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Sectors and Strategies of Global Communications Regulation

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Summary: Global communication networks, in particular the Internet, challenge the traditional systems and procedures of regulation, which are national or regional but not global. It is evident that solely market processes will not assert the guidance and control needed to escort the growth of the network and its use for service provision and electronic transactions. Introducing the conceptual distinction of coordination and regulation we identify areas in which government intervention is unnecessary and where it is indispensable. Then, examining different areas and strategies of regulation we highlight crucial problems and regulators' responses concerning electronic commerce and the protection of third parties. This helps identify trends and specify areas of regulation with and without governments involved. It shows that global communications is governed by a patchwork of few uniform international legal rules, sparingly harmonized national regulations at the regional level, a number of laws framing schemes of self-regulation complemented by unregulated self-regulation and last but not least a growing number of legal interface solutions. They mediate between conflicting regulatory systems without affecting their autonomy.

A. Introduction

It is undisputed that the process of globalization relies to a considerable degree on information and communication technology. Innovations in this area have kept reinforcing globalization. Most prevalent is the Internet which some ten years ago lost its role as a medium of communication confined to academic circles in industrialized countries. Since then it has become an everyday means of communication for private and professional users on a global scale. As digital techniques are spreading, globalization has taken hold of all sectors of the communications industry. A range of new services such as pay-TV or interactive home shopping have evolved which challenge the traditional pattern and institutions of content regulation.

Thus, globalization of communications on the basis of digital technology has two crucial dimensions: an infrastructure dimension concerning the technical network and a content and services dimension concerning the usage of the infrastructure. We can observe processes of industrial restructuring in either dimension. Small start-ups have developed into giants and achieved a dominant market position: Cisco, the manufacturer of Internet routers, being the most prominent one. New corporations such as Vodafone in the area of mobile telephony have taken over

competitors in order to increase market share and offer services in all parts of the world. Most spectacular have been mergers which created global players that cover every step in the media production and distribution chain. America Online combined forces with Time Warner and Viacom merged with CBS creating vertical conglomerates that are able to provide and transmit in their own networks comprehensive multimedia content and services for the world market. The regulatory implications and consequences of these developments are momentous: not so much concerning the basic tasks and objectives of communications regulation which remain basically the same but the more so regarding the scope, the instruments and the agents of regulation.

The following analysis will mainly focus on the Internet and on Internet based services but it will briefly also touch upon other sectors of technical communication. It first introduces an analytical distinction of regulation and coordination which helps to assess where public intervention is required and where private initiative will provide solutions. In a second step specific areas of regulation will be examined to identify the relevant strategies and institutions shaping these strategies. Then, by looking at a perspective for global communications regulation, we will attempt to classify our findings and find trends in regulation. Some final remarks will refer to the future role of law.

B. Coordination and regulation

A complex communication system or infrastructure such as the Internet can be regarded as an opportunity structure which provides various options to exchange data and content in different forms and at different levels of technical quality and sophistication. Making use of these options and developing them further requires to some degree concerted action on the side of equipment manufacturers, network operators, service providers, users and public agencies at the national and increasingly at the international level. The action aims at steering and guiding the development and use of the infrastructure to the benefit of the actors involved or affected.

Concerning the type of action we can draw an analytical distinction along different dimensions between *regulation* and *coordination* (Schmidt/Werle 1998: chapter 4; Werle 2001a). In the Diagram 1 we illustrate this distinction focusing on technical and economic aspects of the infrastructure. The dimensions of action include the aim, the mode and the means as well as the economic effect of concerted action.

Diagram 1:

Steering technical infrastructure: An analytical distinction of types of action

	Coordination	Regulation
Aim	Interoperation of technical components in "networks", compatibility	Prevention of negative externalities of technology
Mode	Voluntary negotiated agreements, market processes	Political imposition, hierarchical political governance
Means	Conventions, contracts, standards	Legal rules, political ordinances
Effect	Reduction of transaction costs	Internalization of negative externalities

Coordination aims at achieving compatibility or frictionless interoperation of technical components which includes users' easy access to the network. It is attained on the basis of negotiated agreements or through market processes and takes the form of contracts or likewise of (compatibility) standards. The (intended) effect of coordination is a reduction of transaction costs. Frequently another effect is that positive externalities are generated. That means that users, but also service providers or other "participants" in the network increasingly take advantage of the network's growth without having to pay for this additional benefit.

Regulation aims at preventing negative externalities such as technical accidents, electronic intrusion into privacy, infringements of (intellectual) property rights or, more generally, over-utilization of a common pool resource (Ostrom 1990). The means of regulation are legal rules or political ordinances. They are hierarchically imposed by governments or other political authorities. The (intended) effect of regulation is the internalization of the negative externalities by those who have induced them.

Apparently the incentive structure of coordination differs fundamentally from that of regulation. Equipment manufacturers, network operators, service providers and users usually share an interest in reducing transaction costs which are often very high with network technologies unless agreements are reached concerning for instance the use of common standards. Although the existence of such a common interest does not rule out that preferences diverge with regard to the best solution it is likely that a common solution evolves either through a consensus reached in negotiations of the actors who acknowledge their interdependence or as a de-facto convention emerging in the market. The solutions tend to be self-enforcing, i.e. they enjoy a considerable likelihood of compliance.

