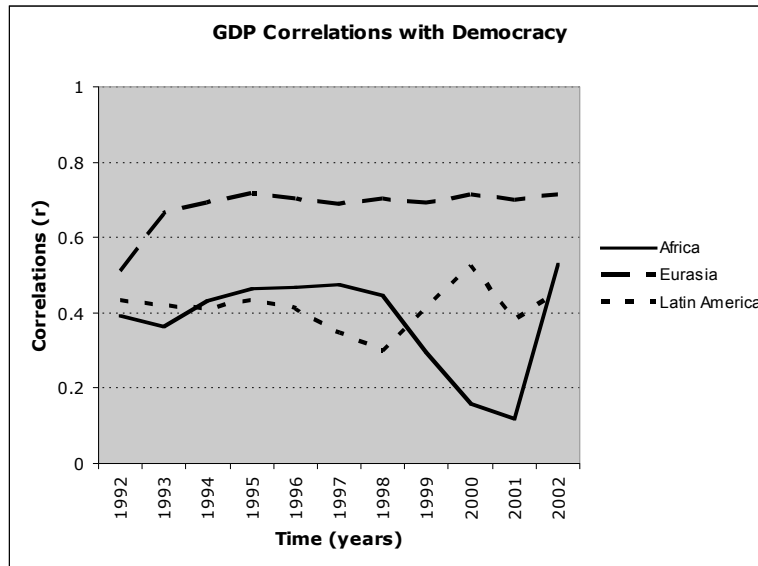


Figure 7. GDP correlates with democracy. Correlation for Africa and Latin America is mostly significant ( $p < 0.05$ ).

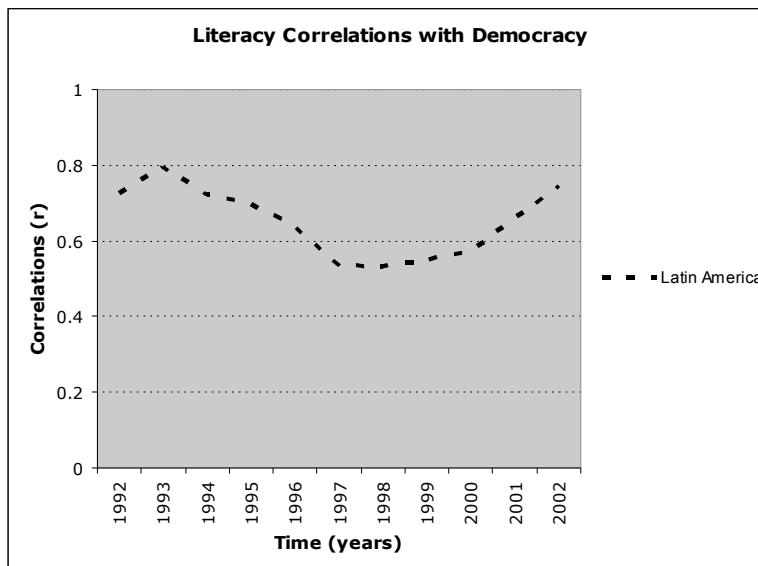


Figure 8. Literacy correlates with democracy. Only Latin America has statistically significant correlations ( $p < 0.05$ ).

Multivariate relationships between the independent variables and democracy

We now wish to study the way that Internet penetration relates to democratization while controlling for our major socio-economic and regional affects. We study this relationship through a multivariate OLS linear regression model. Our model is of the form:  

$$democracy = \beta_0 + \beta_1 * Internet\ users + \beta_2 * GDP\ per\ capita + \beta_3 * literacy\ rate + \beta_4 * region + \epsilon$$

Here each of our model's variables are the same indicators as used in the previous bivariate analyses. The Beta's and standardized Beta's are given in Table 1. All variables enjoy statistical significance except for literacy rate and a dummy variable indicating region. Note that this model

explains half of all variation in level of democracy across 864 data points representing 11 years and 188 countries.

