

The Digital Economy and Variegated Capitalism

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Abstract:

This paper sets out to conceptualize the ways in which the development of the digital economy (Malecki & Moriset, 2007) can be understood within the framework of variegated capitalism (Peck & Theodore, 2007). In doing so, it explores the question of how communication technologies interact with place-specific institutional, political and economic configurations to shape the geographically differentiated construction of an economy centered on the production, distribution and consumption of digital information. These interactions are examined through the development of geolocation technologies and their impact on a variety of approaches to jurisdiction over the Internet.

Keywords: variegated capitalism, digital economy, geolocation technologies, Internet governance

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Introduction

While early notions of the aspatial nature of the Internet and the unambiguous space-time compression of digital communications (Cairncross, 1997) have largely been dispelled (Malecki & Moriset, 2009; Zook, 2006), this paper further problematizes the range of geographical dimensions present in these sociotechnical systems. Particular attention is paid to the drive towards configuring geographically bounded economies through the combined use of technical means (such as geolocation technologies that determine the spatial location of Internet transactions) and legal regimes (such as the establishment of jurisdiction over flows of information).

I propose an approach that contributes to understanding how the digital economy is assembled throughout geographical scales and places. I argue that, as part of the global capitalist system, the digital economy is at once deeply intertwined with its development while continuously branching into localized manifestations that reflect specific technical, economic and political arrangements. This argument is developed through the use of variegated capitalism, or variegation, as a theoretical framework, and its extension towards the issues presented by digital technologies. This theoretical approach has done much to advance the understanding of a unified capitalist system, while accounting for the systematic production of heterogeneity in its manifestations at varying geographical scales (Brenner, Peck & Theodore, 2010).

Through the contributions to policy mobilities, this literature has also shown the specific mechanisms by which the neoliberalization project has been established in different locales (Peck, 2011; Peck & Theodore, 2012). Variegation is thus a useful lens to characterize and understand the relentless spread, as well as the increasingly

differentiated manifestations, of global capitalism. In this context, the aims of this paper are firstly, to shed new light on the digital economy through the variegated perspective, and secondly, in doing so, to extend this theory by applying it to the study of the digital economy—an area that, though increasingly salient, remains unexplored through this optic.

The digital economy is a growing part of the capitalist system, and as such it requires theorization that avoids isolating it as a self-contained phenomenon. Here, I argue that it must be studied as constitutive of the transformations of capitalism at large while simultaneously examining the localized configurations of digital information throughout different scales of governance. This argument is developed in three parts. First, I offer a brief outline of the main conceptual propositions of the variegated capitalism literature and stress the need to extend this project towards the digital economy. Second, I characterize the digital economy by highlighting its embeddedness in the socio-spatial formations of capitalism across locations and scales. Third, I explore increasingly visible geographic dimensions of the digital economy. I do this by examining cases illustrating the development of geolocation technologies and their growing relevance for the regulation of the digital economy at different scales. These examples show but a sample of the mechanisms by which difference is produced geographically within the digital economy. The variegated research program proposed here can serve to catalogue the growing array of differentiation engines in the digital economy, as well as how its myriad localized manifestations play an active role in shaping other social formations.

Variegated capitalism

Variegated capitalism is a theoretical approach developed through contributions in economic, political and urban geography. It situates itself in opposition to mainstream economic theory that considers economic outcomes as reflections of economic laws, it privileges the salience of market forces, and it stresses the tendency towards equilibria. Variegation is also sharply critical of the neoliberal program promoted by international organizations, rich states and global capital. It takes issue with the wholesale prescription of across-the-board policies aimed at getting developing countries “up to speed” with a model of society centred on free market capitalism.

Simultaneously, variegation also branches out from many influential approaches in the heterodox, institutional, and radical schools of international political economy. Specifically, it takes as its point of departure the proposition made by the Varieties of Capitalism school (Albert, 1993; Boyer, 2005; Hall & Soskice, 2001) that there are distinctly identifiable *capitalisms* that depend on the cultural traits and institutional arrangement found in different countries. Albert (1993) states that the two main models of capitalism are the “Anglo-American” model based in the US and the UK, and the “Rhinish” model, based in continental Europe. Although this division breaks with mainstream economics by acknowledging the influence of local contexts in the formation of capitalism, it does so by establishing rigid categories informed by a primarily Anglo-Eurocentric paradigm.

The variegation literature is critical of a division of capitalism in forms that correspond to discretely bounded nation states, cultures or even regions. Seeing it as rigid and scale insensitive, variegation instead proposes that capitalism is a single

economic system that, while joined at the root, adapts and manifests in diverse ways simultaneously throughout scales and in particular locales. This opens the door for possibilities of understanding “the economy” beyond the methodological nationalism that often impairs the explanation of the astounding variety of outcomes that populate the geo-economic landscape. While acknowledging that there are fundamental commonalities at the core of the global economic system, variegation pays particular attention to the institutional, political and social arrangements that arise at different scales and specific places and considers those arrangements as instrumental factors that, through the “messiness” of implementation, shape the myriad local mutations of capitalism.

