Jnl Publ. Pol., **25**, *1*, 29–50
DOI: 10.1017/S0143814X0500019X
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Printed in the United Kingdom

What is Internet Governance and Where Does it Come From?

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ABSTRACT

The literature on governing the Internet suffers from such lacunae as overly narrow, technocratic conceptions of Internet governance; insufficient attention to governance dynamics within countries; and limited appreciation for the micro-level political and social roots of governance. This essay suggests ways they may be addressed by asking two foundational questions '*What is Internet governance and where does it come from*?' 'Governance' is defined as a syndrome of norms and rules controlling property rights, market structures, equity assumptions and authoritative definitions about which social actors are permitted to participate in governance processes and which are excluded. ICT governance originates in conflict and cooperation among contending elites who negotiate across four distinct societal sectors – government, the private sector, research and development, and civil society. This distinctive pattern of four-way negotiations is termed the '*Quad*', a concept that helps explain the origins of governance, and points toward theories linking the structure of the Quad with the performance of the Internet cross-nationally. The concept of the Quad contributes both to scholarly understanding of Internet governance and to improved performance by practitioners charged with real-world governance responsibilities.

This essay is an exercise in re-conceptualizing and re-framing Internet governance (IG) to make the term more broadly comparative and explicit. There has been a steady growth in writing on e-government which concentrates for the most part on the application of new information and communication technologies and techniques to traditional or new practices of government, identifying opportunities and constraints on deployment (Fountain 2001, UNDP 2003, Pavlichev and Garson 2004). Some studies begin with ICTs as the independent variable that will reshape policy or institutional performance in health care,

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education, fiscal management or other public activities. Other works are more sociological and take ICT as the dependent variable, and review the influence that institutional, societal or other conditions have on the allocation or performance of the technologies themselves.

This study questions the basic governance of the Internet itself. Without prior agreement on Internet governance upstream, there can be little agreement on particular applications of 'e-government' (or e-commerce, e-education, etc.) downstream. To make this argument the article concentrates on definitional and conceptual issues and then presents empirical materials that are illustrative and exemplary. It does not attempt to provide complete case studies and detailed empirical work that decisively confirms or disconfirms hypotheses. However, the re-framing offered here does draw extensively from three distinct empirically-based, cross-national research projects conducted by the author that operate at the intersection of global and national Internet issues. One compares and contrasts the politics of Internet governance in Brazil, China and Ghana (Wilson 2004); a second, the negotiation of national Internet governance rules in Ghana, Kenya, Rwanda, South Africa and Tanzania (Wilson and Wong 2005); and a third analyses Internet and other ICT governance at the international level, covering issues such as the Internet Corporation for Assigned Names and Numbers (ICANN), electronic commerce, trade in services; and intellectual property rights (Drake and Wilson 2005).

Limitations of the current literature on Internet Governance

The current literature on Internet Governance is rich in many respects. Much is driven by the heroic effort to describe accurately the very dense and complex system of global governance designed mainly by American technologists and engineers that grew into a highly distributed international network of corporate, research and other non-governmental actors that marginalized traditional state agencies. Good scholarship is available by individual scholars like Klein, Mueller, Mueller and Woo, and others, and there are excellent collective efforts by teams, e.g. *Toward a Framework for Internet Accountability* by the Markle Foundation (2003). Some set out the legal implications by attorneys (*Journal of World Intellectual Property* 1998, 1,1).

At the same time too much research suffers from flaws. In their effort to master the technical minutiae of standards setting and technical coordination, authors are likely to adopt a rigid and inappropriate technocratic orientation such that the technology becomes an unquestioned independent social determinant in its own right, marginalizing human agency and political choice. Regrettably, there is insufficient conceptualization

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of the *politics* of Internet governance as distinct from the technological possibilities (see Maskus' 2000 de-politicized description of the issues around intellectual property rights). Missing are the micro-level motives, choices and behaviours of those who design governance structures. Unusually, Steve Weber (2004) of Berkeley does take precisely a micro-level perspective. Because it is so easy to define the Internet as a 'global' phenomenon, there are relatively few detailed studies of *national* governance of the Internet. Instead, more global institutions like the ICANN occupy centre stage (Levinson 2001). Analysis concentrates on international standards set at multiple international meetings mainly by multinational actors, whether corporations, professional groups or others. The typical conception of Internet 'governance' starts by framing the research question and the subsequent empirical investigations through the rather narrow and idiosyncratic, if not unique elements of the technology of the network of networks that is the Internet, especially the rather arcane system for allocating Internet addresses – i.e. names and numbers, and the principal international body, ICANN. (See the *NGO and Academic ICANN Study* (*NAIS*) 2001 and Markle 2003). Until recent scholarship, rarely were more political questions of winners and losers seriously raised and sustained (Mueller and Woo 2005). Furthermore, Internet studies need to examine 'Internet governance' from the unique perspective of the developing countries (cf. Quaynor and Dzidonu 2003). Another egregious omission is that the social origins of Internet governance are too often left implicit and under-theorized. Finally, the 'so what' question of IG remains unaddressed or is assumed by most authors. Beyond a small band of global digerati, why should anyone care? Writers have found it difficult to identify and calculate the actual societal impacts of current governance rules beyond the narrow confines of the Internet itself, to trace their implications for other spheres of life deemed important to citizens and consumers. Therefore the 'so what' question remains problematic for the wider intellectual and policy communities.

