

**A NETWORK APPROACH FOR ANALYSING REGULATION POLICIES AND
REGULATORY PROCESSES:
'TINKERING' WITH THE INSTITUTIONAL CHARACTERISTICS OF
TELECOMS REGULATORY NETWORKS IN EGYPT**

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ABSTRACT

Regulation has been the subject of many scholarly researches, articles, and books. By using different approaches and theoretical frameworks, such studies covered different social, legal, economic, political, and administrative aspects of the topic. These studies are important but not sufficient either to capture the whole picture about the dynamic nature of regulatory policy-making and implementation or to visualise interactions and relationships between actors involved in different regulatory arenas. Based on empirical data collected from 42 interviews with decision-makers, regulated companies, and civil society organisations in the Egyptian telecoms sector and by using Social Network Analysis (SNA) techniques, this paper attempts to highlight the structural and relational analytical powers of the network approach. The paper asserts that interactions between actors involved in regulatory networks are neither random nor do they occur in a vacuum. There are different types of rules that identify actors' positions, govern actors' strategic movements and interactions, and greatly determine the results of the regulatory games. These rules form the heart of the institutional context within which actors play policy games. Therefore, intervening with network rules and other institutional features may have a direct impact on the way in which regulatory networks are structured and in turn on actors' behaviour and strategic actions in regulatory games.

Keywords: Telecoms Regulation, Regulatory Policies, Policy Networks, Telecoms in Egypt.

1. Introduction

The widespread utilisation of the network approach in different scientific and social science disciplines raises a fundamental question about its validity for studying and analysing specific type of policies such as regulation. In other words, the question this paper attempts to answer is that, *can regulatory networks be treated as more than a metaphor? If so, what aspects of regulations and the regulatory processes does network analysis illuminate?* The paper argues that, the network approach provides valuable analytical tools for studying and analysing regulations and regulatory processes; regulatory network analysis has the potential to add some new 'stones to the wall' of regulatory policies studies. From this perspective, the paper asserts that with few exceptions, the potential of policy networks for studying and analysing regulation policies and regulatory processes have received a little attention.

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The paper asserts that interactions between actors involved in regulatory networks are neither random nor do they occur in a vacuum. There are different types of rules that identify actors' positions, govern actors' strategic movements and interactions, and greatly determine the results of the regulatory games. These rules form the heart of the institutional context within which actors play policy games. Therefore, intervening with network rules and other institutional features may have a direct impact on the way in which regulatory networks are structured and in turn on actors' behaviour and strategic actions in regulatory games. Following on from this, the next questions need to be answered: Are institutional characteristics of regulatory networks manageable? Can networks be institutionally designed? And if so, what limitations may regulators face in tinkering with the institutional foundations of regulatory networks?

The paper attempts to answer those questions by examining the institutional context and characteristics of two telecoms regulatory networks in Egypt. The aim is to bring into sharper focus the notion of networks as institutions and to provide more insight into the potential, margins and pitfalls of institutional design in such complex settings. In other words, the paper presents in-depth empirical research of the institutional changes in the regulatory networks of the mobile telephony and internet service provision as a result of regulatory interventions of the NTRA. In the first section, the potential of institutional design as an indirect mode of governance in network settings is discussed. Strategic interventions implemented by the NTRA to influence the institutional characteristics of the two networks and the implications of these interventions are then examined. Section three is devoted to analysing the institutional foundations of the examined regulatory networks by illustrating the role of basic concepts such as rules, trust, independence, and due processes.

2. Institutional Design and Network Governance: Forms and Motives

Sauvée and Coulibaly (2008) have noted that in a governance perspective, a network can be regarded as an *institutional structure* developed to fulfil two main functions: firstly, to define a process or strategy of adjusting a collective action between independent actors via the establishment of a private or an internal government order; secondly, to design either contractual or non-contractual mechanisms that ensure the compliance of network actors with the rules for collective actions and guarantee the non-occurrence of opportunistic behaviour and the reduction of the level of uncertainty between actors involved in strategic games. From this perspective, networks can be conceived as institutions in the sense that they are governed by different sets of formal and informal rules which regulate members' interactions and determine their roles, positions, powers, and the overall network structure (see Klijn and Koppenjan, 2004; Gerrits and Klijn, 2007).