Regulation in contrast depends on some kind of political authority to be enacted and to become effective. Actors who benefit from the provision and use of a product or service will not voluntarily be inclined to bear costs or other burdens which as a side effect of their activities are incurred by third parties who are not directly involved but (negatively) affected by these transactions. Thus, political imposition of regulations appears to be necessary to avoid negative externalities.

Put in game theoretic terms, often coordination is akin to a “battle of the sexes” in which actors strive for a common solution but initially disagree as to which particular solution to choose. Regulation, on the other hand, shows features of a “prisoners’ dilemma” in which incentives to cooperate are so weak that, as a rule, no common socially beneficial solution is achieved voluntarily (Snidal 1985). The latter problem can only be overcome in a “collaborative regime” based on enforceable agreements secured by hierarchical political governance while coordination can be achieved on a voluntary basis by institutionalized self-coordination in a “coordinative regime” which provides opportunities to communicate and to negotiate a common solution (Stein 1990).

The distinction of coordination and regulation has looked at costs and benefits from a rational perspective focusing on interest and utility. But regulation which often takes the form of legal rules or law also engages normative considerations and touches upon social values which are symbolized and reinforced by these rules. “Content” regulation, for instance, focusing on what is communicated or broadcast via the channels of a network is usually based on normative rather than economic or commercial criteria. It should also be emphasized that the distinction between regulation and coordination is not a binary one. Specific means to shape and channel the development and use of technical infrastructures often blend elements of coordination and regulation. But the analytical distinction helps to assess if an intervention of governments or public agencies in shaping the development and use of an infrastructure is unnecessary (coordination) or indispensable (regulation).

C. Areas and strategies of regulation

I. Provision and operation of networks

Worldwide communication requires as its backbone a global technical infrastructure. The Internet provides such an infrastructure. Its generic protocol stack TCP/IP runs “on top” of technologically heterogeneous telephone and data networks, fixed as well as wireless. Providing transparent transmission of all kind of digital information (so called end-to-end transparency) TCP/IP at the same time allows a broad range of programs and procedures to be run on the application layer – virtually without any technical or organizational restriction.

This flexibility notwithstanding, the majority of telephone networks and many data networks on which TCP/IP runs evolved before the Internet started to grow and they were dedicated to other purposes. For many decades these networks were

installed and operated by public administrations or private companies which enjoyed a monopoly position within their national confines. Coordination and regulation were inseparably intermingled. At the international level, however, the national monopolies had to reach agreements in order to facilitate cross national communication. These agreements include the allocation of frequencies, the development of an international telephone numbering scheme or the adoption of interface standards to secure frictionless interconnection of national networks. Some of the issues addressed at the international level were regulative but the majority were coordinative in nature. Failure to coordinate policies on noninterference of frequencies and on the compatibility of national networks would have resulted in disadvantages for all nations involved. Therefore, the need of a common solution was rarely contentious. But more often than not there was disagreement as to which coordinative solution to choose because the economic benefits of different solutions were asymmetrically distributed (Krasner 1991).

Traditionally, the International Telecommunication Union (ITU), an international organization within the United Nations system, allocates broadcasting frequencies to nation states and coordinates the cross border use of these frequencies at a global level. The determination of frequencies issued by the ITU takes the form of treaties under international law that are binding for the member states of the ITU. Coordination of telephone and data networks is facilitated mainly through technical standards which are adopted as recommendations. No network operator is obliged to implement the standards but once adopted they are likely to diffuse internationally (Holznagel/Enaux/Nienhaus 2001: 205-211; also Genschel/Werle 1993).

After liberalization, the ITU and other "official" international and regional organizations of telecommunications coordination have lost leverage. Non-governmental organizations (NGO) such as industry consortia and forums provide technical standards to coordinate the operation of networks and the provision services. Some of these organizations are quite exclusive but many rely on a broad membership (Werle 2001b). The existence and market success of their standards – either complementary to or in competition with "official" ones – proves that indeed coordination can be achieved without the involvement of governments or other public actors.

Due to the decentralized structure of the Internet the use of uniform and open standards is of particular importance. Only in the days of the Internet's forerunner Arpanet could standards be hierarchically imposed. Switching from an earlier network control protocol to TCP/IP was mandated by the US Department of Defense (DOD) respectively its Advanced Research Project Agency (ARPA) back in 1982 (Norberg/O'Neill 1996: 183-196). Beginning in 1985, after the period of absolute governance and ownership by the DOD the network was opened up to develop into an academic and research network. In the decade from 1985 to 1995 when the US National Science Foundation funded the central components of the Internet two organizations evolved which have provided the vast majority of standards used in the Internet.