Brenner, Peck and Theodore (2010) define variegation as “systemically produced geoinstitutional differentiation, at the heart of a reformulated conception of neoliberalization” (p. 207). The differentiation they point out is not merely the result of geographical diversity, but the outcome of a deliberate project to adapt to a range of institutional settings, while reshaping them through market-compatible and market-centred solutions. The implementation of a set of neoliberal priorities—commodification, state restructuring, openness of capital flows, etc.—through local and conjunctural conditions produces a variegated landscape of neoliberalization that emanates from a singular project. In fact, a core premise of the argument is that it is precisely this capacity to adapt and mutate that has made the neoliberal project so resilient (Mirowski, 2013; Peck, 2010).

The use of the term variegation is an effort to acknowledge both the coherence and the immense variability of this project in a growing diversity of geographical

settings. Peck and Theodore (2007) introduced variegation as a response from within economic geography to a set of approaches to globalization that define capitalism either in terms of fixed national models—as the above cited Varieties of Capitalism—or as a collection of independent context-specific manifestations—as in the Governmentality perspectives (Ong, 2006; 2007). Thus variegation is proposed as a framework that understands capitalism in general, and neoliberalism in particular, as engines of differentiation that, while following a singular logic, thrive precisely due to their ability to produce systematic variation as they are implemented in different locations. This necessarily carries the consequence of contributing to the uneven socio-spatial development:

Crucially, however, across all contexts in which they have been mobilized, neoliberalization processes have facilitated marketization and commodification while simultaneously intensifying the uneven development of regulatory forms across places, territories and scales. (Brenner et al., 2010, p. 184).

In light of this unevenness, the variegation approach seeks to capture both the global forces of capitalism that are remaking social relations in the shape of the market, and simultaneously elucidate how they consolidate into specific configurations throughout places and scales. One of the objectives is to demystify the idea of globalization as a singular end state and, by pointing to the diversity and contingency of particular processes, identify possibilities of resistance (Macartney, 2009).

My argument is premised on the fact that the digital economy, as well as the relations and transformations that comprise it, do not develop in a geographical or political vacuum. In fact, they take shape throughout specific locations and at multiple scales, where they are not so much contained but rather actively contribute to their

production. Although I will group them in three levels, the following elements are continuously remaking each other to configure the different iterations of a continuously mutating digital economy.

First, at the most basic level are the infrastructural requirements, which enable the existence of digital communications networks and other necessary components. Second, the digital economy is embedded within a broader social and geographical context through location-specific sets of rules, laws, policies, practices and regulations. In ways that mirror institutional configurations at different scales, these norms and practices can structure and define the operational principles and protocols of the digital economy. A third level is constituted by set of social practices associated with digital information in specific settings. While these are certainly influenced by the availability or characteristics of technological means, the digital practices and cultures of specific places are not merely extensions of technical capabilities or local regulations. As the literature on the social construction of technology (Pinch & Bijker, 1984) and the debates it generated (Winner, 1993) have shown, technologies themselves are in large part shaped by social relations and cultural practices. In light of this, the three levels presented here should be seen not in isolation but in continuous and reciprocal transformation.

While the national and subnational scales exhibit a great degree of variation in the elements that configure the digital economy in each place, there are recognizable forces at the supranational scale that strongly influence this process. Powerful countries, transnational corporations and international institutions, such as the IMF, WTO, ICANN and WIPO, have strong incentives to homogenize the

commodification of digital information along regimes that maximize structured flows of monetized information; however, as noted above, the digital economy is always constituted through particular infrastructural, geo-institutional and social configurations. As Brenner has pointed out, these configurations are continuously re-scaled between the urban, the regional and the supranational, among other scales (Brenner, 2004).

Variegation is particularly attentive to this process of rescaling that enables the re-articulation of power, agency and governance across a range of administrative scales. The lens of variegated capitalism provides an optic to integrate the multiplicity of actors, technologies and scales that assemble the digital economy throughout the geo-economic landscape. In the following section, I will outline some of the characteristics of the digital economy that lay the groundwork for a variegated study of its constitution and operations.

The digital economy

With the rise of the digital economy, there has been a reorientation of the legal systems of different jurisdictions towards certain core tenets aimed at reshaping information exchange into a market, such as establishing intellectual property rights and bespoke forms of commodification specifically tailored towards digital information. This should not be surprising in light of the dramatic increase in the monetary value of digital information with the diffusion of the Internet and the integration of computers in most aspects of work and life. It should be noted, however, that the Internet has been for much of its historical development an ecosystem where explicit monetary exchange has not been the norm (Abbate, 2000;

McChesney, 2013). This means that currently we are witnessing the substantive transformation of this network from a means of information exchange to a platform of economic activity. It is at this juncture that I characterize the consolidation of a digital economy increasingly built on the logic of capitalism.

