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An Institutional Economics Analysis of Regulatory Institutions in the Telecommunications Sector

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Bronwyn Howell

New Zealand Institute for the Study of Competition and Regulation Inc. and
Victoria Management School, Victoria University of Wellington, PO Box 600,
Wellington, New Zealand. Email bronwyn.howell@vuw.ac.nz

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The ICTS Sector

As with any industry sector, the path followed in the development of the Information and Communications Technology and services (ICTS) sector has been historically, and continues to be, shaped by the interaction of technological, economic and political forces. Technological factors contribute the set of technically feasible products and services, economic factors surrounding supply and demand determine which of these it is possible and desirable to implement commercially, and policy, law and regulation contribute to shaping the design of the markets in which ICTS are produced and exchanged. Although all three components interact, sector outcomes are determined principally by the actions within the sphere of policy, law and regulation, as a consequence of the ultimate powers conferred on this component to determine both the applications, products and services will be exchanged in the markets that ensue, and the distribution of the net benefits that arise, as illustrated in Figure 1¹.

Whilst technological and economic factors contribute the set of feasible products and services and create the opportunities for innovative new products and services to diffuse, the powers granted to policy-makers, regulators and legislators (hereinafter collectively referred to as the ‘regulatory institutions’) to bind all other participants to act according to their will confers upon them the ability to support, direct and constrain all current and future technological and economic opportunities arising from interactions in the sector. Only those products and services sanctioned by the regulatory institutions will be produced and traded, and the terms of their trade must also satisfy regulatory imperatives. The exercise of such powers has influenced past outcomes, and continues to influence participation and outcomes in current and future markets. Thus, via systemic feedback effects, regulatory institutions are instrumental in determining the nature and direction of future technological and economic developments, and hence sector outcomes.

Understanding why specific outcomes have emerged and predicting likely future outcomes in the ICTS sector would appear to depend principally upon understanding the nature and function of the relevant regulatory institutions. Such understanding would also appear to be crucial in assessing how changes to the regulatory institutions (either exogenously or endogenously imposed) will affect sector outcomes, in both the short and long terms. However, such understandings must necessarily take into account not only the regulatory institutions themselves, but also the wider context in which they operate, as per Figure 1.

¹This paragraph draws on material from Professor Melody’s lecture “Political Economy of ICTs”, Monday August 27 2006.

This paper takes as a starting point for developing deeper understandings the assumption that both regulatory bodies and the sectors in which they operate are institutions. The body of literature about the operation of institutions provides a means of understanding the actors, arrangements, rules and culture, values and norms that shape the ICTS sector. With this understanding, it is then possible to analyse using the same frameworks how these same forces act upon and shape the regulatory institutions, and ultimately how the regulatory institutions themselves contribute to shaping the wider ICTS sector in which they operate. The order of the paper is as follows: Section 1 describes the institutional economics conceptualisation of institutions, and a specific model of interactions in complex institutional systems proposed by Koppenjan and Groeneweld (2005). Section two then applies this model to explore structures, entities and interactions within the ICTS sector generally, and those interactions specifically associated with the evolution and functioning of regulatory institutions. Finally, section three takes the sector-specific application of the model from section two and applies it in the specific circumstances of the ICTS sector and regulatory change in the European Union in order to draw insights that may contribute to explaining why the attempts to build a common telecommunications market in the European Union have failed to deliver the desired outcomes, despite substantial alterations to the regulatory institutions designed to bring them about.

An Institutional Economics View of Institutions

From the perspective of institutional economics, all institutions are “a set of rules that regulate the interaction between parties involved in the functioning of a (technological) system”² - that is, “a system of rules that structure the course of actions that a set of actors may choose”³ which is accepted by those involved, is used in practice, and has a certain degree of durability (i.e. it is not transitory). An institution “co-ordinates the positions, relations and behaviour of the parties that own and operate the system”⁴, and will become established and persist typically because, on balance, the costs and risks incurred by its existence and activities are outweighed by the benefits ensuing⁵. Whilst formal structures and accountabilities form part of the set of rules governing the operation of the institution, “how decisions are made in and

² Koppenjan and Groenewegen, (2005) p 3.

³ Scharpf, 1997 cited by Koppenjan and Groenewegen (2005) p 3.

⁴ Koppenjan and Groenewegen, (2005) p 1.