Despite the fact that rules and other institutional aspects in networks are subject to different forms of interventions from policy-makers and regulatory agencies, a process which is broadly referred to as 'institutional design', little attention has been given to clearly define the content of such a process. According to Klijn and Koppenjan (2004), the process of institutional design in network settings includes conscious attempts to influence the institutional features of networks by altering the set of rules which regulates actors' interrelationships, interactions, and their relative powers and positions. From this angle, institutional design can be regarded as an indirect way to influence processes and outcomes in regulatory networks. In other words, instead of intervening directly with the way in which network actors handle regulatory and policy issues, regulatory agencies can target institutional aspects, such as network rules, that govern and identify network realities.

In this context, the quest for institutional design can be related to different motives which may include one or more of the following factors: a malfunctioning, such as ineffectiveness, inefficiency or undesirability, of the existing networks; changes, in the nature of social problems or challenges that networks face; a desire to redistribute network resources; a response to changes, events, accidents, or crises; a result of policy learning processes; and a response to the changes in the attitudes of higher policy-making institutions and political leadership.

In the context of the telecommunications sector in Egypt, the institutional reform process was motivated by several considerations. Firstly, it was a result of malfunctioning of the existing institutions at that time, which was reflected in deterioration in the quality of

telecommunications services and greater dissatisfaction of telecom users. Secondly, institutional reform in the telecommunications sector in Egypt was also driven by changes in the Egyptian society as the demand for telecommunications services grew beyond the capacities of service providers. Changes in the world environment of telecommunications and the new technological advancements in this field have formed a third motive for the reform process in order to cope with such changes. All these factors have led to a change of attitude at the level of policy-making (a shift towards liberalisation and privatisation), which in turn has led to a change of the institutional context of the service provision network.

Motivated by one or more of the abovementioned driving forces, policy-makers and regulators may intervene to change the existing structures of regulatory networks by adding or taking away network actors, combining two existing networks, or forming a new network from scratch. These forms of institutional design interventions are known in the network literature as network strategies. This term is basically used to describe the different forms of regulatory interventions and their consequences for the way in which the network is structured and the games which are played between network actors. Regulatory strategies trigger another set of strategies followed by the regulated companies in response to regulatory interventions. These two types of network strategies, together with other forms of network tactics which are shared by both regulators and regulated companies, will be discussed in more detail in the next section.

3. Institutional Design Interventions: Strategies and Their Consequences

Recalling the Egyptian experience, all the three forms of regulatory interventions to (re)design the institutional characteristics of regulatory networks can be seen in the field of telecommunications.

3.1. Changing the Network Composition

At the structural level, regulators may intervene to change the composition of regulatory networks. This sort of intervention can take different shapes. It can be done for example via selectively activating or deactivating specific network actors. As has been mentioned earlier, in regulatory networks, actors are not active all the time; only those who are concerned with specific regulatory issues get themselves involved when these issues become a subject of discussion. In supporting its position, the NTRA can play the network actors against each other. For example, based on its role as the protector of consumer rights, the NTRA can take decisions that might not be welcomed by the regulated industry. Abolishing subscription fees for the internet services is a case in point. By focusing on the interests of specific actors, the NTRA can activate these actors and get them involved in the interaction.

Changing the network structure can also be done through adding or taking away new actors to the network. Modifying the structure of the mobile telephony regulatory network by allowing the entrance of new actor to the market is a good example. Changing the network structure by adding a new actor (Etisalat) to the previous two incumbents (MobiNil and Vodafone) has impacted deeply on relationships and interactions between network actors. Firstly, it has broken the duopoly system controlled by the two previous incumbents for almost 15 years, which, in turn, means more competition between service providers and better services for end users. Secondly, adding a new actor to the existing network means new arrangements for service provision and new agreements to cater for the needs of the newcomer.

‘[----] with Etisalat joining the market, the whole set of arrangements for service provision needs to be reviewed. For example, at the present time we are negotiating the interconnection agreement of the new company as the law gives it the right to use the existing networks of the other two companies for providing its services in the places that are not covered by its own network’ (Int. 29).

Combining existing networks represents a third strategy normally used to redesign regulatory networks. The decision taken by the NTRA to allow mobile operators to provide VOIP services has had a great impact on both internet and mobile service provision markets. A condition for granting the new licence was that mobile operators have to own all or part of a data company. By doing this, the NTRA has changed the structure of the regulatory networks in both mobile and internet service provision arenas by creating a new arena where mobile operators and ISPs have to cooperate to provide the new service (see figure 9.1).