Table 1

*Results from Ordinary Least Squared Regression*

					F = 103.84 Prop > F < 0.0001 R <sup>2</sup> = 0.49
Term	Scaled Estimate	Coefficient	Std Error	t Ratio	* p < 0.05, ** p < 0.01
Intercept	8.4534776	7.0637059	0.482703	14.63	**
Internet users	0.7045635	0.0037502	0.002115	1.77	*
Africa	-0.154632	-0.154632	0.213116	-0.73	
Asia	-0.760013	-0.760013	0.220497	-3.45	**
Eurasia	0.7929667	0.7929667	0.23112	3.43	**
Latin America	2.1359163	2.1359163	0.182013	11.73	**
Middle East	-4.095187	-4.095187	0.221621	-18.48	**
Western Europe	2.0809491	0			**
Literacy rate	0.1062366	0.0024422	0.006504	0.38	
GDP per capita	2.3282156	0.0002028	0.00003	6.75	**

From Table 1 we see that GDP per capita has the strongest scaled beta corresponding to the most effect within the model on level of democratization. Next we find that the dummy variables for Western Europe and Eurasia also have strong scaled coefficients. But the next biggest effect, still with a considerable estimated coefficient, is Internet users. We note that all of these variables enjoy statistical significance.

This model suggests that, controlling for region and levels of socioeconomic development, an increase of 250 Internet users per 1,000 population corresponds to an increase in one level of democratization.

## Discussion and theoretical framework

The results section reveals a number of things, some of which help confirm existing theories of Internet prevalence and democracy. For example, Corrales (2002) says that the Internet tends to have a greater democratic impact on regime types that are formally democratic but defective in reality, such as those found in Latin America. Indeed our results show some evidence of this. Our results also show evidence that Kalathil and Boas (2003) are right to downplay the democratic impact of the Internet in the Middle East and Asia; our statistics show little evidence that the Internet has made a democratic difference in those nations.

Unfortunately, it is hard to formulate an *all-encompassing* theory to explain the Internet's effects on democracy, especially with such an array of differing regional results. It is probably the case that a large number of variables play into how the Internet affects one nation at one time.

That said, we propose to make use of an existing theoretical framework, augmented somewhat to our ends, in order to explore how (or how not) the Internet might affect levels of democratization. Lawrence Lessig (1999) has proposed a theoretical framework of "regulability", which has shown itself to be a powerful and important construction for describing methods of control and impact of the Internet. Below, we overview Lessig's argument and then suggest that there might be "democratic regulators" – constraints or affordances on the use of the Internet that might act as agents for (or against) political and civil liberties.

Lessig's framework of regulation

Lessig's framework describes four forces that regulate or constrain an object (e.g. the Internet). They are: law, the market, norms, and architecture (Figure 9). Each of these regulators has the following unique properties:

1. Law constrains by defining a command that, if broken, threatens punishment. Law is imposed by a state.
2. Markets regulate through price. The market regulator is immediate – it is characterized by a direct monetary exchange.
3. A social norm regulates through a stigma that a community (not a state) imposes. Deviation from a norm makes you socially abnormal, which can have negative affects, such as alienation from a community.
4. Architecture regulates through the physical burden it imposes. It is imposed immediately and automatically by its very design.

To exemplify this framework, let's look at how these four types of regulators can prevent person X from robbing a particular bank:

1. The threat of spending time in jail can prevent X from robbing the bank (a *law* regulation).
2. X may not have the sufficient funds to buy the explosives and weapons necessary to rob the bank (a *market* regulation).

3. The threat that X's friends might ostracize him if they find out that he robbed the bank might prevent him from robbing (a *social* regulation).
4. Finally, the bank's physical security system (e.g. a locked vault) might make it impossible for X to rob the bank (an *architectural* regulation).