⁵ The test of benefits outweighing costs is the typical economic test of the long-term viability of an organisation. It is noted, however, that institutions that are not subject to normal commercial tests may persist, even though they are economically unviable, for example, as a consequence of legislative mandate (e.g. statutory bodies) or soft budget constraints (e.g. donors who provide funds without expectation of a monetary return). See Hansmann (1996) for a discussion on the creation and durability of such organizations.

about the system, and how the system is used, determines its functioning”⁶. Typically, multiple parties are involved, with participation often transcending the boundaries of any one organisation.

Koppenjan and Groenewegen (2005), building upon Williamson (1979; 1998), propose that interactions in complex institutional systems can be analysed on four levels:

1. individual actors (encompassing individual agents, firms, households) and their interactions (transactions);
2. institutional arrangements (governance arrangements) designed to co-ordinate specific transactions among multiple actors;
3. legal rules that set the formal ‘rules of the game’ and determine the legal positions of players and mechanisms available to co-ordinate transactions; and
4. cultures, values, norms and attitudes, that constitute the ‘informal rules of the game’, influencing the mindset of agents at level 1 and thereby influencing the problems identified, feasible solutions considered and the kinds of incentive structures which are acceptable and will be effective⁷.

The ‘levels’ model distinguishes between the effects of formal (levels 2 and 3) and informal (levels 1 and 4) structures, and enables specification of the relationships occurring between each of the different levels. In particular, a higher level constrains and shapes the lower ones, and lower levels have an influence on developments occurring in higher ones⁸. Whilst cultures, values, norms and attitudes shape formal laws which constrain the types of relationships and structures that can exist, individuals invest in relationships with the specific objective of changing the formal rules. Furthermore, the model recognises that institutions are embedded in a larger context, so are subject to change as a consequence of changes in this wider contextual environment. Whereas the informal arrangements are continually changing incrementally (as a consequence of either purposeful or unconscious behaviour) in response to these environmental changes, the formal arrangements, whilst capable of undergoing change, are tend to be more rigid. The absence of changes to the formal institutions may imply a degree of permanence in the institutional structure that is illusionary, simply because the changes to the informal arrangements unfold so slowly or opaquely that they go unnoticed by the actors involved.

⁶ Koppenjan and Groenewegen, (2005), p 2.

⁷ *Ibid*, pp 5-6.

⁸ ‘Higher’ in this respect refers to the number of the layer – i.e. layer 4 is higher than layers 1, 2 and 3.

System stability and effective functioning relies upon the congruence of arrangements at each level, suggesting a need for constant changes to both the formal and informal arrangements in response to changes in each other and in the wider context. However, constant change may be destabilising, as it creates uncertainty. On the one hand, the stability that formal arrangements confer reduces uncertainty, thereby facilitating transactions that may not have occurred had uncertainty persisted. On the other hand, unchanging formal arrangements simultaneously cement into place the current set of rules of the game which necessarily, due to the bounded rationality and biases of those involved in their creation and maintenance, are not neutral. The very existence of rules makes it easier for some actors to ‘play the game’ and ‘win’ than others, thereby incentivising investment in activities designed to change or retain rules in order to secure individual distributive advantages⁹. Indeed, some formal rules may be consciously designed to be difficult to change specifically to circumvent institutional vulnerability to self-interested strategic manipulation and transaction-harming uncertainty. However, these impediments to change prevent the institution from responding in a timely manner to unexpected disruptive changes or an increase in the pace of change in the wider environment, raising the risk that the institution loses its effectiveness or at worst becomes irrelevant¹⁰.

Koppenjan and Groenewegen also propose that, as a consequence of their creation being the outcome of informal and incremental processes, the customised formal and informal arrangements developed within each institution are the unique manifestations of the historical learning and experiences of the relevant parties interacting over a long period of time in a specific context. Thus, a set of institutional arrangements developed in one context will not necessarily be optimal when transferred into in another context, or where the actors involved are different individuals and firms, whose past activities have conditioned the nature of their relations. Furthermore, the institutional arrangements that have evolved will likely reflect the different levels of access that individuals and groups at level 1 have had at different times with those with the power to change formal arrangements at level 2, as well as a variety of compromises that have been struck for pragmatic reasons when multiple parties have been unable to negotiate the adoption of the set of rules that each initially preferred and advocated for.

⁹ North (1990).

¹⁰ Christensen (1997, 2006); Bower and Christensen (1995, 1996).