The first is the Internet Engineering Task Force (IETF). Participation in the IETF and its numerous working groups is open to anyone and a broad and unrestricted discussion of proposals via electronic mailing lists is possible. To be adopted as a standard at least two independent working implementations must have been completed. The standards are accepted on the basis of consensus and published online in the so-called Request for Comments (RFC) series. The standards are available free of charge, as are those adopted by the World Wide Web Consortium (W3C). The W3C is the other decisive Internet standardization organization focusing on components and applications of the World Wide Web. Basically all standards of the web architecture that are of relevance today have been developed by the W3C. Like the IETF the W3C is a non-commercial organization of volunteers, but the volunteers are organizations rather than individuals as with the IETF. Meanwhile the W3C includes some 500 member organizations – companies from the industry and service sectors as well as research and education institutions. Standards are also adopted on the basis of consensus although in cases in which consensus turns out to be difficult to achieve Tim Berners-Lee, one of the inventors of the WWW who is heading the W3C, appears to have the final say (cf. Gillies/Cailliau 2000).

Technical standardization of the TCP/IP-based Internet and the World Wide Web has remained to be a coordinative task at least as far as the infrastructural functions are concerned. Direct intervention into the standardization process by governments or other public agents was not necessary. However, some organizational and secretarial costs of the IETF have been covered by public funds. Governmental support facilitating rather than determining technical coordination as a bottom up process may indeed be needed to avoid under-provision of coordinative solutions such as technical standards (Werle 1995).

Public support may even be more urgently required if and when the transition from an established to a new and better coordinative solution is at stake. Transition is particularly difficult in decentralized systems even if all individuals would benefit from it (cf. Leibenstein 1984). The new generation of Internet protocols offers a most impressive case in point. In 1998, after four years of work, the IETF published as a draft standard a new Internet protocol, the so-called IP version 6 (or IPv6), also known as IP Next Generation. Ipv6 is regarded as a necessary means to enlarge the address space and augment Internet functions including a stronger encryption sequence and high quality services needed for sophisticated (real time) applications. While the development of the new protocol proceeded smoothly within the IETF the migration from the current Ipv4 to the new version turns out to be difficult even though Ipv6 is backward compatible (to Ipv4) and broad consensus prevails that the features of Ipv6 are urgently needed in the near future. Vendors hesitate to build Ipv6 routers or operating systems as long as users do not have the longer addresses; and users do not demand these addresses as long as no high quality Ipv6 products are available which do not appear on the market as long as operating systems and Ipv6 routers are lacking. Overcoming this “lock-in” of an existing standard (cf. David 1985) can be facilitated by governmental support. Recently the European

Commission has taken the initiative to promote switching to Ipv6. Erkki Liikanen, the Commissioner for the Information Society, told an industry task force of Internet service providers, telecommunications operators, equipment suppliers and research networks, that it was imperative to swiftly migrate to the new protocol because the Internet might run out of addresses in 2005. This would jeopardize the successful launch of the new generation of mobile communication devices (3G, UMTS) because to be integrated with the Internet each device would require to have its own Web address.

While the allocation of an unambiguous *address* (i.e. 32 bit numbers) to a each host connected to the network is essential for the routing and transmission of data packets and thus the functioning of the Internet the introduction of a system of domain *names* which are visible in E-mail and WWW “addresses” was intended to provide human-friendly identifiers and thus serve the ease of use of the network. Names are easier to remember than numbers. Originally designed to solve a coordination problem the domain name system (DNS) – especially names in the generic top level domain “.com” – were increasingly regarded as a valuable business resource which could be used as marketing tools and brand names. The process of allocating domain names changed its character (Mueller 2000). It was transformed from an act of coordination to one of resource allocation with negative externalities for those who claimed a specific domain name (e.g. trademark owners) but found this name being allocated to somebody else (e.g. a competitor) at low or no cost (originally on a first come first serve basis).

The DNS provides a good example of how coordinative and regulative elements are blended in the governance of the Internet. In the Diagram 1 we have argued that hierarchical political governance is the mode to process regulatory issues. If we look at the organization which is responsible for the allocation of names in the generic top level domains we find a private non-profit corporation incorporated in California – a private organization and not a government or an intergovernmental organization such as the ITU. The Internet Corporation for Assigned Names and Numbers (ICANN) assumed responsibility in 1998 (Mueller 2000; see for details of the structure of ICANN <<http://www.icann.org/general/abouticann.htm>>). ICANN is the successor of the Internet Assigned Names and Numbers Authority (IANA) which worked on the basis of government contracts as a kind of US government agency. After the privatization of the Internet the US government opted for what has been called “regulated self-regulation” in the area of domain name assignment (Knill/Lehmkuhl 2002: 53-55). It delegated authority to ICANN subsequently weakening its own central role in this area. But there remains a hierarchical political element in this arrangement. ICANN operates in “the shadow of the state” from which it has borrowed its authority. Nonetheless ICANN has the capacity to formulate and implement the substantive and procedural rules within its jurisdiction by itself. This includes the capacity to authorize new top level domains and to establish a dispute resolution mechanism to process conflicts over domain name allocation (see Lehmkuhl, this issue).