I use the term “digital” to describe a particular kind of economy in terms of its primary technological means of production, distribution and consumption, as well as the particular qualities of its commodities. Other labels, which themselves have long conceptual lineages, do not quite capture this specific set of activities, technologies, relations and commodities. For example, the “information” economy runs the risk of being too broad, since information is and always has been essential for economic transactions—and information can be transmitted in a number of ways, many of which lack a digital component. “Network society” and even more so “information age” are in turn even broader concepts that describe more general societal transformations that transcend the economic sphere (Castells, 2010). “Knowledge” economy (Drucker, 1992), while useful in its own regard, tends to refer to the skills necessary to thrive in the leading professions, as well as the increasing sophistication of certain tasks and the know-how required to perform them. On the other hand, in this analysis, I avoid terms such as “post-fordism” (Lipietz, 1997), “post-industrialism” (Bell, 1973) and “late capitalism” (Jameson, 2003). While these concepts, each with its own theoretical yield, signal major recent transformations in the historical configuration and overall character of capitalism, my aim here is to focus on a more circumscribed set of activities.

For these activities, the use of digital technologies structures the production, distribution and consumption of commodities and fundamentally determines the qualities of the commodities themselves. Conceived in this way, the digital economy is centred on the firms, industries, organizations and consumers that are explicitly in the business of creating, selling and consuming digital products, as well as the relations articulated by these economic transactions. While the market is an important part of the digital economy, there are many non-market elements that are essential to its constitution. Thus, the digital economy also includes the patterns of use and consumption of digital commodities, non-monetary transactions, such as file-sharing networks, and the regulatory frameworks specifically deployed towards the digital environment.

While my definition of the digital economy rests firmly on the use of a particular set of technologies, it should be noted that these are conceived in way that emphasizes their embeddedness within the social world. As Webster (2007) points out, technology-centred definitions of our era most often implicitly understand technology as something external that produces an impact on society. The variegated study of the digital economy that I advance in this article considers technology integral to the dynamics of capitalism in their global scope as well as in their multiscalar manifestations.

The integration of computers in production initially led to the so-called “productivity paradox” famously identified by Robert Solow: “you can see the computer age everywhere but in the productivity statistics” (Solow, 1987). While the Internet has continued to increase the production of data and derived information, a

new paradox has arisen. The explosion in the wealth of information and the noise it generates may obfuscate the impacts of the digital economy at particular geographical scales, as well as the ways in which this information contributes to the production of those very scales. This paradox has persistently been one of the key difficulties in understanding the digital economy and its broader impacts.

Even today, it is still very difficult to identify the effects of the Internet on a particular location, its industries, government or labour force. It is even more difficult, it seems, to understand the precise mechanics behind them. Some efforts have been made towards measuring increases in productivity (Czernich, Falck, Kretschmer & Woessmann, 2009; Greenstein & McDevitt, 2011; Koutroumpis, 2009), others towards the increased gains in democratic exchange and speech—and the reactions against them (Howard, Agarwal & Hussain, 2011)—while others yet point to the intelligence and security agencies as the main beneficiaries of the data generated in the digital economy (Soghoian, 2010; 2011). Nearly two decades after the National Science Foundation (2003) opened the Internet for massive consumption, we are still grappling with how to understand and measure the integration of this technological platform into the economies and societies of countries, cities and regions, as well as the transformations, gains and losses it produces.

Negroponte (1995) famously used the differences between bits and atoms to characterize the contrasts between the digital and physical parts of the economy. Weightlessness and speed of transmission are key elements of this distinction. By focusing on the differences between digital and physical communication technologies, Negroponte compellingly isolated the fundamental innovation of the “new” economy:

beyond networks or information, the digitization of goods and services is a transformative factor of the dynamics of capitalism (Malecki & Moriset, 2009).

However, the bits and atoms metaphor quickly runs out when translated into the real world. While bits may not “weigh” anything, or individually “take space,” they certainly have an observable and measurable physical existence (Blanchette, 2011; Kirschenbaum, 2008). Furthermore, storing bits requires major infrastructural investments such as land, cable digs, buildings to house the servers, ideal cooling conditions, and even friendly energy tax-regimes that keep down power costs (Mosco, 2014; Moss & Townsend, 2000). And while the Internet is not a “truck,” as the late senator Ted Stevens eloquently put it, his famous characterization of it as a “series of tubes” vividly depicts the physical requirements that underlie the world of digital information that we have come to identify with the Internet (Moss & Townsend, 2000). Thus, directly and indirectly, these bits do have a physical existence that is reflected on their physical traces, the requirements for storage, and the network of underground and undersea cables connecting specific geographical locations, such as countries, cities and individual data centres. To exist in these locations, bits also necessitate social, political and institutional arrangements that make them “appear” in particular configurations on our screens—or disappear from them.