Regulatory Institutions in the Context of the ICTS Sector

At the broadest level, the ICTS sector as depicted in Figure 1 constitutes an institution wherein the ‘technologies’ component give rise to applications (that is, infrastructures and appliances) which are packaged into commercial products and services (e.g. residential fixed line telephony, Internet services) by service providers and exchanged with consumers via markets. Policies determining how the sector/institution will operate become the regulations, implemented by regulatory institutions, binding the behaviour and interactions of all the other parties.

Applying the ‘levels’ model to the ICTS sector leads to the identification of the various elements as follows:

1. The ‘individual actors’ are the individuals and firms participating in the creation, provision, exchange and consumption of applications and services – that is, technology and application developers and manufacturers, infrastructure and application providers, service providers and consumers – and those participating directly in the creation, implementation and enforcement of policies – politicians, civil servants, agents of the regulatory bodies, lawyers, lobbyists etc as individuals, as well as the agencies in which they operate (e.g. regulatory authorities, government departments, political parties, national executives, industry associations, courts). As ICTS sector activities embrace aspects of ‘public goods’ (e.g. universal service), the body of relevant actors also include ‘the public’ collectively (e.g. as represented by consumer associations and other advocacy groups), and individual members of the public, with an interest not just in their own consumption of services, but also the consumption of services by others in the community.
2. The ‘institutional arrangements’ co-ordinating the activities of the sector comprise principally the commercial agreements between each of the interacting participants – for example, the access agreements between service providers and infrastructure providers for use of installed platforms; the service agreements between Internet Service Providers (ISPs) and end consumers; the employment agreements between applications developers and their research and development staff; the agreements between governments as consumers and applications providers to install infrastructures in areas where commercial installation is unviable. These arrangements also include the formal agreements governing creation of and participation by individuals in collective groups, such as industry associations and lobby groups. Agreements between regulatory authorities and

actors about the processes via which regulatory activities are undertaken (aside from those covered by statutes) also fall into this layer (e.g. consultation processes, individual regulatory agreements with specific providers), along with the governance agreements via which all actor-agents (either individuals or collective groups) report to and are accountable to their principals for their activities.

3. The 'legal rules' include the typical legal frameworks under which the commercial and governance activities in level 2 take place, as well as the regulatory 'rules of the game' specific to the sector which are enshrined in statutes (e.g. mandatory open access arrangements). These rules also include the formal legislative specification of the powers conferred upon regulatory bodies and specific individuals (i.e. the regulator)¹¹. These rules also include the statutory rights by which actors may participate in the processes in which these powers and rules are determined (i.e. constitutional processes, such as 'democratic participation' in matters of government).
4. The cultures, norms values and attitudes that comprise level four necessarily include factors relating to the nationality, ethnicity, sub-sectors of activity and the path-dependent history of interactions the actors involved. A key observation is that different sets of cultures, norms, values and attitudes apply to different actors and institutions within the sector. Thus, distinguishably different sets of industry and sub-sector 'cultures' prevail, and each of these has undergone its own specific development trajectory. Moreover, the nature of the institutions and interactions may lead to the development of different cultures in different geographical, commercial or political contexts. For example the cultures, norms values and attitudes that have developed from transacting in a sector where suppliers are monopolists will differ from those developed where suppliers are competing more vigorously. Different institutional arrangements will also lead to different cultures. For example, the cultures, norms values and attitudes that evolve when investment in firms has been built up from taxpayer or ratepayer investments and governed by collective, 'community' trustees will differ from those where investment comes from a small set of private sector individuals. Such differences also distinguish individual firms and technology subsectors (e.g. telephony infrastructure, computer, Internet Service Provision), for a variety of reasons, including the imprint that individuals with different skills and skill mixes

¹¹ Note here the difference between the 'institutional arrangements' by which the regulatory bodies and regulators carry out their designated activities (level 2) and the process by which the powers to undertake specific activities are created and conferred (level 3).

place upon specific firms, and the different roles played by different technologies in different parts of the value chain leading to different orientations of firms (e.g. industry versus consumer/retail). One very obvious difference that emerges is the distinction between the commercial and professional cultures, norms and values of firms trading in commercial markets, and the ‘civil service’, ‘citizenry’ and ‘public good’ cultures, norms and values pertaining to regulatory, government and ‘civil society’ actors and their processes.