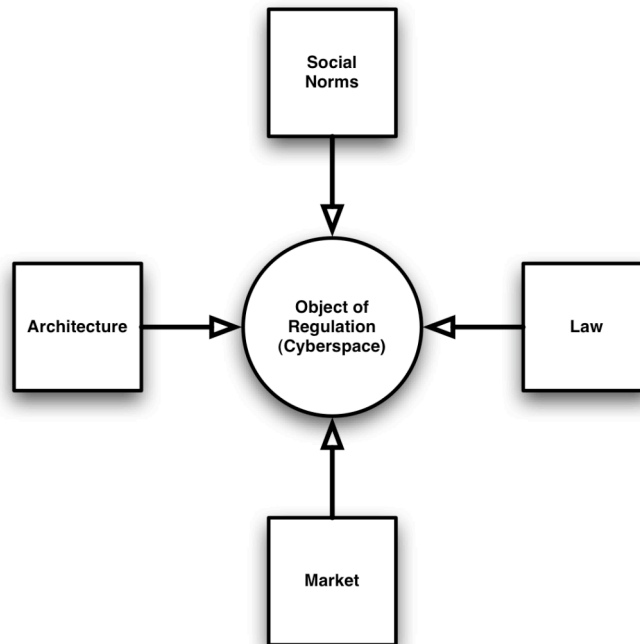


Figure 9. Lessig's framework for regulation.

### Democratic regulators

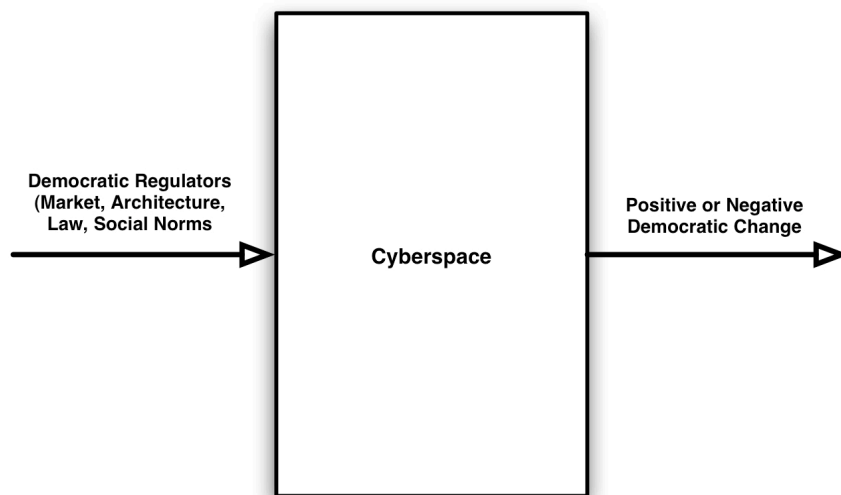
A regulator is democratic if it increases civil rights or political liberties. "Civil liberties include the freedom to develop opinions, institutions, and personal autonomy without interference from the state", which implies the freedom of expression and belief; freedom to associate and organize; rule of law; and personal autonomy and individual rights can be considered as civil liberties (2004a). Political rights "enable people to participate freely in the political process", and are based on fair electoral process, political pluralism and participation, and functioning of government.

For example, Universal Service Obligations are laws that regulate operators. They are democratic regulators because they serve to increase the reach of the network to under-served communities. And this we believe increases civil and political liberties.

In addition to identifying democratic regulators, we also note the effects that anti-democratic regulators can have. An anti-democratic regulator is the opposite of a democratic regulator - it removes civil liberties or political rights. We include anti-democratic regulators because there are two faces to the issue of Internet-based democratization. It is important to consider both sides fairly.



Again, it is our hope here that this concept of democratic regulators might act as an explanatory framework as we try to understand qualitatively the role of the Internet in processes of democratization.



*Figure 10.* Democratic regulators increase civil or political liberties.

For each of Lessig’s categories of regulation, we identify one or two prominent democratic or anti-democratic regulators of the Internet. We avoid trying to map associations between these regulators in different categories, even if such associations exist. This includes feedback associations. If we included these mappings, we would increase the complexity of our analysis enormously. As Lessig says, “The interaction among these four [forms of regulation] is hard to describe.” (1999, p. 88). As such, we focus on the direct causal relationships between Internet regulation and democracy.

#### Architectural regulators: Code

##### How it regulates

We explore two kinds of code regulators: encryption software and filtration software.