Any “tweet,” Facebook message, or video stream is possible due to several layers of requirements, and those that relate to hardware form only the most immediate. Beyond the digital requirements (such as software compatibility), and infrastructural underpinnings (such as the cables and data centres), there is a series of decisions, contentions, negotiations, investments, litigations and contracts that lead to

a place being “wired” a certain way or an Internet user being able (or allowed) to perform certain activities online. These social, political and economic arrangements that come together in different ways to construct the Internet and the digital economy across geographic locations are crucial to its embeddedness into the capitalist economic system. They are precisely the ways in which states, markets and institutions come together to shape, regulate, surveil and control the flows of digital information exchanged through the “series of tubes.”

The digital economy is articulated through the diversified commodification of information flows. This process transforms the nature and purpose of the information itself as well as the social and economic relations around it. Yet, what are the specific mechanisms by which digital information is transformed into a commodity to be bought, sold and turned into revenue and profit? A cursory look at the main strategies pursued by firms in this business will suggest that there is no single or clear answer (McCallum & Gleason, 2013). Many large Internet companies, such as Google and Facebook, monetize information based on an advertising model where services are offered free of charge in exchange for mined personal information that is then sold to advertisers. Another monetization strategy is consolidating through the vigorous app market, which has increased dramatically in recent years and is deployed on proprietary hubs such as the iTunes App Store or Google Play.

In spite of the swelling of the digital economy, many industries continue to struggle with coherent strategies to monetize their online content, particularly traditional media industries transitioning to the digital medium. Business uncertainty in the digital economy is compounded by risks, such as piracy, identity theft and

hacking—all of which are ultimately policed to different degrees by territorial jurisdictions. Although the digital economy is not necessarily any more or less unpredictable than any of its non-digital counterparts, its novelty and rapid development make it difficult to assess the degree to which its dynamics are unique.

In this respect, one of the pressing questions about the digital economy is how it can or should be regulated, in particular when it comes to transnational flows of information and conflicts over regulation and jurisdiction. Following the localized embeddedness of the Internet, the answer to this question currently depends to a great degree on *where* it is asked. This is precisely where the lens of variegated capitalism can offer insights into how states, firms, international organizations, civil society and other actors interact to produce the different instances of the digital economy across places and scales.

Much like capitalism, the digital economy has expanded globally, with the Internet serving as its central platform. Early in its development, the Internet was considered the final nail in the coffin of space, distance and geography itself (Cairncross, 1997). While initially seductive, the retrenchment of the promised virtual utopia has now given way to a more explicitly spatialized, and increasingly territorialized, version of the global digital information ecosystem.

This shift is analogous to the state of capitalism as viewed through the lens of variegation: while retaining connections at a root level, the digital economy takes different forms that are at once place and scale sensitive. Like capitalism, the digital economy is “always embedded” in broader contexts of institutions, politics,

multiscalar relations, resources, infrastructures and so on. It also happens that many of those contexts have relatively stable geographic expressions, such as states, sub-national regions and metropolitan areas.

As a theoretical framework that seeks to understand the place- and scale-specific nuances of the capitalist system, variegation can help us understand how the digital economy is integrated into the economic geography of the contemporary world. Similarly, by explicitly making the digital economy into an object of study for variegation, this theoretical approach can greatly benefit from grappling with an increasingly relevant—yet still understudied—dimension of the capitalist economy, and specifically of the neoliberalization project.

I argue that a fruitful area for this research is to study the creation of legal regimes that structure the marketization of digital information and how those regimes operate across different geographies. In the following sections, I will address two specific aspects of the digital economy from the perspective described above. First I will show how geolocation technologies enable the construction of location-specific digital economies. Secondly, I will explain how, through the use of these technologies, legal frameworks from different jurisdictions are able to enact specific regimes and regulations that structure the digital economy in manifestly distinct ways that both reflect and construct geographically specific conditions.

Geolocation and jurisdiction

Geolocation

When someone types the word “restaurants” in a search engine in the year 2014, the list of results is mostly populated by offerings conveniently located in close proximity to the location of the search itself. Online shopping produces a similar outcome: the prices are often marked in the relevant national currency and the choices tend to reflect local availability and even popular brands and styles. Advertisements are tailored by language, city, and, sometimes neighbourhood. Behind this sorting of information is a combination of the power of increasingly sophisticated search engines and the insights produced by geolocation technologies. These elements are but two interlocking pieces of an increasingly complex and localized digital economy.

These technologies perform the task of matching a point of access to the Internet with its physical location. Moreover, companies like Quova, Akamai and Digital Envoy routinely pair the location of access to census data in order to create demographic profiles of users (Associated Press, 2004) and thus provide increasingly comprehensive geographic information about them. This has dramatically changed the way users experience the Internet. It has also brought to light a geographical dimension of this experience that had remained relatively obscure until the 2000s. For most of its early life, the Internet had been a place of anonymity and seemingly devoid of geography. With the spread of geolocation technologies, the former is near extinct, while the latter is increasingly visible.