In a certain sense ICANN encompasses the classic state functions of the legislative (i.e. the determination of top level domains), executive (allocation of sub-domains) and judiciary branches. However, any separation of powers is missing as is an unambiguous democratic legitimacy. This is why ICANN has been a magnet for controversy since it was created in 1998 to assume control of the domain-name system from the U.S. government. ICANN is charged from different quarters to operate too slow, to act in an opaque and arbitrary manner and to ignore the voices of grass-root civil society groups. Critics stipulate to strictly limit ICANN's capabilities so that it does not try to regulate Internet content, or get into other areas of regulation such as consumer protection – an indication that ICANN is poised to increasingly take on regulatory functions.

II. Setting up a regime for global commercial transactions

Another area of coordination and regulation is the use of the technical infrastructure for commercial transactions of information, goods and services across all borders. It includes establishing markets or more specifically a uniform global framework of conditions for electronic commerce encompassing a broad spectrum of different business models. The conditions to be created and safeguarded have to meet a number of prerequisites: among them, first, that they need to ensure business be done safely and in a secure way over the Internet and, second, that the market rules for e-commerce be internally flexible and open for innovation and at the same time firm enough to cope with crisis situations and with destructive attacks from external parties. Most of these tasks are regulatory in nature. Thus, again political hierarchical governance seems to be indispensable. The problem is not that such governance structures do not exist. Rather in cross border transactions there is more than one such political authority involved and the rules which have evolved to govern the national markets often differ from one country to the other. Only in a limited number of cases can we find internationally shared or accepted rules. Whenever national rules collide at the international level private actors as well as governments are affected and common solutions have to be found. These solutions may constitute sectoral international regimes combining intergovernmental agreements, bilateral contracts and industry self-regulation (see Schorkopf, this issue).

To be sure, an encompassing global regime governing commercial electronic transactions has not evolved yet, and it is unlikely to evolve. But we can observe a number of rules and regulatory initiatives existing in the USA and in Europe which have the potential to develop into global standards of coordination and regulation of electronic market transactions.

a. European initiatives

Prior to the start of any electronic commerce, whether goods or services, a contract has to be concluded. The negotiation, formation and performance of contracts thus is of crucial importance in e-commerce. The European Commission has taken the initiative in this area to provide a stable framework for electronic commercial transactions in order to help avoid market failure. In May 2000 the Commission passed the E-commerce Directive, which has to be transformed into national law by the member states within 18 months. In one of its central parts the Directive does not directly create new law but determines whose country's law applies if electronic transactions cross the borders of the member states in the EU. According to the Directive, the country-of-origin principle will generally apply. Companies selling goods or services electronically will be subject to the legal framework of the member state where they are based. The seller's country's law will also apply to the customer no matter in which member state of the EU she lives. In other parts the Directive establishes far reaching information requirements aiming to promote the transparency of cross border trade for the consumers. It also provides liability rules which are of paramount importance to Internet Services Providers and other intermediaries in electronic markets (see Frydman/Rorive, this issue).

Apart from binding regulations concerning treaties and consumer protection, a functioning market regulation also needs as an integral part a security concept which guarantees the confidentiality and the authenticity of all transmitted data. The conclusion of a contract via the Internet can only form the basis of a business transaction if the parties involved can be sure that they have entered into a contract with the intended party. At the same time the confidentiality of sensitive data must be ensured when transmitted. Cryptography and digital signatures are the key techniques in this area. The latter were subject to the EU-Directive on Electronic Signatures which was adopted in December 1999. Without going into further detail of the Directive (see Fuhrmann, this issue), it should only be mentioned that it ties certain legal consequences to the use of a digital signature, and seeks to ensure that the party using the signature can be identified and that the user has exclusive control over the certificate. Nearly all member states have implemented the requirements of the EU-Directive in national law. Given that the parties involved in an electronic transaction have a common interest in authenticity securing provisions it is surprising that an EU-wide market has not been established yet for certification services. One reason may be that, in fact, the process of harmonization has been delayed because technical standards are still missing as are rules necessary to implement the rather weak requirements of the laws.

All in all the European initiatives to create rules for e-commerce reveal that the harmonized measures adopted in different areas have meant considerable progress on the way to the establishment of a market order for e-commerce. Even if certain areas remain to be regulated, important aspects such as contracts, consumer protection and digital signatures have been dealt with. What is still missing, however, are instruments and rules to protect this market order against criminal acts. Though the

EU has recognized the importance of harmonizing the criminal laws of the member states, binding enforceable rules still do not exist in this field. In the first half of 2001 the Commission announced that it intends to draft some kind of Directive on cybercrime. Doubts have been raised that such a Directive will meet all requirements to protect the electronic commerce infrastructure. Thus, for the time being the Council of Europe's European Convention on Cybercrime (see Mayer, this issue) which has recently been adopted by the EU Council of Ministers is the only substantial initiative in this field.

b. Initiatives in the USA and at the international level

Concerning technical and economic developments the USA is ahead of Europe in electronic commerce with regard to the establishment of market rules for e-commerce. The foundations were created by a regulatory framework program developed by the US government in July 1997. It was followed by a number of additional, more limited initiatives that cannot be presented in any detail here. One can say, however, that a fairly comprehensive set of legal-economic rules govern e-commerce in the US (Perritt 1996).