The ‘levels’ analysis of the ICTS sector ‘meta-institution’ allows some key insights to be gained into some of the important differences that characterise the regulatory institutions from those institutions and individuals whose interactions they are charged with influencing. Most obviously, the different cultures, norms, values and attitudes (as per level 4) prevailing in regulatory institutions are likely to be very different from those influencing the relationships within and between actors engaged principally in the ‘technology’ and ‘markets’ sub-sectors of the ICTS sector (as per level 2). This difference is both a cause and a consequence of the different types of interactions actors primarily associated with the regulatory institutions must carry out.

The activities undertaken by agents of regulatory institutions at level 2 principally relate to implementing, monitoring and enforcing laws enacted at level 3, and in advising the actors with the key responsibility for making decisions about the laws and rules pertaining at level 3 on an appropriate set of legal rules and policies to apply. The powers granted to regulatory agents by the level 3 arrangements ensure that the arrangements that they participate in at level 2 carry some of the force of level 3 rules, in that they can constrain the nature of the institutional arrangements of, and interactions between, all other actors in the sector. For example, regulators typically have a role to play in facilitating other actors to reach their own agreements at level 2, with the power to impose terms and conditions, as allowed by level 3 rules, only being utilised if the level 2 activities fail to deliver a satisfactory outcome. Consequently, the tasks undertaken by regulatory institutions require actors with different skills from those employed by institutions in other parts of the sector. The consequence is, firstly, a self-selection of actors into different parts of the sector based upon professional skill differences, and ultimately a different set of cultures based upon the professional differences that likely become self-perpetuating as self-selection becomes increasingly accentuated by demand for, and supply of, increasingly specialised staff.

As the cultural differences between the regulatory institutions and the regulated entities increase, it becomes harder for regulatory agents with incongruent skill sets to assess the

nature and efficacy of the interactions between other sector actors, and to advise the level 3 decision-makers upon appropriate changes to the formal laws. Whilst the skill lack might be consciously addressed by targeted recruiting, such appointments risk upsetting the congruence between the 'civil service', regulatory cultures of level 4, the nature of the activities covered by the agreements at level 2, and the specific tasks required to be undertaken by the new employees. Whilst information may improve, operational effectiveness with respect to regulatory tasks may decrease, as the activities of the new employees may be insufficiently guided by the prevailing cultures where this is necessary. If the skill incongruence is not addressed, then the information asymmetry increases, leading to regulatory institutions that are out of touch with key activities in the sector. Important sectoral changes may not be identified and acted upon, leading to increasingly ineffective regulatory processes, as regulators seek to regulate activities or behaviour that are no longer as important or relevant, or fail to identify the need to regulate nascent activities.

The apparent inability of regulatory institutions skilled in the task of regulating voice-based telephony providers to respond rapidly and effectively to sector changes resulting from the disaggregation of service providers from infrastructure providers and the convergence of voice, internet and entertainment applications¹² may in part be plausibly attributable to increasing cultural separation between technological developments, commercial markets and regulatory institutions. Whereas service providers are typically quick to change skill sets and associated institutional arrangements on the basis of economic opportunities offered by new technologies, as determined by their overriding commercial culture and values (indeed, such recruiting patterns actually reinforce the prevailing commercial cultures in these institutions), regulatory institutions lacking the same culture of commercial imperatives to shape selection of actors and design of institutional arrangements cannot respond as quickly, simply because the commercial opportunities may not be detected early. Moreover, even when they are detected, and changes are made to recruit individuals with new skills, it may be difficult to integrate the new individuals effectively into an organisation where the actions of the majority of actors continue to be conditioned by pre-existing cultures, thereby limiting the effectiveness of the new employees. Such recruitment may be successful only if there is simultaneously a conscious attempt to change the cultures, norms, values and attitudes of the entire regulatory institution. Yet such a change may be neither desirable overall (e.g. it may be incongruent with other aspects of the regulatory task that have not changed, such as data

¹² For a discussion of these issues, see Melody (2005).

collection) nor easily achievable¹³. Hence, the status quo typically prevails and regulatory effectiveness declines.

The inherent tensions identified by the incongruence of cultures and activities are further exacerbated by the fact that regulatory institutions are directly agents of those charged with making the level 3 decisions that both set the regulatory institutions' agendas and shape their formal governance arrangements. The blurring of the locus of ultimate control of the formal rules controlling the regulatory institutions between level 2 and level 3 enables all actors in the sector a 'double opportunity' to influence the activities that the regulatory institutions undertake at level 2. Actors can utilise interactions at level 2 to shape rules and outcomes, as well as exercising their constitutional rights as participants in the wider setting of the legislative and regulatory 'rules of the game' at level 3. For example, actors dissatisfied with regulatory actions at level 2 can seek to redress this dissatisfaction by exerting the right of all actors as citizens of the sovereign entity to seek changes to the level 3 rules that govern the setting of the rules at level 2.