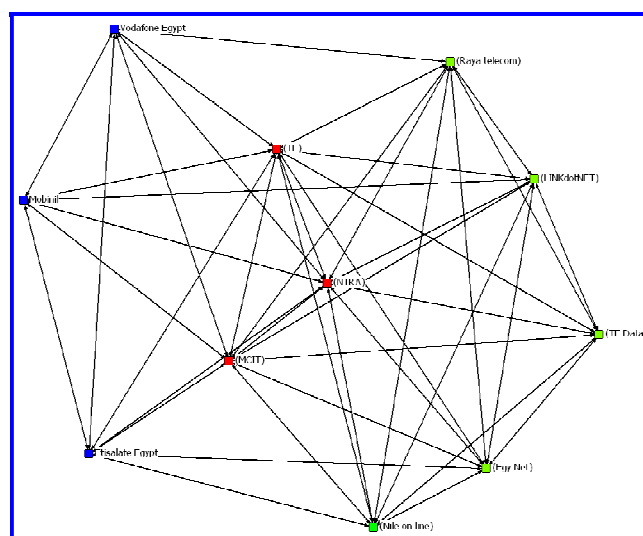


Figure 1: Consolidation between Mobile and ISPs

The result of this form of regulatory intervention is always the formation of a new network which differs in its characteristics and dynamics from the original ones. As we can see from the diagram in figure 9.1 a new network structure has emerged with new connections

between mobile operators and internet service providers. Such a transformation has a deep impact on the structure of the internet market and the competition between its main players.

'Link.Net after being purchased by MobiNil is not as the same as it was before this happened. The new ally gives the company more weight in the market and we now have a strong voice to protect our interests. This voice is the voice of Eng. Naguib Sawers, the chairman of MobiNil. So that, I think the future will be for those ISPs which have been consolidated with the GSM providers. Other companies have little chance to continue in the market as they will not be able to compete with the ones allied with mobile companies.' (Int. 18)

The way in which network actors respond to these forms of regulatory interventions differs from one case to another. In pursuing their own goals, the regulated companies in the two studied regulatory networks, in particular the mobile telephony network, follow a strategy based on the principle of reciprocity. In other words, in order to attract new actors to join the Mobile market, the NTRA has given the newcomer (Etisalat Egypt) preferential treatment in some areas to help the company to start its services. What the other two operators tend to do is to closely follow-up any kind of such favouritism and ask the regulator to give them the same advantages based on the fact that they also operating in the same market.

3.2. Changing the ground rules

Actors' behaviour in regulatory networks is governed by certain ground rules. Good examples of such rules are those which organise market structure and determine the entry and exit of actors. As a regulator, the NTRA has the right to review these rules and to change them if necessary to guarantee best performance for the sector. Based on this right, the internet market in Egypt is now undergoing a process of restructuring. The NTRA is reconsidering the licensing system and a new system may be in place in the near future because of the changes in the market and in the nature of the internet service provision itself. Undoubtedly, changing licensing rules will have a deep impact on the structure of the network in the first place and on its interplay dynamics as well. A regulatory staff member in the internet regulation section in the NTRA has referred to this issue by stating that 'at the present time we have three types of licences: class A, class B, and class C. Because the bases on which such a licensing system was built have changed, the differences between these three types of licenses have gradually diminished. Therefore, the NTRA is now reviewing the whole system and shortly there might be a new system in place' (Int.5).

Changing the ground rules is a common strategy to influence the institutional features of the regulatory networks and the interplay dynamics between their actors. However, in a response to these sorts of intervention strategies, network actors may also utilise a number of tactics in order to minimise the impact of such changes in rules on their interests. Firstly, they may ignore the changes in the ground rules and continue playing according to the old rules. As

mentioned before, rules can be described as such only when network actors accept, apply, and internalise them during their interactions. In other words, by ignoring the new rules, network actors break such rules, which, in turn, triggers another set of regulatory interventions to deal with such non-compliance.

In dealing with non-compliance situations, the NTRA follows an escalating strategy. This strategy reflects the idea of Ayres and Braithwaite (1992) about the enforcement pyramid. The executive president of the NTRA has identified the contours of this strategy by saying that '[...] as a regulator, I have many options to deal with non-compliance cases. These options range from issuing warning letters to withdrawal of the license. Because we need to keep our relationships with the regulated companies hanging in the balance, we do not resort to punishment and severe sanctions from the very beginning' (Int.1). What can be understood from these words is that, the greater the level of infringements, the harder the strategy to be used to deal with them. Such an escalating approach followed by the NTRA encompasses the following steps: informal contact with the non-complaints to inform them about their infringements and ask them to stop the undesired practices; an official warning letter to be sent that formally informs the company of the consequences of non-compliance and potential sanctions that it might face; sanctions in their different forms including fines, termination of the license, or refusing to renew the license in addition to many others can be the last resort to deal with non-compliance cases.