Encryption works by obfuscating messages so that third parties cannot interpret them. It can also ensure a message’s authenticity and integrity. Some of the more prominent technology include SSL and PGP, which have been around since the mid 90s.

Filtration prevents people from accessing information that would otherwise be available to them. It is well known that some governments use filtration to block access to politically sensitive web sites (Kalathil & Boas, 2003).

### Encryption

It is clear that encryption can have a powerful positive effect on the process of democratization by allowing, for instance, dissident groups to organize secretly and ensure their privacy. But, as Lessig points out, cryptography is “Janus-faced.... it will stop crimes and it will create new crimes. It will undermine dictatorships and it will drive them to new excesses.”

While we are not currently aware of any case studies that explore the role of encryption in democracy movements encryption likely plays a part in keeping the communications of non-governmental organizations (NGOs) and transnational advocacy networks (TANs) private (Goodman & Drozdova, 1999). As such, encryption can prevent abusive governments from filtering NGO and TAN communications for political content. By sharing abuses with the rest of the world, governments can be pressured to reform (Selian 2002). There are numerous examples of international organizations that do this, including Amnesty International, Human Rights Watch, and the Environmental Investigation Agency.

### Filtration software

Filtration software can have negative implications for civil society - filtering systems are an architecture that can make it difficult for citizens to access media concerning political ideas, and can prevent people from associating with certain groups. For example, Zittrain and Edelman (2003) found that China actively blocks a myriad of websites associated with politically threatening material, such as civil society and political websites. It does so largely by filtering for server IP addresses and URL keywords. This has the effect of preventing foreign-based civil society organizations & advocates from becoming a political force. For example, the Chinese government prevents the dissemination of Falun Gong information by blocking Falun Gong websites whose servers are located outside of China (Zittrain & Edelman, 2003, p. 9). Decreased access to information concerning organizations such as Falun Gong can keep people from organizing, equating to a loss in civil liberties. It is not just China that does this. Other nations like Singapore, Vietnam, Saudi Arabia, Bahrain, Yemen, and the United Arab Emirates filter Internet content (Kalathil & Boas, 2003; Chalaby, 2000).

### Market-based regulators: Internet access price

#### How it regulates

We suggest examples where the market regulator of Internet access price can lead to both democratic and anti-democratic effects. This is under the assumption that increased Internet access leads to a greater and broader population of Internet users, which in turn can lead to more civil liberties. In line with this reasoning, we also assume that limited access has the opposite effect.

#### Internet access price

For most nations, access price has steadily decreased around the world (ITU, 2004). Increased Internet availability suggests that Internet access is creeping down the global social strata (as slow as this might be). A democratic implication of this is that more citizens gain access to a

communications medium that holds the potential to educate, open up personal autonomy, and even foster communal debate (through email, web forums, etc), which is indicative of civil liberties. And the fact that the Internet is a multi-dimensional, non-centralized, and cheap means of communication only amplifies its capacity to breed civil liberties in this regard (Kedzie, 1997; Boas 2000, pp. 57-58).

The inexpensiveness of Internet communications better allows NGOs and TANs to organize and communicate, both in and out of authoritarian nations. Thus, “NGOs have been able to cut costs and improve the effectiveness and scale of their communications, planning, other logistics, and information gathering, storage, processing, exchange, and protection” (Goodman & Drezdova, 1999).

A result of this is that NGOs can better expose and pressure abusive governments. For example, the International Tibet Independence Movement has credited the Internet’s cost-effectiveness for making their operations more efficient (Goodman & Drezdova, 1999). According to the Movement’s president, it greatly helped them organize and prepare for their 1996 “March for Tibet’s Independence”, and even allowed them to air the march online. Hundreds of thousands of people accessed the website throughout the event.

But access price does not always fall over time for every nation. It is possible that some governments use price controls to keep certain people away from the Internet. Chalaby suggests that the Chinese government does this (2000, p. 25) and Kalathil and Boas suggest that the Burmese government does it too (2003, p. 93). If true, then access price can prevent citizens from the civil liberties and political rights that they might otherwise gain if they could afford access, such as those listed in the previous paragraph.