Taken together, the extant literature fails to provide a full, rich framing of Internet *governance* which can advance a robust, genuinely comparative research agenda more sensitive to various intersections of the national and international, power and technology, macro and micro levels, to encourage comparisons and contrasts with governance in other areas of the modern political economy. Therefore, let us re-frame the issue as: *what is Internet governance, and where does it come from*?

What is Internet Governance?

The term 'governance' refers to an encompassing set of guiding rules and norms that guide any area of human activity, rules that may be formal or

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informal, and are applicable to virtually any societal activity, whether 'market governance', 'political governance' or 'Internet governance.' 'Governance' extends beyond 'government', where the latter tends to refer to the formal internal processes of state institutions, and their relationships to one another. Keohane and Nye (2002:12) offer a useful definition: 'By governance, we mean the processes and institutions, both formal and informal, that guide and restrain the collective activities of a group. Government is the subset that acts with authority and creates formal obligations. Governance need not necessarily be conducted exclusively by governments . . . [p]rivate firms, associations of firms, nongovernmental organizations (NGOs) and associations of NGOs all engage in it, often in association with governmental bodies, to create governance; sometimes without governmental authority.'

After reviewing other definitions of governance, including that provided by the Commission on Global Governance (Brandt Commission), IT expert Sean O Siochru and his colleagues settled on governance as 'a set of processes that are employed to assess, weigh, and balance the different (and possibly competing) values and objectives inherent in societies' diverse interests and actors' (O Siochru, Girard and Mahan 2002: 15–16). These complementary definitions capture important elements of both collective action and contention, and recognize that 'governance' goes beyond 'government.' They do not tell us however whether some substantive components of 'governance' are more important than others. But we can build on these insights and point to four elements that are especially central to creating new domains of activities like value added telecommunications services.

The approach offered here is consistent with interpretations of traditional political economists like Weber, Polanyi, and Marx, as well as more contemporary institutional scholars like Coase or North. They would probably agree with the following four elements as central to a definition of 'governance', befitting virtually any societal activity: the definition of property rights; the definition of market efficiency; the definition of equity; and the definition of which societal actors are permitted to participate in the authoritative setting of governance rules.

These four core elements can be analysed at both the international and national levels. This essay concentrates on the less frequently studied domestic level of governance. This is not to deny that global institutions like ICANN are important, but in most countries today, especially in the developing world, the most immediate meaning of 'Internet governance' is not associated with ICANN or WIPO, but with the highly contested negotiations over politically sensitive local outcomes (see *NGO and Academic ICANN Study* (*NAIS*) 2001). The ways national authorities determine the rules of the game domestically ultimately shape the price,

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qualities and levels of Internet services that are available to their citizens. More central than ICANN is how one's fellow countrymen negotiate with their local authorities to fashion governance regimes that authoritatively control newly introduced scarce digital resources through their control of markets and property rights. I term this process of selectively re-structuring the rules governing ICT resource allocation 'strategic restructuring' (SRS) (Wilson 2004). SRS is the iterative effort by elites strategically located in a social system to reformulate the rules of the game in ways that conform to their own material and ideational interests. In this context each of the elements constitutes a highly contested critical negotiation point fought over by different stakeholders each seeking to define key aspects of 'governance' in ways that advance their interests.

Property rights

Property rights refers to the authoritatively assigned capacities to acquire, use, consume, derive revenues from, and dispose of a defined set of resources. In the age of the Internet, 'property rights' as a concept has at least two critical meanings directly relevant to our discussion, one in cyberspace and the other in conventional space.

In the first meaning 'property rights' is especially important because of the growth in centrality of valuable resources that are now acquired and deployed via Internet technology and 'located' in cyber-space – text, music, photos, and other forms of what is commonly called 'content'. These new forms of property – intellectual property rights – are made possible through technical and commercial innovations (May 2005, Sell 1998). IPRs are governed by a mosaic of national, regional and international institutions extending from national courts and legislation, to the World Intellectual Property Organization in Geneva, to regional EU rules over content.

While intellectual property rights are indeed starting to have substantial domestic impacts in developing and developed countries (especially pharmaceuticals and pirating movies and music), which cost/save millions, depending on one's perspective, conventional property rights have already had huge impacts on many facets of the political economy of ICT industries. One has only to consider the successive waves of privatization, commercialization and direct foreign investment globally in ICT. In Brazil alone the privatization of state-owned telecommunications firms brought in close to US$19 billion and transferred that valuable property from public to private control. From at least the 1940s onward telecommunication services had been provided mainly by publicly-owned enterprises. These properties – part of the category called public utilities – were owned outright by the state. Only the state had the

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right to acquire, use and provide services through and derive revenues from telecommunications property. Private companies and individuals were forbidden to do so; they had no positive property rights in telecommunications. In order for the Internet to diffuse as rapidly as it did, a new, reformed conception of property rights had to be imposed which replaced the earlier assignments of property rights – private actors now had to be permitted, and indeed privileged, to acquire, own and provide services from Internet properties, the routers, VSATS, leased lines and so forth that form the material basis of providing Internet services. The dominant actors controlling these properties have been (and in many countries remain) state enterprise managers. A critical challenge to the future growth of ICT-enabled societies will be the capacity of new private entrepreneurs to operate competitively against state enterprises.