The 'double opportunity' is possible only because the regulatory institution is an instrument of government. There is no such universal right available to all sector participants to participate in changing the nature of, nor the processes of setting, the rules governing activities of private, shareholder-owned firms or markets via any means other than their normal commercial interactions with the institution. Where incongruities arise in (firm governance) or between (marketplace rules) the levels in respect of private sector institutions, changes to the rules of the game are enacted within the level 2 arrangements set at level 2 (e.g. interested stakeholders changing governance rules, courts arbitrating commercial contract disputes or hearing appeals against regulatory processes). Recourse to level 3 changes is typically rarely used, except in cases where the overriding level 3 rules lack clarity or are demonstrably unfair. On the one hand, sovereign governments are likely to be reluctant to change the level 3 rules frequently as a result of constituent petitions, as frequent changes increase uncertainty that likely ultimately will harm sector performance (indeed, devolution of disputes to courts who, via level 2 arrangements, rely strongly upon precedents ensures that the status quo prevails unless there is a need to address an issue not covered by previous decisions). The potential for destabilisation is one of the reasons why agencies such as the ITU recommend the creation of level 3 rules that minimise the ability for political bodies, whose predominant arena of action is in level 3 changes, to interfere with the day-to-day

¹³ Robbins et al. (1994) chapter 18.

activities of regulators, whose activities are focused at level 2¹⁴. On the other hand, failure to make changes may lead to the entrenchment of informational asymmetries that decrease regulatory performance, which in turn may lead to increased dissatisfaction with regulatory actions and subsequently even greater pressure for level 3 changes to occur.

EU Regulatory Institutions and the ‘Failure’ to Form a Common Telecommunications Market

Based upon the insights above it would appear that an institutional analysis of regulatory institutions, with reference to their wider ICTS sector contexts, provides a useful means to explore some of the key questions about the development of specific sector outcomes. As an example, the balance of this paper illustrates how institutional analysis of regulatory institutions may assist in explaining why, despite original intentions, the changes to laws and rules (level 3) and the formation and the creation of a variety of common regulatory institutions (level 1) with commonly agreed operational rules (level 2), the objective of creating a single common market for telecommunications in the European Union appears to have failed. The following analysis is not intended to be a comprehensive explanation, but rather sets the scene for further research that may offer greater insights.

Sutherland (2006) identifies that, since the 1990 adoption of Directive 90/387/EEC, the predominant strategic objective (from the perspective of political and regulatory actors) in the European Union telecommunications sector has been to “create an open and borderless internal market allowing the free movement of services, in effect access to those services”¹⁵. Special rights in the provision of telecommunications equipment and services, with the exception of voice telephony, were removed by Directive 90/388/EEC, and Directive 95/62/EC was adopted to ensure the harmonisation of the conditions for open access to public fixed networks. Directives 96/2/EC and 96/19/EC removed any special rights remaining in any member states in respect of the provision of mobile and voice telephony respectively. These were followed by Directives on licensing (97/13/EC) and interconnection (97/33/EC) and the use of cable television networks to provide services (95/51/EC). In 1998, the council agreed to a framework for universal service. These, and many other similar directives and decisions, constitute the broad legal frameworks at level 3 in the European Union telecommunications sector. As can be seen, the framework is far-reaching, with implications for actors (level 1) and arrangements (level 2) in all of the technologies, markets and policies segments of the sector.

¹⁴ Kelly (2006).

¹⁵ Sutherland (2006) p 3.

However, both Sutherland (2006) and Hocepid and de Streel (2005) identify that in addition to creating a framework of legal rules and policies governing the sector, the European Union as the over-arching government entity has also imposed a set of rules requiring the implementation of “a common framework of quasi-independent national regulatory authorities”¹⁶. Thus, the framework specifies not just the broad over-arching ‘legal rules of the game’, but also requires a specific set of actors (national regulatory authorities – NRAs – level 1) with regulatory jurisdiction over limited geographic subsets of the European Union. The Commission is assisted in carrying out its Directives by the Communications Committee (COCOM), which is a “standard Committee composed of representatives of the member states”¹⁷. However, “the framework sets the basis for a co-ordinated policy across Europe ... but without forcing Member States to agree or granting the Commission specific powers beyond recommending common approaches”¹⁸.