But as the Internet is neither an exclusively American nor a European phenomenon a global regulatory framework is needed. The public and private initiatives at the international level have produced a patchwork of rules and recommendations that lacks consistency and comprehensiveness. Intergovernmental and other international organizations, bilateral and multilateral governmental groups, the Trans-Atlantic Business Dialogue (with global players such as Bertelsmann and AOL/Time Warner) as well as the Global Business Initiative have produced all kinds of documents, memorandums and agreements the majority of which are not legally binding. They complement existing elements of a better established rule system for conventional international trade which in principle applies to electronic transactions, too. Taken together they appear as constitutive parts of an emerging international electronic commerce regime (Schorkopf, this issue) which has proved to be effective especially in areas where the problems they address are coordinative rather than regulative.

The regime includes interface solutions such as the safe harbor or the country-of-origin principles which leave contradicting national commerce laws unchanged but facilitate commercial cross border transactions (Farrell, this issue). In creating an international regime private actors, in the first place large corporations, are often as influential as, if not more influential than, public actors (cf. Ronit/Schneider 2000). Private actors, in this case "transatlantic stakeholders" such as the Trans-Atlantic Business Dialogue and the Trans-Atlantic Consumer Dialogue, were also involved in the negotiations on an agreement between the United States and the European Commission on "Guidelines for Increased Regulatory Cooperation and Transparency" (available at <http://europa.eu.int/comm/enterprise/enterprise_policy/gov_relations/regulcoopguidel.htm>). With a look at the evolving transatlantic elec-

tronic marketplace they were developed in the context of the “Transatlantic Economic Partnership (TEP)” which entails bilateral US-EU actions in the area of technical barriers to trade. The objectives of the legally non-binding Guidelines are to improve cooperation between US and EU regulators and to promote transparency to the public in establishing and amending regulations. They are to “contribute to achieving high levels of protection for health, safety, consumers and environment” (Guidelines: II 5 a).

III. Protection of third parties

In a broader sense the establishment of a stable market order for e-commerce in the context of new media and communication technologies includes measures such as those suggested in the Guidelines to protect health, safety, consumers and environment. These measures often aim at avoiding negative externalities of technology based transactions and by this protect third parties which although not directly involved in these transactions may be negatively affected by them. In e-commerce especially the aspects of child and data protection have been addressed (Holznagel 1999). These problems are of a global nature. Documents negatively influencing the moral development of children can easily be spread and personal data can illegally be obtained on a worldwide scale. Reaching international agreements in these areas is difficult not only because business interests diverge but also due to different ethical and cultural norms and values of the countries involved (cf. Committee to Study Global Networks and Local Values 2001).

a. Child protection

Early on Europe addressed the problem of cross border child protection, originally in the area of TV broadcasting. The first Television Directive, issued in 1989, aimed at harmonizing the national regulations concerning child protection across the European Community. More than other regulations child protection had to bridge considerable differences between single member states. What is considered immoral in Catholic Ireland may very well be compatible with more liberal Dutch moral concepts. Thus, the level of child protection envisaged by the first TV Directive is generally considered to be relatively low. Given this fact, it is not surprising that any European child protection regulation applicable to the Internet is lacking. Thus only national provisions – which are also of limited effect – apply.

Similar to Europe child protection has also been an issue in traditional media regulation in the USA. Even the most relevant bill, the Child Pornography Prevention Act of 1996, does not contain any specific rules concerning online activity. Such rules could be found in the Communications Decency Act and the Child Online Protection Act, which did not prevail under judicial scrutiny. They were squashed because they conflicted with the First Amendment to the US Constitution

which gives the value of free speech more weight than essentially any other value (Holznagel 2000).

As a result the US parliament and the US government have opted for “regulation through technical means.” They are advocating the use of specific filter systems for the Internet. Users can download these filters free of charge and can install them on their own computer systems. Filtering technology such as the Platform for Internet Content Selection (PICS) developed by the World Wide Web Consortium provides a kind of content labeling infrastructure for the Internet. It enables users to selectively block content. PICS relies on content rating and labeling by Internet content providers, third parties such as government agencies or directly by the users (Resnick/Miller 1996; <<http://www.w3.org/PICS/>>). Thus, PICS provides a technology based solution to a technologically induced problem (cf. Weinberg 1997). This solution relies on (industry) self-regulation and individual self-determination. Only the general framework for the provision of filtering technology is provided by the government. Filtering technologies usually do not eliminate content from the Internet but only control access to or diffusion of content in the net. Using these technologies adult users can prevent minors from accessing and viewing restricted content.