Some perceptive authors like Lessig (2002) and McChesney (1999) remind us that the intersections of the virtual and the real are more important than either alone, and will increasingly shape Internet governance. Lessig bemoans the loss of public space and popular access to digital commons as corporate interests further define the parameters of public and private property. More and more, ownership patterns in the 'real' world of atoms and molecules are reflected in ownership patterns in the virtual world of bits and bytes (Lessig, McChesney; see also O Siochru, Girard and Mahan). The exercise of power derived from the intersection of new technologies with all their potential, and the realities of market control, is no small matter for the future of ICT governance.

Market efficiency

Over the same half century (1940s–1990s) market efficiency in telecommunications supply was explicitly defined internationally and nationally as consisting of a single large supplier who for technical, economic and national interest reasons was granted a monopoly. Efficient governance meant monopoly supply. For most countries around the world the rules enforcing monopolies in telecommunications were also applied to broadcasting, and in some countries to computer sales. It was declared that the highest levels of market efficiency could be achieved best through a monopoly market structure. As new and very powerful information technologies were introduced more widely, the senior officials in the telecoms industry assumed the same governance rules would also hold for the Internet. Between 1990 and 2000 however, a world-wide political debate was waged between two big camps – those seeking to protect and conserve the governance rules of monopoly and state ownership, and those promoting competitive, private arrangements. Cross-sector

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negotiations over governance had to resolve this puzzle – shouldn't the new technologies also be governed by the same rules that governed other telecoms services?

The newcomers won the ideological battles, in part through backing from powerful global interests in the North, and national monopolies were slowly whittled down through a variety of means – opening up to new (private) entrants (ISPs, for example), or carving up the monopoly firm into smaller pieces that were made to compete, and sometimes kept from expanding into new markets.

Equity

Under the old governance rules of the telecommunications *ancien regime* equity was an important and explicit component of the supply of scarce telecoms resources. State-owned monopoly suppliers were obliged as part of their formal charter from government, on behalf of the people, to provide as close to 'universal service' to their populations as economically feasible. Government leaders' rhetoric promised basic telephone service to their urban and rural constituencies. Though honoured as much in the breach as in fact, 'universal service' was the official norm. The new technological and commercial possibilities provided by Internet made the earlier governance equity formulations problematic, and this led various groups in civil society, in the private sector, and government to re-visit the question of equity in the new distributed, digital environment. It was sometimes raised as a 'digital divide', and sometimes articulated as a shift from 'universal service' to universal 'accesses' (O Siochru, Girard and Mahan). Though mightily opposed by politicians and telecoms industry staff fearing firings, the new formula – more competition, more liberalization and more private suppliers to foster wider distribution – in fact substantially bumped up telecoms service availability, especially in value added markets like mobile phones. Governance rule changes for property and market structure did have major impacts on access to basic and value added services, expanding service for many classes of consumers.

Effective participation

An essential element of governance, perhaps the most central element, is defining the rights and responsibilities of various classes of stakeholders to participate effectively in and influence the rapidly evolving governance systems. Would all citizens and consumers have an effective voice to express their preferences about the Internet to those who make public policy under the new dispensation? More pointedly, which individuals, groups and communities would be authorized to participate centrally in

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setting the new rules of the game governing property, market efficiency and equity, and which would be marginalized, either explicitly or de facto? (MacLean 2005)

Under the old system, active and direct participation in setting policies, especially in LDCs, was narrowly restricted to senior telelcoms ministry officials and their counterparts in the state corporation. The central governance questions became whether the new property rights, market structures and equity norms would have the same patterns of highly restricted participation, or more distributed and open patterns. Since who sits at the table helps determine who gets what services under what terms, this is an important question. Effective participation leads us directly to the second major question of this essay.

Where does Internet Governance come from

Internet governance comes from a social formation which I term the *Quad*, which consists of patterned interactions among elites in four sectors of the economy, with individuals seeking to maximize their material and ideational interests by restructuring selected rules of the game that most affect their access to and control over the scarce services and goods provided by new information and communication technologies.

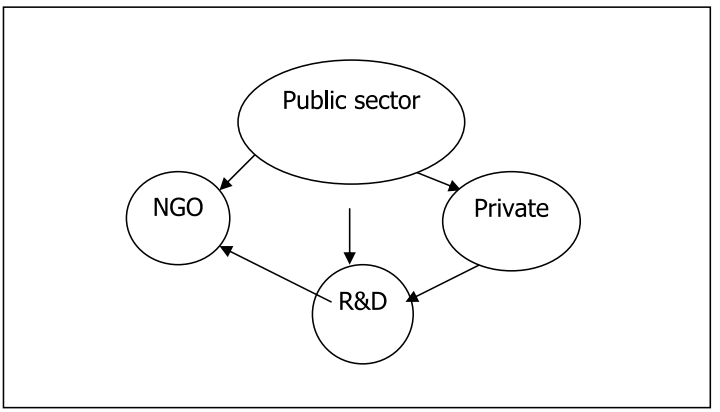
The rules, regulations, norms and expectations we call governance of the Internet emerged out of negotiated interactions. This author's field research in a dozen countries around the world, including interviews with scores of what I term 'information champions', suggests that underlying the evolution of the technical architecture and its subsequent performance is a nascent four-sided pattern of social architecture, whose form was moulded out of the individual-level manoeuvrings of a relatively small number of stakeholders spread across four sectors, each seeking to (re)negotiate new governance rules over resources newly available through technological innovations.