Despite such an escalation strategy to enforce regulations, the regulator has asserted that in most of the cases companies respond positively to informal communications or warning letters. 'There was no case, in which I resorted to heavy sanctions such as withdrawal or non-renewal of the license' (Int.1). At the general level, ISPs and mobile operators are keen on maintaining cooperative and amicable relationships with NTRA because such relationships affect their reputation in the internal and external markets.

Another indirect way that may be followed by network actors to deal with the changing of the ground rules as a regulatory intervention is creative compliance. In cases where ISPs and mobile operators are not able to ignore and break new rules, they try to circumvent them without jeopardising their amicable relationship with the NTRA. In other words, the regulatees try to reduce regulatory control through moving their activities to non-regulated areas. 'At the introduction of internet services, there was what we as ISPs called 'legally grey areas'. These areas were not covered by regulations so that most ISPs started to provide services in these areas. We have benefited a lot from the existence of such unregulated areas as regulations at that time were giving an exclusive right to TE to provide data services' (Int.17). Although creative

compliance is still available as a strategy for dealing with NTRA decisions, it is worth mentioning that, with the experience of NTRA growing, the quality of regulations improves, which, in turn, makes it difficult for regulatees to circumvent its decisions.

3.3. Managing Mutual Dependencies

Because actors in regulatory networks depend on each other, the decision-making situation is close in its nature to a give-and-take process. No actor, including the NTRA, can make unilateral decisions; otherwise such decisions may be prone to other actors' rejection. In networks, different problems exist together with different solutions. Problems are looking for solutions and solutions are looking for problems. Coupling problems and solutions is an influential way of affecting network interactions. Because of such dependencies, the NTRA tends to lean towards consultation with the regulated companies before making regulatory decisions. 'Sometimes we have a certain understanding of the problem and how it should be dealt with and sometimes we just start afresh by listening to what the regulated industry thinks about certain regulatory issues' (Int.2). By doing this, the NTRA acquires a panoramic view of the solutions available to certain problems and reduces the potential opposition or rejection of the decision by regulatees. Given the fact that NTRA possesses information about all actors while this information is not available to other actors in the network, it can match solutions to problems and take decisions on how to solve regulatory issues.

In such a collective decision-making environment, negotiation and persuasion are common tactics used by the regulated companies to ensure that the forthcoming decisions would serve their interests or at least would not hurt them. Conferences, workshops, consultation processes and hearing sessions provide the main media through which ISPs and mobile operators can convey their messages to the regulator. In such an environment, the logic of negotiating is paramount. Regulated companies use different strategies to improve their position. They use strategies like wait-and-see, and keeping plans and goals fluid, in order to maintain room for manoeuvre. 'Sometimes we have no options but to wait to see what will happen. We participate in consultation processes and hearing sessions and then we wait for the decision of NTRA' (Int.24). The regulatees may also form coalitions with other actors. 'It is very obvious at the present time that there is a new trend towards forming coalitions with the GSM operators. Many of those operators own either parts of or entire data companies. Of course those who form such coalitions with GSM operators will be better off than those who do not' (Int.20). To strengthen their position, the regulatees disperse particular information or give a specific meaning to this information. 'The market is full of rumours and because of competition most ISPs take decisions based on such information, which in many cases is proved not to be true' (Int.25).

In addition to negotiations, using network social capital such as human resources represents one of the common ways to influence the institutional characteristics of regulatory networks. 'Penetration' strategies based on staff movements between companies, or what is known in the regulation literature as the 'revolving door' effect, are considered an effective way to influence relationships and interaction patterns in regulatory networks. Because of the highly technical nature of the telecommunications field, regulatory networks working in this area are very close in their nature to what Rhodes and Marsh (1992) call policy communities. Membership is not open and it is restrictedly applied to those who practise this profession. The same logic applies for other sub-sectors such as the internet. Because of these restricted membership rules, staff move from one company to another and companies try to attract the best human resources to gain a competitive edge. Many of those who have been interviewed have moved between different companies.