Apparently child protection cannot be attained at the global level by globally harmonized rules. The European experience in this field has shown that the necessary consensus on uniform values and morals ultimately cannot even be achieved even in one single region. The only realistic possibility appears to be a definition of absolute minimum standards, in the area of child pornography for example. This, however, is not so much a problem that is to be dealt with by child protection regulation, but rather falls in the realm of global harmonization of criminal law (Frydman/Rorive, this issue). A further problem of worldwide child protection is the US reliance on technical solutions for regulation which is totally different from the concept and understanding of regulation as it prevails in Europe – even though there are voices, among them the German Bertelsmann-Foundation, which strongly advocate following the US model towards a global commitment to (self-) regulation (Bertelsmann Stiftung 1999).

b. Data protection (privacy)

The strict observation of data protection standards is of paramount importance for the functioning of e-commerce (Burkert 2000). Users, who have to reveal and transmit their credit card numbers and other sensitive information when they engage in e-commerce expect the industry to handle this highly sensitive data in the most cautious and trustworthy way. Frequently, though not always, is the provision of sensitive information required to accomplish online transactions. But business firms can use the collection of personal data of their customers for purposes which are in some instances beneficial in others harmful to the customers and in most cases unknown to them. Individuals want to keep control over the collection

and use of personal information to avoid negative externalities. It is not contentious that the protection of privacy is a regulative task. The question rather is: Is it primarily a task of governments to provide for the necessary security or can it be done through private industry self-regulation? The EU and the USA have tackled this issue using different strategies. The USA, to put it simply, prefers industry self-regulation while Europe favors government action (cf. Haufler 2001: chapter 4). Given these diverging routes towards privacy protection the resulting incompatibility threatened to significantly reduce the volume of commercial electronic transactions between the two continents. This consequence was eventually avoided through an “interface solution” – the Safe Harbor Agreement which mixes public and private authority (Farrell, this issue).

Apart from bilateral agreements such as the Safe Harbor no privacy agreements have emerged at the global level. There have been discussions of Internet related privacy issues in the context of the G 8, the OECD or the Global Business Dialogue but neither intergovernmental nor inter-firm decisions of more than symbolic value have been taken.

D. Current state and trends of regulatory practice

Not every rule that has been established to control global communications aims at *regulating* the development and use of communication networks, in particular the Internet. Efforts to adopt rules in order to *coordinate* the development and use of the Internet are equally important. They help reduce transaction costs and create favorable conditions to generate positive externalities. Often specific policy measures blend regulative and coordinative elements, and they involve public actors and private actors. While public actors are governmental or intergovernmental units private actors can either be business organizations and business associations (including labor unions) or citizens and civil society groups. Traditionally governments played an important role in the coordination and regulation of communication networks. In many countries telecommunication networks were not only regulated but also operated by public administrations or government agencies. Therefore, it is not surprising to find governments involved in many arenas which deal with the governance of the Internet – regulation as well as coordination.

I. Areas of government intervention

In the communications sector one can discern two sub categories. On the one hand, we find classic technical regulation such as the allocation of frequencies. In this field the ITU acts as an original intergovernmental law making organization which determines broadcast parameters and frequencies. The member states have to adhere to the ITU regulations when they allocate frequencies nationally. With the Internet we have seen that the allocation of domain names which entails both elements of

coordination and elements of regulation is administered by ICANN which is a non-governmental private organization. ICANN claims to represent different types of Internet stakeholders: Individual users, commercial organizations engaged in Internet business and several units of technical coordination. ICANN acts as a central agency according to its own rules. This is a reason why it appears as the core organization of a global regulatory Internet regime (Mueller 2002: chapter 10), a kind of Internet government. But ICANN acts as we have seen “in the shadow” of the US government. The government can intervene into ICANN’s business notwithstanding that it declares not to intend to do so.

On the other hand, in areas which are less technology focused, we can observe that governments try to accomplish international agreements to facilitate, for instance, commercial electronic transactions. But the results of the international efforts are not very promising. One reason why many efforts failed may be a lack of creativeness in the high diplomacy settings of international organizations such as the World Trade Organization (WTO). Most regulatory activities in the WTO aim at harmonizing diverging national regulations because globally harmonized regulations are seen as the precondition for international competition and trade (cf. Werle 2001c). More flexible solutions of the “soft law” type (Abbot/Snidal 2000) involving private actors and different types of contracts only rarely evolve in the WTO context.

Concepts of harmonization also prevail in the EU. They are, however, restricted to establishing minimum standards in the areas of e-commerce, child and data protection and also cybercrime. An early example of this strategy was the first Television Directive. The European strategy of harmonization was successful because the EU has achieved a deeper form of market integration than the WTO system given the stronger centralization of political authority and the existence of enforcement mechanisms in the EU.