An initial examination using the ‘levels’ approach suggests that the imposition of such an institutional change upon the sector will be, on the basis of Koppenjan and Groenewegen’s analysis, extremely difficult to carry out. Indeed, it may provide a graphic illustration of the problems incurred when imposing a set of structures into contexts where they may not be optimal, at least in pursuing the chosen objective.

Firstly, the EU directives allow each NRA to enter into customised agreements (level 2) with the actors participating in each of their geographical territories, as long as these agreements are within the frameworks of the level 3 rules. Hocepid and de Streel observe that the wide range of discretionary powers granted to NRAs allow the sector to evolve rapidly and unpredictably in response to changes in a manner that would not be appropriate to “freeze in hard-law instruments a policy vision based on a specific market design based upon a specific market design reflecting a political agreement achieved at a specific moment in time”¹⁹ in a volatile sector. Given that Koppenjan and Groenewegen suggest that the stability in the level 3 rules and level 2 arrangements are important aids in reducing uncertainty in the sector, and must be traded off against the losses arising from incongruent arrangements arising from rigidities, the explanation offered to support flexibility appears to be incomplete. It is likely that, true to the formation of agreements amongst divergent parties being determined ultimately by compromises, the underlying reason for flexibility is more accurately captured in Hocepid and de Streel’s further observation that using non-modifiable hard-law

¹⁶ Sutherland (2006) p 6.

¹⁷ Hocepid and de Streel (2005) p 13.

¹⁸ Hocepid and de Streel (2005) p 6.

¹⁹ Hocepid and de Streel (2005) p 14.

instruments “was not feasible politically due to the diverging positions of the Member States”²⁰.

Thus, the very formation of the ‘common market institution’ was itself the outcome of a set of institutional interactions and relationships, with even wider political institutional contexts shaping the outcome of the wider telecommunications market, despite the clear objectives held for this sector and the institutions within it. As the objectives of the ‘winners’ from these rule-changing compromises in the political institutions are likely incongruent with those of the Commission with respect to the telecommunications agenda (e.g. individual states may wish to preserve differences in order to satisfy others via their own political compromises, and prioritise this more highly than furthering the common telecommunications market), the ability of the proposed changes to achieve the desired objectives has itself been compromised from the outset. Thus, failure to achieve the aims may have been predictable.

Secondly, the actors with whom each of the NRAs interact are essentially different, as a consequence of the substantially different historic paths of regulation in each of the member states. Each state has had its own incumbent telephony provider, which is (in most states) at some point along the path to privatisation. Whilst some incumbent providers are already fully privatised, and have been engaged in interacting with a well-established NRA for an extended period, enabling a mature set of level 2 agreements to be developed (e.g. the United Kingdom), others are at different stages, in both privatisation and the maturity of the NRA (e.g. the former communist states in Eastern Europe. Each geographic environment will have also experienced different patterns of competitor entry, depending upon the nature of historic infrastructure investment, consumer tastes and preferences, and commercial opportunities (e.g. the industry types, infrastructure costs, etc. differ across the region).

Consequently, the agreements (level 2) reached by each of the NRAs in its relevant market will be shaped by the different cultures, norms, values (level 4) and actors (level 1) that have historically participated. As these agreements are, due to the powers of the NRAs, the essential rules defining interaction in the ‘market’ institution, and all will be different, then it would appear that, necessarily, there will be twenty-five distinct markets. It is therefore unsurprising to find that wide variations also exist in the ranges of responsibilities NRAs are required to undertake (e.g. post, railways, content)²¹, as these are determined in part by the identity of the actors, and the balance of power between them.

²⁰ *Ibid.*

²¹ Professor Ambak’s lecture ‘Tasks and Status of National Regulatory Authorities in the EU’ 30/8/06.

Thirdly, the existence of twenty-five distinct sets of rules will itself ensure that each geographic market will continue to pursue an independent development path. The rules and cultures themselves will lead to different actors participating in, and shaping the ongoing development of the different sets of rules. For example, the level 2 agreements in one NRA territory may have evolved to favour one set of actors over others (e.g. mobile infrastructures over fixed infrastructures; service providers over infrastructure providers), whereas in another, the reverse may apply. Long-standing interactions between specific individuals familiar with the prevailing cultures norms and values in a specific NRA territory will necessarily increase the likelihood of the level 2 agreements being shaped, either knowingly or unknowingly, in favour of those who are more familiar with both the explicit and implicit ‘rules of the game’ and therefore more likely to secure both agreements and changes to the rules that further their own individual advantage. Such biases create entry barriers for actors who are less knowledgeable of these implicit rules in each NRA territory, further skewing the distributions of actors and leading to differences between countries. The degree of influence by different parties may also in part account for some of the differences observed in the level 3 rules in the member countries (e.g. the different appeals processes applying to NRA decisions)²².