#### Law-based regulators: State laws How it regulates

Laws can affect the Internet in ways that both hinder and encourage democracy in authoritarian nations. Free speech laws such as the American First Amendment enable NGOs and TANs (including dissident exiles) to harness the power of the Internet to pressure for reform. Other kinds of laws can do the opposite, and clamp down on certain forms of free speech such as political dissent.

#### State laws

There are a host of NGOs and TANs around the world that depend on freedom of speech laws so that they can pursue their political causes. This is important in the context of civil liberties and political rights because these groups have considerable power in exposing illegitimate government regimes, possibly forcing them to grant their citizens political rights and civil liberties. The example of the Tibet Independence Movement from the market regulators’ section also serves as a good example here.

That being said, various governments around the world have criminalized politically dissident online speech – this hurts civil liberties in those nations. Malaysia, Turkey, and China are examples of such countries where this has happened (Chalaby, 2000, p. 25). For example, in China, a man named Lin Hai received a two year jail sentence for distributing Chinese email addresses to exiled dissidents (Chalaby, 2000). Even if these kinds of laws cannot be enforced in full, governments can still make occasional examples of dissenters, intimidating others. Socially normative regulators: Self-censorship; Rough consensus, working code

### How it regulates

We briefly explore two social norms that regulate the Internet: self-censorship, and the norms of the Internet Engineering Task Force (IETF).

#### Self-censorship

Self-censorship effectively restrains citizens from experiencing civil liberties they would otherwise enjoy on the Internet. It has similar democratic effects to filter-based censorship, in that it limits citizens' personal autonomy and freedom to associate. Kalathil and Boas note that self-censorship on the Internet is apparent in a number of authoritarian nations, including Burma, China, Egypt, Saudi Arabia, Singapore, and Vietnam (2003).

#### IETF

Founded in 1986, the IETF supplies the standards and protocols that form the Internet's architecture (Harris & Hoffman, 2004). It ensures that changes in the Internet's architecture are based on the criteria of technological efficacy, which can prevent governments from arbitrarily changing the Internet to suit their needs. This norm is embodied in their credo "rough consensus, working code" (Huizer, 1996).

While it is difficult to see how civil liberties or political rights can be gained as a result of the "rough consensus" IETF norm, we can confidently say that it keeps governments from removing them. For example, it keeps governments such as the United States' from implementing backdoors in the Internet to accommodate wiretapping (McCullagh, 1999) – such backdoors could be used by authoritarian nations to intrude on privacy and choke out civil liberties. The IETF discards changes such as these on the basis that they do not enhance the efficiency of the Internet.

### Conclusion

We approached the question of how the Internet affects democracy from a quantitative standpoint. By means of various statistical analyses over an eleven year period (1992 to 2002) we strengthened previous evidence suggesting that the Internet has a positive effect on democracy (e.g., Kedzie, 1997; Richards, 2002). However, we also found evidence that this Internet-democracy relationship is not absolute; for instance, consider the variability amongst regional results.

In particular, our results show a significant correlation between Internet penetration (measured as the estimated number of Internet users per 1,000 people) and a common indicator of a nation's level of democratization provided by the Freedom House. With a multivariate linear regression model we show that this correlation maintains even when we control for a nation's geographic region, economic level (we use GDP per capita), and social development (we use literacy rate as a surrogate measure). Our findings suggest that a 25% increase in Internet penetration corresponds to a one point jump on the 14 point democracy index while still accounting for region and socio-economic development. Indeed, we find that Internet penetration explains more variation in level of democratic development within a country than does literacy rates and some of the geographic regions.

We employed Lessig's framework of regulation to examine possible causes of these correlations. Lessig defines four classes of regulators, forces that control and define systems such as the Internet. They are markets, architectures, norms, and laws. We argue that a democratic regulator is such a force that serves to enhance civil or political liberties. And we argue by example that there are democratic (and, indeed, anti-democratic) regulators which control aspects of cyberspace.

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