Conceptual outlines

The 'Quad is a useful heuristic that directs scholarly attention to a still emerging, inchoate pattern of social interactions among Internet pioneers who are the stakeholders that actually negotiate governance outcomes. Conceptually 'Quad' refers to persistent four-sided networked interactions of small groups of individuals across four sectors of the political economy – government, private sector, research centres and NGOs. Quad captures regular communications patterns across these sectors (see Figure 1).

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FIGURE 1: *Initial weak networks among the Quad*



All quad networks share at least five common dimensions, even as their relative balances and precise forms will differ from country to country, and from time period to time period within a single country. These include the *regularity* of interactions among the nodes, either intermittent or regular. The Quad also varies in terms of the balance and *diversity* of the interactions which may be truly four-sided, or mainly bi-lateral or trilateral. Some Quad interactions are more *multi-directional* than others. Influence may flow mainly from one powerful actor to the others, or may be more interactive among them. In addition to these three 'external' network elements there are at least two conditions within each Quad which affect its interactions. These include the *internal coherence and cooperation* among the members that make up the Quad node and the *openness* of the node – are the leadership elements secretive and closed, or open to exchanges with other potential partners? Trust plays a major role in successful Quads and in governance. Taken together, these five elements constitute the underlying *social architecture* of the Quad network. The Quad provides the context within which negotiations occur over property rights, market structures, equity and participation rights.

As a heuristic, the Quad is necessarily stylized and categorical. In conducting research on governance, the Quad guides the analyst initially to begin at the individual, micro-level of analysis and then build toward meso and macro levels. Then the analyst can search carefully in all four nodes to see whether there are indeed individuals within the nodes who are engaged with one another in constructing strategic relationships, and who seek to alter the rules of governance. It is possible that in any given country, at any given time, the Quad form will not be present, but a triad might be in evidence. In some instances the researchers may find multiple

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sets of interacting pairs creating more than one Quad. The point of the Quad is not that systematic four-sided exchanges are universal, but that a framework that moves from micro to macro and sector to sector is universally applicable to the analysis of ICT governance.

The Quad concept rests on several key assumptions. First, its potential members come together pursuing overlapping and intersecting, but not identical, interests and goals. Entrepreneurs and social activists will have very different interests in Internet diffusion because they have very different starting points and purposes. It is possible (but not inevitable) that individuals may find common, collective benefits when they ally with one another. Whether they choose to do so is partly an empirical question, since there are negative as well as positive incentives to cooperate. Part of the group cohesion also originates in the inevitable external opposition that other interests bring to bear *against* the initial champions by individuals more tied to the current information elites in the domestic state owned monopolies – such as the incumbent telephone company or state radio. Quad members constitute an incipient counter-elite (Armstrong 1973). The information conservatives seek to maintain the status quo of the top down, state-owned, monopolistic governance system that minimizes most efforts at bottom up participation.

A second assumption is that the social network architecture underlying the Quad of any given country is not permanent, but is typically fluid and evolving, especially in its early period. Furthermore it will be subject to constant renegotiations among the partners (Etzkowitz and Leydesdorff 2000). The precise degree of permanence needs to be analysed and demonstrated empirically.

Third, the four potential nodes in the Quad architecture are never internally homogeneous, and as such there are always cleavages and ongoing struggles within each for dominance and influence to define governance.

A fourth assumption is that these actors eventually become acutely aware of their own interests through competition and conflict with other actors, as they try to articulate and realize their own unique preferences for ICT diffusion.

In this dynamic, multisided network stakeholders craft strategies that reflect their different preferences. Because information *conservatives* benefit from the old governance arrangements, they tend to interpret any movements away from the status quo as a loss. At some point key challengers – the Internet champions – realize they can only achieve the Internet outcomes they prefer – i.e. low cost, distributed, open, interactive and innovative communication services – by opposing and vanquishing the information conservatives.

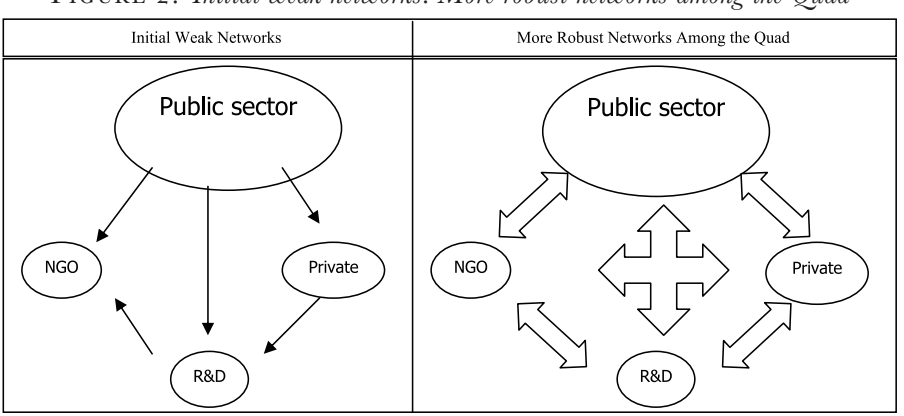
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Thus, governance transformations occur when individuals acting alone and in small groups, driven by their material and ideological interests, act politically to restructure their access to, control over and ownership of information and knowledge resources, the process I call strategic restructuring. In all settings this kind of competition over scarce resources involves a number of political activities like lobbying, organizing constituencies and re-writing rules, including re-structuring institutional incentives, changing property rules and altering regulatory requirements. Over time these strategic restructurings can create new institutions and radically reform existing ones. This process with its origins at the micro-level, may over time create new arrangements at the macro level of social structure.