For the purposes of identification and location addressing, each computer or device that connects to the Internet is assigned an Internet Protocol address, or IP address. This is a binary number whose label in turn consists of four numbers in the case of type IPv4 or six for IPv6. Given the enormous expansion of the Internet in

recent years and the increasing need for new IP addresses, IPv6 was designed to replace IPv4, active since 1984. The new protocol and was deployed beginning in 1999 and first massively used at the Beijing Summer Olympics of 2008.

Far from being a purely technical issue, IP addresses are embedded in a network of private and public institutional arrangements that owe their structure to the historical and geographical development of the Internet as a by-product of governmental research in the United States. IP addresses are assigned by the Internet Assigned Numbers Authority (IANA), located in Marina del Rey, California. This entity is in turn a department of the Internet Corporation for Assigned Names and Numbers, or ICANN. The United States Department of Commerce oversees both of these corporations, as stated in a contract signed with ICANN in 2000 where the latter is granted the authority to administer IANA (U.S. Department of Commerce, 2000; National Science Foundation, 2003).

This institutional framework governs the assignment of IP addresses following a geographic hierarchy, where the world is divided into five regions, each covered by a Regional Internet Registry (RIR). Within these regional registries, there are National Internet Registries (NIR) and Local Internet Registries (LIR). Cable companies, such as Time Warner or Comcast, in their role as Internet Service Providers (ISPs), obtain IP addresses from the pools allocated by IANA to these registries and assign them to end users (U.S. Department of Commerce, 2000).



Figure 1. The IANA world map of Regional Internet Registries. Source: <https://www.iana.org/numbers> (N.D. Accessed January 27, 2015)

While IP addresses refer to a hierarchy of networks that loosely mirrors the political divisions of the world, the correspondence is far from exact. In order to extract location information, IP addresses are translated by geolocation technologies that perform a match with databases containing real-world addresses. One of the main sources of location error in this process is the fact that Internet Service Providers' servers, which assign the IP address, may not be in the same location as their users. However, in recent years geolocation companies have been able overcome this obstacle by following the data packets in order to narrow down the approximate location of the user with a higher degree of confidence. Today it is common in the U.S. to find accuracy at the ZIP code level identification and, most recently, even street level identification, with a median error distance of 690 meters (Wang, Burgener, Flores, Kuzmanovic & Huang, 2011).

The fact that information on the Internet can increasingly be located in space means that it can be more explicitly integrated into place-based social, legal, political

and economic processes. This trend can be observed in the growing range of commercial applications of geolocation technologies. According to Quova, a leading geolocation firm, the main areas of application for these technologies are local legislation, licensing requirements, technical standards, court orders, taxation and criminal liability (Quova, 2010). Geolocation is also routinely used to improve network administration and cloud computing performance.

Location, however, is never devoid of context, and thus implies other types of spatial relations that are now part of the Internet in different ways. In the commercial applications mentioned earlier, the location of the actors involved can translate into specific and quite tangible consequences. For example, whether Internet users are located inside or outside the boundaries of a jurisdiction may determine their rights, their responsibilities, the services they can enjoy or the punishments they risk for certain types of infringement.

Locational information in the Internet has become so pervasive that it is often difficult to imagine how it ever functioned without it. Looking back at the early attempts of online film distribution, the problem of geography emerged as a major concern for copyright holders. Interviewed in 2004, the CEO of the now defunct online video pioneer Movielink commented on this issue:

The laws for copyright and licensing and the business rules are different in every country, so it's important the content providers be given a facilitating technology...We're beginning to prove that we can do that. (Associated Press, 2004, paragraph 30)

These were inklings of the shift in operations of the Internet at large. In the process of creation of a viable digital economy, the localization (and territorialization) of the Internet has played a key role. This process has allowed the flows of information to be

subsumed within the multiscalar forces of global capitalism. While the specific mechanisms exhibit a great deal of variation, the thrust of turning information into capital has been enhanced by the development of a more explicitly localized—and territorialized—Internet.

The defining features of the Internet's first decades and the interactions they enabled were captured in the popular adage from New Yorker cartoonist Peter Steiner: "on the Internet...nobody knows you're a dog" (Steiner, 1993, p. 61). However, today this has changed to the degree that younger users are likely to find the lack of anonymity as natural as the location-based dimension of their online experience. This is enhanced by the widespread use of GPS-enabled smartphones. It would be tempting to suggest that this "placing" of information catalyzed by geolocation technologies has added a new dimension to the Internet. However, from its conception this network was significantly influenced by a territorial logic of defense and infrastructural concerns. Yet, until recently, this dimension of the Internet had remained relatively invisible to most users due to the lack of perceptible manifestations in their everyday experience.