The most striking example is the movement of TEdata's CEO to the post of TE's vice president for international and regulatory affairs. At the same time, TE's vice president for international and regulatory affairs went to TEdata as CEO. This movement of staff between TE and TEdata has had a great effect on power structure and relations in the network. The above mentioned movement of TEdata's CEO, according to a senior regulatory staff in a leading ISP, has changed his status from being a competitor to being a decision-maker, with powers to make decisions that might affect the whole sector. Furthermore, because of his previous affiliation to TEdata, his decisions are likely to be in favour of this company and at the expense of other ISPs. Added to this, the previous vice president for international and regulatory affairs in TE is a very powerful person, who succeeded in building strong connections with other players in the field. This in turn has added to the power of TEdata as an ISP.

3.4. Managing the Network Periphery

Management in multi-actor settings like networks is all about managing boundaries with other actors. It is not a top-down managerial style that follows a chain of command. To manage boundaries, all actors have established departments responsible for managing the middle ground between them and the other organisations. In other words, the main role of boundary spanners is to manage inter-organisational relations. Persons who play the role of boundary spanners can be found in different departments in the NTRA such as public relations. In ISPs, they can be found in strategic planning departments or governmental and regulatory affairs units. 'My department works as a brain for the company; my role is to pass

information when needed to decision-makers and to manage relations and information coming from outside the company' (Int.27).

For both the NTRA and the regulated companies, creating standard operating procedures is an effective strategy to minimise the pressures resulting from the extensive flow of demands and information coming from inside and outside their organisations. Of course, not all operations lend themselves to a definite or standardised procedure. However, both ISPs and regulatory staff have admitted that a large proportion of their everyday activities can fall under this category. ISPs, for example, are required to deliver reports on a regular basis to the NTRA that indicate the quality of services measures, number of subscribers, etc. Without such standard operating procedures, it would not be easy for them to generate and deliver such reports. 'Most of what we do is a routine job' (Int.6). As for the NTRA, the importance of standard operating procedures becomes clear if we consider how much information comes to the authority everyday from the different sub-sectors of the telecommunications field. 'NTRA is bombarded everyday with a flow of information; without a good system that can deal with the incoming information effectively it would become useless.' (Int.7)

4. The Institutional Foundations of Regulatory Networks

With the meaning, forms and consequences of institutional design identified above, the next section will focus on the institutional foundations of regulatory networks.

4.1. Network Rules: The Heart of the Institutional Setting

In the context of this study rules are broadly defined as general norm[s] mandating or guiding conduct or action in a given type of situation. From an institutional point of view, interactions and relationships between actors involved in regulatory networks are not random. Different forms of rules and values govern such dynamics. In this sense, rules come at the heart of any sort of institution including network governance. The behaviour of actors in regulatory networks is guided by different forms of formal and informal institutional rules. These rules have been developed by actors during their interaction in order to reduce the amount of uncertainty surrounding regulatory issues and to prevent network actors from behaving in an opportunistic manner. From this perspective rules are considered by scholars such as Klijn and Koppenjan (2004) as a by-product of interactions and actors' interrelationships in networks. However, we should also bear in mind that rules can be deliberately designed, enforced, and monitored by regulators or any other public authority in order to guarantee the continuity and the functionality of networks.

Classifying institutional rules in networks seems to be a never-ending story. In a review of the network literature, fundamentally different types of rules varying across major dimensions can be identified. Based on the level of institutionalisation and internalisation of rules by network actors, Klijn and Koppenjan (2004) have distinguished between two types of network rules: social and physical rules. According to their view, rules cannot be described as such unless they are accepted, internalised, institutionalised, and reflected in the everyday practice of network actors. Consequently, any regulatory space may include different forms of rules which are no longer subject to this description because they have been abandoned by network actors. Therefore, what matters for Klijn and Koppenjan is not the codification of rules but the acceptance and implementation by network actors.

Accepting the abovementioned distinction between social and physical rules can help us understand the conditions under which rules may change. As long as rules are made, interpreted, and broken by network actors during their interactions, it should be expected that, as social constructs, rules are also changed by actors. Such a change according to Bueren et al. (2003) can be a result of a designed intervention by a specific network actor (normally a governmental actor such as regulators). Rules may also change because of the actors' interpretations of their content. Different network actors perceive network rules in different ways which may lead to diverse interpretations of the same rule. The clash of perceptions and interpretations of network rules can result in the creation of totally new rules which may or may not reflect the content of the original ones. Network rules can also change due to actors' non-compliance and avoidance.