Comparative research on Internet diffusion conducted by this author in Asia, Africa and Latin America found that the original architecture and dynamics of the Quad relationships changed consistently over time in a similar direction, though not with the same pace or scope. In the early 1990s these inter-elite relations were mostly episodic and involved only a few bi-lateral relations, not fully fledged four-sided relations. The public officials were by far the dominant players, and could easily dictate outcomes. By the end of the decade, there were shifts and the Quad relations became more regularized, diverse, multi-directional and balanced, as other actors like researchers and then entrepreneurs became more active and assumed more leadership (see Figure 2).

These new patterns of IG evolved slowly through negotiations among the stakeholders, a process that occurred in three or four phases. Curiously, the comparative literature on Internet diffusion eschews attention to cross-national temporal regularities. In the first phase there was only a loosely organized ad hoc arrangement among researchers in

FIGURE 2: *Initial weak networks. More robust networks among the Quad*



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each country, mainly reciprocal obligations between labs and research centres within the R&D node. In the second phase, marked by the appearance of the first commercial, non-research Internet Service Provider, a hybrid system of informal university – commercial governance prevailed. Issues of property rights and market structure emerged slowly because uncertainty was so high – none of the stakeholders had a clear, precise idea of what an Internet market would look like or should look like. In the third phase, government was provoked to intervene in the emerging market and create new rules around property and market structure, and later about equity ('digital divide') and participation. Contrary to some theories of political economy or public policy, the new rules were initially promulgated not because of market failures but because of perceived political and commercial threats to the interests of the incumbents. State enterprise managers feared losing market share and money, and ministry officials feared losing power. The rules they wrote reflected their conservative and defensive bias, and initially tended to restrict some players to particular market niches, to set technological standards that favoured incumbents, and closely regulated access to basic facilities. Most countries on their own or in response to international treaties also created brand new institutions to govern the market – regulatory agencies to allocate spectrum and licenses, and to enforce market discipline. Though not identical everywhere, there has been a surprising degree of cross-national commonality in the processes of governance reform, both in the sequences and the identity, self-defined interests and the political behaviours of the main stakeholders.

Theory of the Quad

One component of the Quad theory predicts causal relationships between the architecture of the Quad on the one hand, and the subsequent performance of the ICT sector on the other. More specifically, I posit that the more robust the architecture of the Quad, the better the performance of the ICT sector as a whole. One can be more pointed: the more robust the architecture of the Quad, the faster the diffusion rate of the Internet and the higher the quality of the Internet network in any given country. A robust Quad in a country will exhibit a high score on the dimensions stated above – relations should be regular, sustainable, balanced and multidirectional among the actors. The actors are able to reach common agreement on their preferences and are open to ties with other parties. By contrast, countries with weak, non-robust Quads will have weak ICT sectors where Internet diffusion is slower, market penetration is weaker, the use of the technology is less sophisticated, and other features of performance will suffer. Put most simply, the theory

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predicts that the better the Quads the better the ICT performance, the worse the Quads, the worse the ICT performance.

In this formulation, the elements of governance like property rights or equity requirements are intervening variables between Quad structure and performance. That is, the micro-negotiations that lead to Quad relationships in turn enable and promote, or discourage and thwart, the development of substantive governance rules. Applying this model to actual cases of strategic restructuring of the basic elements of Internet governance, one could for example analyse the evolution of Quad relationships over time as individuals in different nodes seek to re-interpret and re-negotiate existing governance rules to alter them in their own favour.

One can reverse the causal arrow in the theory, to proceed from society to the Quad, which becomes the dependent variable. Not all societies are identical and therefore we expect their Quads to differ in ways that are regular and predictable. Quad architecture and dynamics will manifest elements of societal structure and macro-dynamics. The Quad theory predicts that least developed countries have least developed Quads, and developed countries have more developed and robust Quads. Thus, the lower the GDP per capita, the less robust the Quads; the higher the GDP per capita, the greater the regularity, diversity, balance and multi-directionality of the Quad. This is an explicit relationship that can be confirmed or disconfirmed through field work. Another plausible independent variable that may shape Quad architecture is national institutional forms – does a country possesses a unitary or federal system, or a tradition of extensive or limited government economic regulation? This argument parallels Levy and Spiller's (1996) theory of inter-institutional regularities. For example we might hypothesize that the more centralized a nation's institutional arrangements, the more centralized the ICT Quad. The Quad is the dependent variable and GDP/pc and other structural features like political culture (i.e. norms of authority, participation and obedience) are the independent variables.