The perceptions of aspatiality, placelessness and deterritorialization shaped a cultural understanding of the Internet that deeply influenced expectations about its governance, operations and future possibilities. This understanding gave birth to the enduring idea of cyberspace, or the Internet, as a realm apart from the physical world. Today, in spite of the now evident and intensified geographical dimensions of the Internet, the notion of cyberspace is still deeply rooted and equally influential. Its influence is impossible to ignore when we consider how to "place," manage, and

regulate the flows of digital information and capital that constitute the digital economy.

These two seemingly contradictory understandings of the Internet, one anchored in physical spatiality and the other avowedly virtual, coexist to this day. The hybrid nature of the Internet's relationship with geography is both a mirror and a catalyst of many re-articulations in society that explicitly address its myriad effects. The law is a realm where these re-articulations are becoming increasingly salient. While capitalism exhibits a high degree of malleability in adapting to different places, scales and even modes of spatiality, however, the law is notoriously less supple. Yet, in line with the broader processes of globalization and the transformations brought by the Internet (and those internal to the network itself), there is a change underway at the core of the idea and practice of jurisdiction.

The Westphalian political order, premised on the hard spatiality of territorial jurisdiction coterminous with the boundaries of the state, is under increased scrutiny and contestation. Raustiala (2004) refers to this shift as the "uneven evolution of legal spatiality" (p. 155) and detects a thrust towards a more contextual and functional approach to jurisdiction. This erosion of a fixed notion of territoriality appears to be in consonance with the challenges posed by the emerging spatialities of information flows. The integration of the digital economy into variegated capitalism is one of the problems at the core of these jurisdictional transformations.

The notions of spatiality adopted in the wake of this legal shift will have fundamental consequences for the ways in which monetized information flows

circulate within and between places. In light of this, it is important to examine the evolution of the Internet in relation to ideas of location, territoriality and the virtual nature of cyberspace. This evolution is becoming a central concern in the construction and enforcement of legal frameworks that attempt to regulate a digital economy that is at once increasingly localized and intensely global. In the following section, I will consider some of the key developments that have brought geolocation and the law into closer contact and, in doing so, impacted the Internet's role as a platform of economic activity.

Geolocation and the law: The Yahoo! case of 2000

One of the most emblematic court cases in the history of the Internet is directly related to the development of geolocation. This case brought to the fore the possibility of states enforcing their jurisdiction over the flows of information on the Internet. However, it also showed the multiple obstacles for consensus about jurisdiction over the Internet.

At the height of its power in the Internet industry, the search engine giant Yahoo! found itself in the midst of a legal battle that would prove to be lasting in significance. Two French groups, The League Against Racism and Anti-Semitism (LICRA) and the Union of French Jewish Students (UEJF) sued the American firm and its French affiliate, Yahoo France. The lawsuit was filed in May 2000 in the Tribunal de Grande Instance de Paris (the County Court of Paris). It states that, at the time, Yahoo! operated an auction portal where thousands of items of Nazi memorabilia were accessible to users located in France. The court initially ruled that the display and sale of Nazi objects through the portal constituted a violation of article

R645-1 of the French Criminal Code, which prohibits the public display of Nazi uniforms, insignias and emblems (Akdeniz, 2001).

Later that month, the court ordered Yahoo! to prevent these transactions from involving any French residents. It also ordered Yahoo France to issue warnings to French users before they viewed the merchandise in the auction site. Yahoo!'s defense had noted that since their servers were located in the U.S. and their services targeted primarily U.S. users, these transactions were protected under the free speech guarantees of the First Amendment to the United States Constitution (Akdeniz, 2001). Additionally, Yahoo! argued that it was infeasible to comply with the court's order due to lack of technical means. Even if the means to comply with the order in fact did exist, they argued that its implementation

would entail unduly high costs for the company, and might even place the company in jeopardy and would to a degree compromise the existence of the Internet as a space of liberty and scarcely receptive to attempts to control and restrict access. (Akdeniz, 2001, p. 2)

There were two major issues underlying the case itself and the decision of the court. Both of them are geographical issues at heart and have serious repercussions for how the Internet is regulated, who has the right to rule over it and consequently how the digital economy can be configured. The first issue is that of imposing national jurisdictions on a transnational communications network and the information contained and produced therein. The second issue is identifying the physical location of users in order to comply with those national jurisdictions. Although both of these matters have become central to the operations of the Internet, they are still not fully or uniformly resolved. In fact, recent debates about privacy, security and surveillance ensure their continued salience in the Internet's present and future.

Much of how we currently experience the Internet in relation to the offline world is due to the invention and widespread implementation of geolocation technologies: from geo-targeted local advertising to content licensing by country or region to widespread surveillance, censorship and commercial use of personal data. During the frontier phase of the Internet, until the early 2000s, it was unclear at a fundamental level what could or could not be done with and through it. The digital economy had not yet coalesced around this platform in part because the possibilities for controlled distribution and regulation were still remote and unclear.