II. Rules to resolve the conflict of laws

As we lack global regulation and as it remains to be unlikely that harmonized regulations will be agreed upon at the international level governments and regional authorities such as the Commission of the EU have to deal with the so called conflict of laws. This conflict arises when the objectives and legal instruments of two different legal systems collide. In these cases conflict of laws rules are needed to establish which law is to take precedence concerning, for example, jurisdiction, enforcement and material law provisions (Osthaus 2000). Due to its globalized structure such conflicts of laws are common in the Internet, primarily between the USA and Europe. There are some mechanisms – chiefly in the realm of private law, of few also in public law (Mayer, this issue) – which help resolve such conflicts. The international law of civil procedure, for instance, includes rules for the recognition and enforcement of foreign judgements. The Safe-Harbor problem, however, shows

that not all conflicts of laws can be resolved by resorting to these traditional instruments.

III. Regulation without governments

Internet standardization provides many examples of successful collective action without government intervention. This, however, is an area in which the actors involved directly take advantage of the adoption of common solutions. Technical coordination, which includes collaborative technical development as in the case of Open Source Software of the "Linux" type (Holtgrewe/Werle 2001) offers beneficial conditions for self-regulation if some regulatory tasks are added to the coordinative ones. Many groups and organizations in the area of technical coordination have developed stable membership rules, procedural and decision rules and also working routines which facilitate handling regulatory issues, too. Therefore, governments often are well advised to refrain from regulation and provide incentives for self-regulation. Also, as was indicated above, the profound lack of international consensus on important regulatory issues, leaves governments no choice. They have to support self-regulation if they want an international regulatory framework to be established.

Not only at the international level but also within national confines in which in principle authoritative agencies can foster regulation self-regulation is frequently preferred, in particular in high-tech areas. This applies to technical issues but also to content regulation, where technical devices made available by the industry facilitate user control over content selection. Technical solutions such as PICS (see above) or software tools which help protect privacy of Internet users substitute technology for law and promise to do away with the familiar problems associated with the implementation of legal regulations (cf. Lessig 1999; also Fuhrmann, this issue).

IV. Trends

If we infer future trends from the current state of regulation the first suggestion is that we will find *few initiatives towards creating a uniform global communication law*. Current initiatives are of a rather symbolic nature and are mostly irrelevant for daily practice. One reason is that institutions such as the Global Business Dialogue which come up with initiatives and proposals lack the legal authority to enforce these proposals as binding rules. Those institutions that are endowed with this legal authority due to their established standing in international law such as the UN and its sub organizations have been rather reluctant to come up with their own proposals. This reluctance has been reinforced by the tendency of the USA, especially regarding the Internet, to use its de-facto veto power to block any regulatory agreement to be adopted in the context of the UN and more so of the ITU. The creation of a uniform global legal framework for communication is further compli-

cated by the numerous different interests involved. Countries are generally only willing to cooperate on a limited scale and do not want to give up their fundamental moral concepts which have evolved over decades and have shaped the countries' legal systems. Also, for the largest trading powers and trading blocks there is often an incentive and an opportunity to induce global rule changes through unilateral strategies (Cowhey/Richards 2000).

Considering the model of state oriented communications regulating also expectations that harmonization will take place at the regional level will often be disappointed. This suggestion is likely to come as a surprise to Europeans. Indeed, the "European House" is still being built with remarkable endeavor and the most important element of this process has been harmonizing the member states' legal rules. But in particular *in the communications sector harmonization does not take us far*. The rapid technical developments continue and cause business models in e-commerce and digital television to develop just as fast. Legal provisions are often harmonized far too late. The fact that a Council of Europe agreement, for example, has to be negotiated between all member states and then has to be ratified in each member state in a lengthy process implies considerable time lags. The roughly 27 consecutive drafts of the Convention on Cybercrime can also serve as an example here. Harmonization initiatives may be a desirable method to regulate dynamic markets such as the Internet based new economy, but in practice they are not an effective (or readily available) method to solve the problems at hand.

A final option to achieve global or at least regional regulatory coherence is provided by different variants of self-regulation. We observe *a trend towards self-regulation*. Self-regulation originally emerged in areas of, primarily technical, coordination when coordinative and regulative purposes were blended. Voluntary standard setting, for instance, responded to concerns of the public regarding technological but also "ethical" risks. In the Internet a code of conduct, the so-called netiquette, evolved which was "standardized" in several documents issued as Requests for Comments (Leib/Werle 1998). From these technical areas self-regulation diffused into commercial and other areas where profits but also moral values are at stake. Arenas and mechanisms of self-regulation can be found, for example, in the realm of intellectual property where business firms started collaborative initiatives to safeguard property rights after attempts to reach an agreement in the World Intellectual Property Organization (WIPO) failed. The collaborative involvement of firms and civil society organizations in content rating and the provision of filter technology in the field of child protection has already been mentioned. Some forms of self-regulation, such as ICANN's domain name allocation and dispute resolution, can be classified as "regulated self-regulation" others, such as those in the area of intellectual property operate outside the "shadow of the state" as "private self-regulation" (Knill/Lehmkuhl 2002).