Members of the Quad

Each community of interest or node brings its own strengths, resources and weaknesses to cross-Quad negotiations over the terms that constitute the practice of governance.

Public Sector: Individual *public sector* leaders represent institutions with authority, legitimacy and stability, elements sorely needed during the transition. The public sector includes ministries and regulatory bodies. Local and national governments finance and usually control critical infrastructures that provide the backbones of the information revolution.

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In addition, public leaders historically have been able to mobilize the large amounts of capital required for ICT and collateral infrastructures. And not to be underestimated, democratic political leaders can legitimately claim to speak on behalf of the common good, and to speak for all citizens, not just suppliers or members of one or another interest group. At their best, they represent the interests of all. At the same time, government leadership in the Quad has weaknesses – governments and their leaders are usually slow, bureaucratic and risk-averse.

Private Sector: Contrary to the public sector, in the *private sector* we find that characteristics of speed, flexibility and ingenuity are highly valued and rewarded. It is the private sector that is the source of most ICT innovation, dynamism, and finance. Private actors also bring a sense of urgency and a need to move quickly that other leaders often lack. Private actors are more concerned with the efficiency with which resources will be used in the transition. But private leaders in LDCs often suffer from the local perception that they are selfish and illegitimate.

Research and Development Communities: In countries like China, Brazil and the United States it was the leadership in the *research and development communities* that initiated the Information Revolution. It was not the top government leaders, nor the captains of industry nor multinational capital that launched the revolution; rather, it was risk-taking visionaries from the Chinese Academy of Sciences or the Ministry of Science and Technology in Brasilia and the research labs of MIT and CALTECH that launched new technology and new conditions requiring new national governance rules. These leaders led beyond the lab; they mobilized the interests of their counterparts in government ministries to join them in their quest for wider use of ICTs. They were the creators of new knowledge, and the best of them led others to see the potential of the new technologies to improve the economic, political and social lives of their fellow citizens. However, most lacked the urgency to act quickly, and in many if not most LDCs the universities and labs were notoriously under-funded and easily ignored.

Civil Society Organizations: In Brazil, the first non-research, public access Internet Service Provider (ISP) was created not by a private entrepreneur or researcher, but by a *Non Governmental Organization* (NGO) called IBASE. In South Africa, NGOs have been important players in designing public access and credit strategies for under-served black communities (Horwitz 2001). In Bangladesh local cooperatives launched radical experiments through which women rented cell phones and sold telephone minutes to their village customers. NGOs usually are familiar with the grass roots and the 'demand side' of the market. They have practical local knowledge about local conditions, and about how social innovation progresses (or not) in rural areas. While not as central to the

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process as governments, businesses or researchers, community and NGO leaders often have their ears to the ground more effectively than the others. But other leaders often shy away from NGOs because they are seen as lacking widespread legitimacy.

NGO, research, private and public leaders all provide unique types of value added which they can bring to an inclusive national dialogue over governance terms. Yet, while it is true that each kind of leader can contribute uniquely to the transition, one should not be naíve about the difficulties involved. There are huge transaction costs, substantial barriers to greater and more effective communication among ICT experts in the diverse sectors.

Examples of Quad Governance in action

Designing Quad Governance at the global level

To capture what is essentially a highly *political* process of determining governance, it is necessary to go deeply into one or more cases to illustrate how governance outcomes are shaped by power and contention, negotiated in particular institutional contexts. The four core dimensions cannot be captured strictly by quantitative indicators. Let us illustrate these governance dynamics in two different contexts, national and global. The global case reveals how *distributional* issues (i.e. the digital divide) were taken up, debated and disposed of by important international actors. The very visible international debate between 2000 and 2002 over the meaning of the 'digital divide', and the most appropriate ways to incorporate distributional issues into the governance of the Internet and other ICTs is an excellent case of powerful global actors negotiating possible governance reforms across the four nodes of the Quad at the global level. Influential business groups like the Global Information Infrastructure Commission (GIIC) and the Global Business Dialogue (GBD(e)), engaged with powerful national governments through the G-8 meetings of 2000 (Japan) and 2001 (Italy), as did intergovernmental bodies like the World Bank, the OECD and the United Nations Development Program. Research bodies like the Center for Global Communications (GLOCOM) in Japan, or MIT in the US, along with research-oriented global trade groups like WITSA, and national bodies like the National Science Foundation also participated actively in the debates. Civil society bodies from Canada, the UK, Ghana and other nations (sometimes grouped together through global bodies like the Internet Society) were also important and aggregated stakeholders interests. At the end of the day, however, despite all the cross-sector

https://doi.org/10.1017/S014381 4X05000019X Published online by Cambridge University Press

communications about the popularly-called digital divide, the rules governing distributional and equity matters did not change much at all. By contrast, rules governing market structure and property rights were changed explicitly and radically. To the extent distributional rules did change, they were altered to reflect the new parameters of the reformed property and market structure rules, and it came to be expected that consumers would buy their access from competing vendors; the assumption of competition was, however, often quite heroic. The most recent expression of very modest attention to equity norms at the global level was the lack of effective governance change at the World Summit on Information Society held in Geneva, December 2003. ICT distribution has expanded in most countries, but not the underlying, foundational rules of how citizens or consumers get access to ICT resources.