A breakthrough moment for the Yahoo! case and the development of the Internet came when Cyril Houri, a French software engineer demonstrated that he could feasibly filter users by location with 90% accuracy through Geo-ID, a product he developed and that pioneered geolocation technologies (Goldsmith & Wu, 2006). It is worth noting that the judge argued that Yahoo! was already familiar with geolocation technologies and thus able to implement the decision of the court because it already displayed advertisements in French for users inside France. In response to this, the judge convened a panel of experts to suggest how Yahoo! could comply with the order of restricting French users from breaking the local law. The three person panel, made up of Ben Laurie, Francois Wallon and Vinton Cerf, supported the claims made by Cyril Houri, which meant that Yahoo! would be compelled to make a “best effort” to geolocate its users and block access to those located in France (Goldsmith & Wu, 2006, p. 7).

The central debate in this case was not the availability of Nazi merchandise in Yahoo!’s auction site, which was not contested, but the jurisdiction under which this

fell. In its defense Yahoo! claimed that it was operating under the jurisdiction of the United States, an argument the company later raised in a related trial to the Ninth Circuit Court of Appeals in San Jose, California. The fundamental question was whether a French court had jurisdiction over an American company whose portal allowed transactions *that may take place* in France, but which (according to Yahoo!) was impossible to determine?

In the end, the case would open more questions than it would answer. Before the American Ninth Circuit Court of Appeals declared the incompetence of the French court, the case had been seemingly resolved when Yahoo! opted to remove the Nazi paraphernalia from its auction site. The larger significance of this case lies in how it paved the way for an explicitly geographical treatment of the Internet as a matter of regulation. In fact Yahoo!'s subsequent intensification of geographically targeted advertising suggests a dramatic shift away from the placeless conception of the Internet it had previously upheld (Goldsmith & Wu, 2006).

As the Internet matured into a full-scale commercial nexus, it has undergone a spatialization that is neither fully territorial nor entirely virtual. The flows of information-capital that run through the network must negotiate technical and regulatory checkpoints across jurisdictions if they are to realize their promise of connecting a global marketplace. It is this technical and regulatory landscape that provides the scaffolding for the logic of variegated global capitalism to become instantiated through digital transactions while adapting across a staggering range of conditions. More than a feature, variegation in the digital economy is a condition for its survival. In spite of the significant changes since the Yahoo! case, a uniform

approach to regulation of the Internet, or even an underlying spatial logic, have yet to be agreed upon. The next section explores a series of key questions surrounding this problem.

One Internet, many jurisdictions?

Establishing jurisdiction on the Internet brings about the dilemma of dividing it through the use of borders. Border creation, even in the physical world, is a messy process full of pitfalls and unforeseen consequences (Ford, 2012). Given the complex relationship between information, location and jurisdiction, we can expect this process to be no less problematic on the Internet. Svantesson (2006) suggests two ways in which the jurisdictional difficulties associated with the Internet can be addressed:

1. Placing borders *on* the Internet, or territorializing it, which amounts to partitioning it according to discrete territories, or
2. Placing a border *around* the Internet, or considering it a separate territory in its own right—with its own laws, regulation and governance dynamics.

These two alternatives imply different kinds of territorialization processes. The first one would be an extension of physical/legal territories governed by states—analogue to airspace, for example. Thus, we would have the Chinese Internet, the Iranian Internet, the Australian Internet and so on. The second one would be an attempt to separate the direct ties between territorial structures in the physical world and treat the virtual world of cyberspace as its own supranational realm. In the best-case scenario, it would be a multilaterally regulated space where no actor—state or private—would dominate over others. In the worst case, the most extreme power

differentials would be reproduced and amplified, allowing certain actors to exert control over others far beyond “their borders.”

The current state of the Internet is a combination of both of these scenarios. In certain sections of cyberspace, there is a closer correspondence between the informational network and the political borders through the hard territorialization imposed by some authoritarian states, such as China, Iran and Syria, among others. On the other hand, in the rest of the Internet there is constant tension where the United States exerts hegemony in many respects (such as the governance of names and numbers mentioned earlier), but there is active competition between other states and private companies for influence, surveillance and control over information flows. Undisputedly, the United States is currently the state actor with the most capabilities to pursue its interests beyond its jurisdiction over the Internet. Partly this reflects the ambiguity over *where* its (or anyone’s) jurisdiction ends; however, it also mirrors the technical and geopolitical capacity of enforcement beyond its borders.

The recent case of Kim Dotcom illustrates how the physical location of digital information, the economic interests of certain copyright holders, and different states’ claims to jurisdiction interact in specific ways to reinforce a particular regulatory approach to the digital economy. In particular this case reflects a vision of the digital economy strongly influenced by the interests of copyrights holders and enacted by the United States beyond its borders through political and judicial power. German millionaire Kim Dotcom is the founder and owner of the Hong-Kong-incorporated file-sharing site Megaupload. He has been accused by the U.S. Government of criminal conspiracy, copyright infringement, and racketeering, among other charges.