But despite all the euphoria concerning the flexibility and openness for innovation of these variants of self-regulation we should be aware that they have developed because governments were unable to keep control over technology or failed to im-

plement legal regulations and, most importantly, could not achieve consensus in international negotiations. However, not only in public regulation but also in private self-regulation problems arise when consensual agreements are to be reached or the implementation of a regulatory scheme by all private actors is at stake. This problem is avoided when exclusive “clubs” of the most powerful players, such as international business round tables, issue and implement the rules. But the exclusiveness of these clubs triggers other problems. The clubs lack democratic legitimacy and the regulations they adopt may generate negative externalities, i.e. they are beneficial to the club members but unfavorable to others. Such externalities again call for some kind of government intervention.

This brings us back to the public actors and to their capacity to regulate communications. Given the almost insurmountable difficulties to accomplish global regulatory uniformity governments have increasingly focused on developing regional “regulatory blocks” such as the European and the North-American regulatory schemes in the area of electronic commerce. The two schemes differ with respect to the legal traditions and the political culture they are embedded in. The governments accept and protect these differences. But more often than not they found ways in terms of *interface solutions to avoid hampering effects* of these differences on cross border electronic trade. Often such interfaces are procedural and formal rather than substantive. Some elements of International Private Law, but also Safe Harbor Clauses and “Good Samaritan” provisions (Frydman/Rorive, this issue) point into the direction of evolving legal interfaces which are akin to flexible “Scharnierrecht” to use a recent German legal termin. From case to case these interfaces are tailored to facilitate electronic transactions and adapt to new technological developments.

These solutions have a tendency to work in favor of the anglo-american legal tradition of common law and disfavor the continental European concept of law making, which proves to be too rigid and inflexible to cope with such problems.

E. Conclusion: The future role of law

The examination of global communications regulation reveals that as far as the provision and operation of the technical infrastructure, in particular the Internet, is concerned governments and other public actors have lost leverage. In most cases the collaborative development of technical protocols and standards does not rely on governmental support and is carried out in a more efficient and effective way when political intervention is avoided. Frequently standardization is coordination and not regulation. From this angle it comes as no surprise that from the beginning Internet standards have been global standards.

Apparently global coordination is easier to achieve than global regulation. But there can be no doubt that also some kind of regulation is needed to facilitate the provision of electronic services on a global scale. Regulation is traditionally the domain of law. Thus, we might conclude, a global system of uniform legal regulations is best suited to govern international electronic transactions. But this general

conclusion would be misleading. Legal and also technical heterogeneity often spurs competition and innovation and therefore must be protected against pressures towards uniformity. Likewise legal regulations geared to facilitate cross border transactions need not be globally uniform. But they must be internationally transparent.

The empirical analysis of regulatory efforts confirms this position. Initiatives based on the harmonization approach have consistently lost ground to different variants of private and public-private self-regulation, often employing technical procedures and solutions, and to regulatory strategies including dispute resolution mechanisms tailored to the specific types of cases.

Considering this development, what role will the law play in global communications in the future? At the first glance, this seems to be only a minor role. Technical developments will continue to set the framework of global communications. The structure of this framework, to a large extent, will determine if and how regulatory measures can be applied and how objectives of regulation can be achieved. As a consequence, technical "Code" (software) to put it in Lessig's terms "is Law" (Lessig 1999) and technology based self-regulation appears to be barely influenced by the established legal system. But it does not exist in a legal vacuum either.

We observe efforts to provide a legal framework to shape and control self-regulation. In the case of self-regulated content filtering legal regulation aims to ensure that these filters are not controlled by one single powerful company, a scenario which, considering global mergers such as the AOL/Time Warner merger, is not at all unlikely. While a filter system may be an adequate means to protect children from harmful violent and sexual content, the filter can at the same time be used by the system's vendor to control and influence the flow of information on the Internet and thus infringe upon the users' and content providers' freedom of speech and freedom of information. Legislation in this area continues to provide a binding framework that ensures that fundamental human rights can be freely exercised. It is only within this framework that one can rely on self-regulation. This kind of regulated self-regulation represents one significant trend in which law continues to play a crucial role.

Regulators have to acknowledge that even the most efficient technology based mechanism of self-regulation cannot stop certain individuals from refusing to accept the established framework. Criminal hackers, right wing extremists and people offering child pornographic content often find ways in the global Internet to circumvent and bypass the rules. The response to this problem is not adopting more or more detailed law in a national or regional context. What is evolving are pragmatic non-legal solutions tailored to the specific problem at the global level. They grant reputation to those public agencies and private corporations which act according to "best practices" and (morally) commit themselves to standards of conduct.

Where law is needed to regulate global communications – operation and use of technical infrastructure – this law will not be globally uniform and only in a limited number of cases regionally harmonized law. Rather different types of legal interfaces or interface law ("Scharnierrecht") – formal and procedural rather than sub-

stantive - will guide network operation, service provision and commercial electronic transactions. The interfaces establish whose country's or region's law applies in a specific case and make sure that the respective law is enforced across national borders. Interface law preserves national and regional autonomy in law making (Scharpf 1994), it is compatible with a competitive economic world order, it increases rather than reduces users' options and it perfectly conforms with the organizational (de-centralized, global) and technical (heterogeneous and open) structure of the Internet.

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