The bottom line is that the negotiations in the international fora over the most appropriate rules defining efficiency, market structures and performance led to radical reforms, mainly from the top down, through the powerful interventions of intergovernmental organizations like the World Bank, and international private institutions like the International Chamber of Commerce. As we saw above, equally transformed were the governance rules of property ownership – a dominant international coalition overturned a half century of international support for direct public ownership and control over ICT assets, and replaced the old governance norms with new ones that privileged property ownership by private actors. "Access" remained as a residual category, driven mainly by a mixture of government policy and private markets.

All these international reforms were negotiated across a somewhat wider set of fora than in the past. The results included new governance institutions, procedures and substantive policies, as well as altered existing ones. Thus, the creation of new bodies like ICANN, and the radical reforms to the intellectual property rights regime must be seen side by side with the transformation of other norms governing more traditional commercial relations in markets for older goods and services. It was not ICANN's creation that permitted the radical reforms in market structures and property rights of global markets for ICTs including the Internet; rather, it was the changing positions of the dominant global coalitions and their expression in property, participation, equity and efficiency that made ICANN and other regime reforms more likely.

The negotiated ICT governance changes at the global level had their important counterparts at the national level. As at the global level, there was not always a sharp dividing line between the four main issues, but together they were changed radically, reflecting institutional reforms, and new preferences and capabilities among powerful players. In the serious negotiations over the terms of Internet diffusion, some global

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stakeholders were explicitly empowered, while others were equally explicitly disempowered. This was inevitable if change was to occur. Similar outcomes – identifiable winners and losers – also resulted from negotiations within nations, as we see in the case of Brazil.

Quad Governance negotiations at the national level: the case of Brazil

The highly charged political process of defining Internet governance parameters is even more stark at the national level. Brazil provides an outstanding case through which to view reforms of Internet governance, in part because the country was also experiencing a contentious political transition at the same time the Internet issues were being fought over. Between 1992 and 2002 the country was returning to and consolidating civilian rule. This was also the decade of the emergence of the Internet; together these brought especially intense local negotiations over market structure, ownership equity and terms of participation. The Brazilian story, though with its own unique features, was in essence repeated over and over in many countries, both developed and developing: a powerful coalition of pro-monopolist statist interests was opposed by a counter-coalition with diametrically opposed ideas about Internet governance.

In Brazil, the governance elements of property rights, market structure and participation all converged in mid-1990s through a multi-sided series of negotiations across the Quad among policy entrepreneurs in the Ministry of Communications, the Ministry of Science and Technology, the state enterprises Embratel (long distance) and Telebras (intra-state), the office of the President, NGOs like IBASE and semi-autonomous research bodies like CNPq, a few universities and some private interests. At the heart of the matter was the struggle by the leaders of the state-owned monopoly operators to defend their long standing domination of the telephone market, and extend it farther into the brand new emerging markets for enhanced services including the Internet. On the property rights dimension, Telebras and Embratel wanted government officials to continue privileging state property over private. For market structure, the state enterprise leaders insisted their monopoly should be legitimated and extended to the Internet market. They wanted to restrict legitimate participation in policy making to the usual suspects – themselves, and a few trusted ministry officials who also favoured state monopolies.

In 1994 Embratel convened a large meeting of current Internet suppliers, large customers and other interested players, and the management made it quite clear they intended to dominate the value added market, and invited all present to willingly cede their places. Instead, the meeting provoked a sharp reaction, and helped mobilize opposition to

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Embratel extending the governance rules of the old regime into the new markets.

Whether the big current incumbent or the smaller start-ups would win this David and Goliath battle would ultimately be shaped by politics, ideology and power. The governance battles were conducted very much in line with what a Quad model would predict – long-standing social relations among key individuals across different sectors, built on years of trust and cooperation, were further deepened and extended through negotiations over governance. Among the small handful of Internet champions, strategies and tactics were developed to blunt the counter-attacks of the incumbents while advancing the cause of bottom up distributed access for everyone, provided by private and non-profit ISPs.

Social origins of the Brazilian Quad

The success of the information champions across the Quads was made easier by their common backgrounds and experience. The small group of men who pushed themselves to the forefront of Brazil's changing Internet policy in the late 1980s and the 1990s were remarkably similar in their social backgrounds and professional experiences. Most were born and raised into the middle ranks of Brazil's professional classes. They are for the most part the sons of lawyers, engineers and doctors. They were educated in Brazil for their first degrees, and several went abroad for their advanced degrees, either to the UK or the US. By training and inclination these were men who enjoyed working at the intersections of science, technology and public policy, especially when in the service of their conception of the public good. This first generation of information champions was uniformly public-minded. The preferred terrain on which to pursue their personal and professional ambitions was the public sector, whether in universities, public research centers, or public administration. Individuals from the private sector were rather surprisingly absent from the first wave of Quad innovators. Only later did entrepreneurs enter the fray.

Cementing these social structural and professional institutional commonalities were more direct ties. For example, two of the leading lights in the group attended high school together, and also went to the same graduate school in the original heartland of cyberspace, California. Not only were Ivan Moura Campos and Carlos Jose Pereira e Lucena at UCLA graduate school together, but they both worked closely with one of the founding fathers of the Internet in the US, Vinton Cerf.