These charges are due to the activities on his website, which allegedly cost copyright holders in excess of USD \$500 million. Megaupload served as a digital locker where users could store, access and share all kinds of files and media—much of it under copyright. The site was at one point was the 13th most popular on the Internet and received as much as 4% of all traffic worldwide (USA v. Dotcom et al., 2012).

The antiterrorism-style raid on his mansion near Auckland, New Zealand, involved 76 officers, two helicopters and attack dogs. It was revealed afterwards the U.S. government had pressured and provided material assistance through the FBI, which set off a political scandal for New Zealand's Prime Minister (Graeber, 2012; ONE News, 2012). One of the main reasons the US can claim to have jurisdiction over Kim Dotcom and the “Mega Conspiracy” is the physical location of the information stored on the website. Megaupload reportedly hired the services of Carpathia hosting, a “hosting company headquartered in the Eastern District of Virginia,” where “thirty-nine infringing copies of copyrighted motion pictures were present on their leased servers” (USA v. Dotcom et al., 2012, p. 11). As the U.S. continues to seek Kim Dotcom's extradition from New Zealand, the case is gaining widespread notoriety regarding the claims of jurisdiction over the Internet, privacy protection issues, sovereignty disputes, and the regulation of the digital economy.

In the case of Kim Dotcom, the United States exerted power beyond its territorial borders on the basis of two elements: economic damages to U.S. copyright holders and the physical location of the servers where those damages “took place.” The territorial jurisdiction over the Internet can be combined with extra-territorial reach to produce a multiplicity of outcomes—and to advance radically different

conceptions of the digital economy. Using a similar argument based on the location of digital information as well as the identity of the user and the location of access, the European Commission is enacting its territorial jurisdiction to promote a different regulatory approach. Through the proposed creation of the “Right to be Forgotten,” the Commission is trying to regulate the actions not only of EU-based companies, but of extra-territorial actors that handle personal information of EU citizens (European Commission, 2012).

This regulation would force Internet companies and other services to take down any personal information consumers consider damaging to their privacy or public image. It would severely limit the powers of search engines and other data miners, while constraining the dominant Internet business model that encourages the monetization of users’ personal information. While the European Commission argues that consumer data protection should take precedence, Internet companies have argued that it stifles free speech, the right to public information and forces them to become adjudicators, thereby hampering innovation. Echoing the general sentiment across the Atlantic, American legal scholar Jeffrey Rosen (2012) has called the Right to be Forgotten “the biggest threat to free speech on the Internet in the coming decade” (p. 88).

A key point here is once again the location of jurisdiction over digital information on the Internet. This is fundamental for the digital economy, since the Internet represents its central infrastructural platform, and the flows of digital information are potential flows of capital. The creation of markets for digital

information is at once premised on the circulation of that information and on the enforcement of rules that standardize and protect its monetization.

These market dynamics thus bring with them the problem of enforcement, since it is unclear who has the right to exercise jurisdiction over transactions of digital information over the Internet. While some courts in the U.S. have placed jurisdiction on the location of the Internet server (as in *USA v. Kim Dotcom et al.*, 2012), others—for example, in France—have done so over the location of user access (as in *LICRA v. Yahoo!*, 2000). Currently there are widely diverging interpretations on the matter, which correspond to the type of activity, the legal precedents available, and the jurisprudential tradition of a particular jurisdiction, among other factors.

The resulting maze of directives provides a glimpse of the variegated landscape on which the digital economy is embedded. In spite of its accelerated growth and global reach, it will continue to depend more, not less, on the location of users, firms, transactions and states, their positionality in multiscale networks of social and geo-economic relations, as well as the complex interdependencies established between them.

Conclusions

The cases discussed above bring to light the uneven territorialization of the Internet and the variegated forms adopted by the digital economy in its expansion. I have stressed throughout this article that the digital economy should be understood in its embeddedness in a variety of socio-spatial formations. While these formations may be states, as shown above, the digital economy can also simultaneously take shape at

(and actively re/produce) other scales, such as urban, regional and supranational. The focus on geolocation technologies and their role in enabling different kinds of jurisdictions served to illustrate some constitutive aspects of the specific geographical contexts in which the digital economy develops.

As the digital economy continues to grow, it is crucial to study its relation to capitalism at large and its myriad manifestations throughout scales and places. The optic of variegated capitalism represents a productive theoretical avenue that enables the geographically differentiated integration of social, political, technological and economic elements that come together to create the digital economy. It is only through the synergy of place-specific contexts and the systemic study of capitalism that we can understand how the digital economy is contributing to restructuring places, countries and regions, and in turn evaluate the scale, scope and quality of those transformations.

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