As the interactions between actors and rules will tend to be self-reinforcing across time, such patterns are likely to become entrenched. Without specific intervention, the differences between countries are likely to increase further, making it harder to achieve a ‘common market’, despite the intentions of the Commission and the over-arching laws and policies governing the sector. Thus, the institutional analysis provides a plausible partial explanation for the absence of evidence extensive cross-border entry by established firms into other EU NRA markets, and why even in markets for new technologies (e.g. mobile) the pattern of entry appears to be clustered around markets with common cultural (including the ‘culture’ of historical interaction and legal frameworks) and geographic characteristics – Figure 2.

Taking into account the preceding discussion, it is instructive to analyse the response of the European Commission to the apparent failure to create the desired single market. Perhaps predictably, the response has been again to resort to structural solutions, supported by further level 3 rules and attempts to apply more centralised, standardised arrangements at level 2 in each of the member states.

²² *Ibid.*

The Independent Regulatory Group (IRG) was established in 1997 as an informal group of NRAs and other European country members, without the Commission, to share experiences and exchange points of view on issues of common interest, and to look at “specific regulatory issues and decides principles of implementation and best practices (PIBs)”²³. As an initiative of the regulatory actors, it can be considered as an emergent set of arrangements at level 2 of the broad ICTS sector, with its PIBs contributing to shaping the agreements between the NRAs and other actors the arrangements at level 2. Its formation, and the tasks that it undertakes, were likely determined endogenously by the growing differences in the implementation of regulation across the EU, and can be seen as a quite predictable outcome in a sector where there are not only underlying cultural and actor differences, but also considerable freedoms and uncertainties as a consequence of the political compromises in the original establishment of the common market objectives, rules and institutions.

The European Regulators Group (ERG) was established by the Commission in 2002. It is a formal body, possibly exogenously imposed albeit as a consequence of internal observations of incongruence. It is comprised of the NRAs of each Member State and the Commission, and it “aims to provide an interface between the NRAs and the Commission to contribute to the development of common regulatory culture. To do so, the ERG looks in more detail to certain particular and politically sensitive problems and tries to develop a common approach, such as remedies, bitstream and LRIC methodology”²⁴. As a formally constituted instrument of the Commission, the common methodologies proposed by the ERG are closer to level 3 laws than the level 2 PIBs advocated by the IRG. Furthermore, the presence of the Commission on the ERG suggests an ‘upward-looking’ focus in the hierarchy of political accountabilities and influences. Whilst the issues of ‘culture’ are acknowledged, it is noted that these are focused more on creating a common culture amongst regulators and regulatory activities specifically, rather than recognising, understanding or attempting to alter all of the level 4 cultures, values, norms and attitudes that shape both the wider market institution and the national markets in each of the member countries.

The IRG and ERG are both examples of structural changes within the regulatory component of the ICTS/telecommunications sector. Yet, this component comprises only one third of the forces shaping the sector. Whilst the regulatory objective may be to create a common market, it is not at all clear that the forces from the technological and market components are naturally focused towards achieving this objective. If, as discussed in section one, regulators are at an informational disadvantage, and repeated interactions reinforce differences, making it harder

²³ *Ibid*, p 13.

²⁴ *Ibid*, p 13

for regulators to firstly detect relevant information, and secondly effectively transact with other sector participants, then it may be that the single market may never be achievable as long as it is not in the interests of individual actors with power to influence decision and rulemaking to deliver a sector with this outcome. In this event, a more achievable objective for regulators may be to restrict the extent of losses occurring as a consequence of the incongruities, as, given past interactions, the task of reconfiguring relationships towards a single market may be beyond the power of any one component part, or so disruptive of existing relationships that the costs outweigh the benefits.

Conclusion

As Koppenjan and Groenewegen (2005) observe, “institutions are often an easy target of attempts to reform”²⁵. However, they are hard to change. While designers may know what the design variables are, much less is known about the effects that combinations of design variables produce. Theoretical insights and practical experiences are helpful, but “institutional analysis should steer the design, while at the same time keeping an eye out for unintended effects”²⁶. From the very preliminary analysis of this paper, it would appear that these cautions apply equally to the desires and designs of policy-makers seeking to influence the shape of industry sectors and the design of the institutions that these same policy-makers create to implement their visions. The application of institutional economics appears to offer much, both in assisting the design of institutions, but also in the understanding of how sectors have evolved and may evolve further in the future.