These micro-level interactions across the sectors had major consequences for later Internet governance as these individuals negotiated their vision of Internet's promise through Brazil's turbulent transitional

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politics starting in the early 1990s. Thus, most of the Internet enthusiast group who came together in the mid-1990s had already met one another during the previous decade, rising to senior positions in the policy world where they could influence the design and conduct of ICT policies. The key four or five people included Campos, who served as the top civil servant in the federal ministry of Science and Technology (S&T), and as minister in a state S&T ministry, and remained an influential senior official for much of the nineties. Also influential was Professor Lucena who chaired the sub-committee on Informatics and Development as a member of the Presidential Advisory Council on Science and Technology. Other members of the group included the director of the Brazilian state software export body, SOFTEX, as well as well as two others active in the non-profit, grass roots communities. The group was not just a one-time, coincidental collection of occasionally interacting individuals operating over long distances. Instead, they remained in close contact over the years, trading professional positions, providing ideas and advice, doing political deals, and pushing forward the odd idea of something that came to be called the Internet. For them, political self-consciousness was a strategic advantage. Indeed, they worked together so regularly in the early 1990s, and so often in a mode of stealthy opposition to prevailing big bureaucracy policies, that they began to refer to themselves as 'The Gang of Four', after the small group of conspirators who pursued Maoist doctrine after the death of the Chinese supreme leader in the 1970s.

Among the Gang of Four and others in the technocracy who knew the value of the Internet, there was growing concern in the mid-1990s that Embratel would stifle the Internet, or certainly dampen demand with high prices and gross inefficiencies. They saw the need for a new governance model, and began to think about alternatives to a complete Embratel monopoly. In this context, Campos wrote an article for his boss, Minister Vargas, then head of the S&T Ministry, that attacked the telco's monopoly and said that the state managers of the national backbone (RNP) and perhaps others should be allowed to compete directly with Embratel. The article appeared in a prominent Brazilian news magazine and attracted considerable attention, especially in the days when rancorous political debates were raging over whether or not to privatize and open up the economy to competition.

Leading the privatization debates on behalf of President Cardozo was his closest confidant and advisor, Sergio Motta. A finely tuned political sense, tremendous loyalty and years with Cardozo in the political wilderness made him one of the most powerful men in Brazil, and Cardozo appointed him Minister of Communications. When a friend sent him a copy of the Vargas article, Motta invited several people

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including IT activist Carlos Aphonso to dinner to discuss possible reforms. Soon afterwards, he instructed his senior advisor to get together with his counterpart in S&T (Campos again) to work out some options for government. The two advisors' biggest goal was to keep Embratel from becoming a monopolist, and make it compete with other companies in the Internet market. They recommended what they thought the government could bear politically – backbone competition, universal access to dial up service, and most radical of all, declaring the Internet a value-added service. This last would mean that by statute, Embratel would be excluded from the skyrocketing new market.

The powerful Embratel on one side, and S&T and a handful of researchers and non-profit agitators on the other did not seem like a well-balanced fight. But when Motta announced his final decision he backed the anti-Embratel coalition unequivocally. Not only did he declare Internet a value-added service, he decreed that state companies would be forbidden to compete in Internet markets, leaving the arena open to private firms, most of whom were smaller and medium sized companies. The state companies were furious. They tried to reverse the decree, but failed. The new principles governing property rights and market structure would stand.

Without the decree most ISP business people confessed that they probably wouldn't be in business. It is almost certainly the case that as a result of the governance reforms Internet services were far cheaper and spread faster to more people than would have happened under the state monopolies. Restructuring governance had real consequences for service delivery.

Conclusion

The Brazilian information champions, mostly professional colleagues and friends based in government, civil society and research, exhibited principal features of a maturing Quad formation – *regularity of interactions* (in this case over many years in a variety of different institutional settings); *distribution* of individuals across three key sectors, and with ties to the fourth; and interactions that were *multidirectional*; none of the Gang of Four or their colleagues was all powerful. They all shared useful information, advice and political support, and influence flowed in all directions.

The outcome of those Quad relations was not simply a one-off transaction but long lasting strategic restructuring of the basic rules of the game – i.e. of governance – that shaped subsequent behaviours and performance in the national ISP markets. There were real winners and losers: property rights were re-assigned away from state elites, and toward

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private owners. The governance rule of efficiency and market structure was tilted away from monopolists and toward people who could be competitive, and by the end of the decade of the 1990s there were more than 325 ISPs in the country. More Brazilians had access to the Internet. Changing governance rules in the market contributed to real differences in performance. And in political terms, participation by non-state actors and researchers was much greater and they were afforded new legitimacy in the halls of power, especially to the extent they took pro-reform positions coincident with the preferences of President Cardoso's dominant political coalition.

By defining 'Internet Governance' (IG) as broadly as possible; by analysing IG at the national and sub-national levels; by insisting on the micro-foundations of governance reforms; and seeking out the social origins of IG in the context of the Quad, this analysis is able to provide greater depth and breadth to the 'what', the 'why' and the 'so what' of Internet Governance, thereby complementing other studies of e-commerce or e-government applications.

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https://doi.org/10.1017/S0143814X0500019X Published online by Cambridge University Press