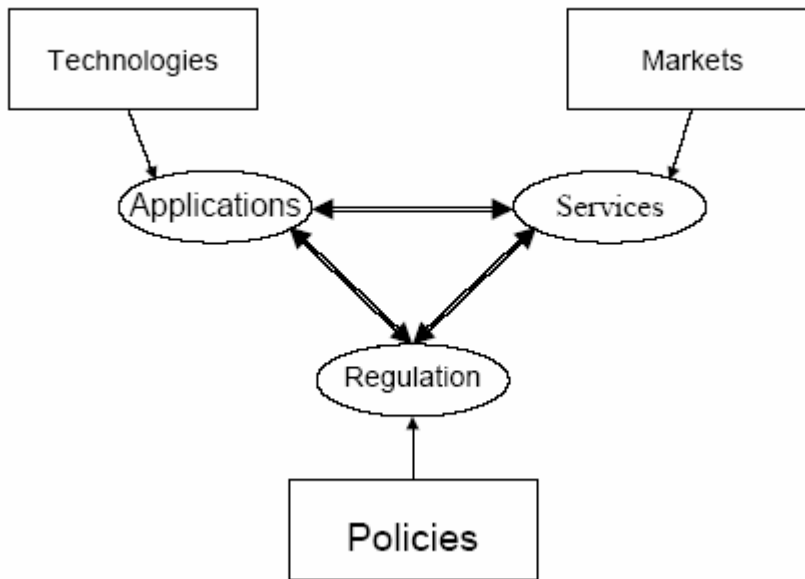
²⁵ Koppenjan and Groenewald (2005) p 7.

²⁶ Koppenjan and Groenewald (2005) p 11.

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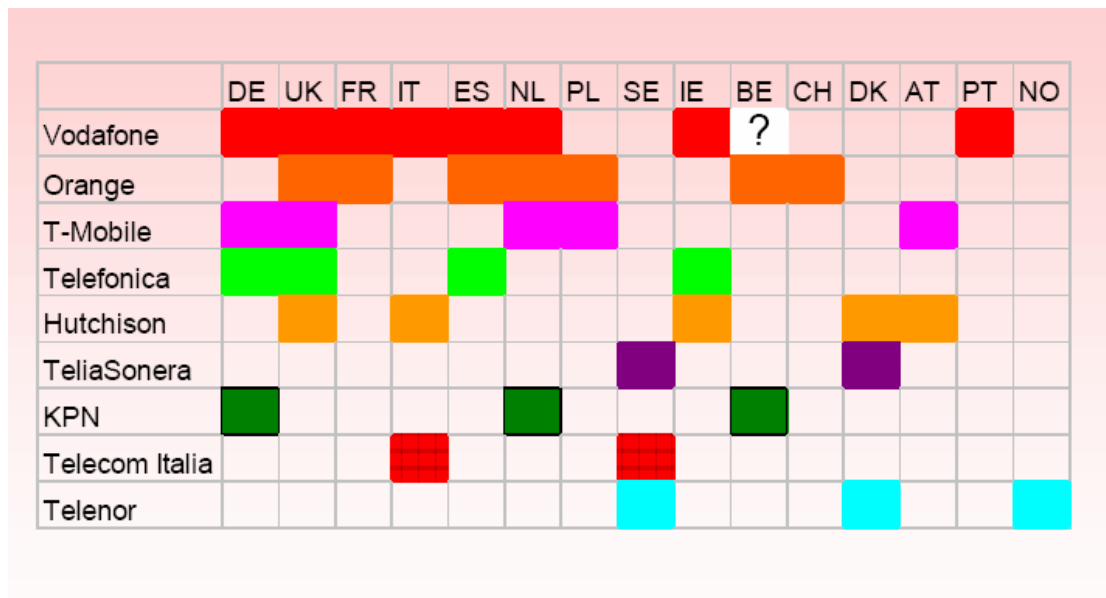
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Figure 1: Criteria for Economic Growth in the ICTS Sector



Source: Melody (2002) p 9.

Figure 2: A Fragmented Mobile Market – Corporate Presence in the EU



Source: Sutherland (2006a) p 5.