Another important classification of network rules from an institutional point of view is presented by Ostrom (1990), who distinguishes between seven types of rules. These rules influence greatly the way in which networks are structured and function, or what Hertting (2004) calls 'network governance' (see table 1).

Dimension	Network governance
(1) Position rules	Dependent actors, affected interests
(2) Boundary rules	Free enter, free exit, informal recognition
(3) Scope rules	Policy problem
(4) Procedural rules	Informal cooperation
(5) Aggregation rules	Negotiations
(6) Information rules	Honest exchange of expertise and opinions
(7) Pay-off rules	Exchange of control and critical resources, being heard

Table 1: Network Governance as a Set of Rules
Source: Hertting (2004: 6)

As the table indicates, the first type of network rule, ‘position rules’ determines actors’ positions within the network structure. As has been mentioned, dependency relationships and conflicts of interest between actors involved in the network play an important role in identifying actors’ positions. The next type of rule is the ‘boundary rules’, which demarcate the network boundaries by allowing the participation of specific actors and forbidding the access of others. These rules also regulate the exit options of network actors and are based on recognition by other participating actors.

Rules which identify network issues, or what Ostrom calls ‘scope rules’, define the nature of policy problems to be dealt with by network actors. Another sort of rules, ‘authority rules’, clarify what procedures are to be followed and what actions are to be taken by actors in a particular position. Because of the diversified nature of policy networks, the decision-making process in such a context is characterised by divisions and multiplicity. Rules that regulate such diversity in decision-making environments and indicate how sub-decisions are integrated are known as ‘aggregation rules’. Information rules regulate the process of information exchange within the network. They define communication channels together with who should deliver what kind of information to whom and when. Information rules also define the language of communication and the form of the messages that are transmitted via the communication channels. Finally, the end results of interactions between network actors and the benefits from these interactions are determined according to ‘pay-off rules’.

Despite the popularity of Ostrom’s typology, Klijn and Koppenjan (2004) have noted that, because Ostrom was primarily motivated by an economic perspective which assumes that rules are laid down explicitly in games between actors, her classification has overlooked a number of important categories of rules, including those which determine the identity of actors and their professional standards. Based on this observation and inspired by the work of Ostrom, Klijn and Koppenjan (2004) have attempted to come-up with a more general typology of network rules. They started by making an overall distinction between rules that identify the structural elements of the network, ‘arena rules’, and rules that govern interaction and relationships in networks, ‘interaction rules’ (see table 2).

As the table shows, arena rules help network actors to understand the nature of the situation and the characteristics of the arena they find themselves in. In other words, they determine the network reality through identifying actors’ positions and pay-offs. As such, arena rules can be divided into three subsets of rules: reality rules, pay-off rules and position rules. Reality rules identify what is considered by other actors as ‘good’ or ‘bad’ in relation to

aspects such as behaviour, product, information, standards and practice, while position and pay-off rules underline what positions are more important than others and also what rewards network actors will gain from participating in collaborative processes.

Type of rules	Description	Aspects	Examples
Interaction rules	Rules which regulate interactions in the game; i.e. Rules which specify what is and is not permitted in games between actors	Access to policy game	-exclusivity -selection -exit options
		Interaction in policy game	-(non) intervention -provision of information -conflict
Arena rules	Rules which regulate the game setting;	Reality	-identity of actors -product rules
	i.e. Rules which specify what type of game and network is under discussion in any given case	Pay-off	-status -evaluation criteria
		Positions	-status -powers

Table2: Types of Rules in Networks
Source: Klijn and Koppenjan (2004: 6)

On the other hand, interaction rules are more of procedural nature. They determine what behaviour is considered acceptable by other actors in the network and what is not. Rules that regulate the access to policy games and those which govern actors' interactions and interrelationships are good examples of interaction rules.

Inspired by the work of scholars such as Ostrom (1990), Klijn and Koppenjan (2004) and Hertting (2004), in this study rules as a fundamental component of the institutional context of regulatory networks will be examined in the case of the internet and mobile telephony regulatory networks in Egypt. Analysing the institutional context of the two networks, a distinction can be made between two types of rules, namely *normative* and *practical* or operational rules (see table 3).

Type of rules	Description	Examples
Normative rules	Rules which determine the underlying values and norms that all network actors agreed upon	- Transparency - Accountability - Fairness - Consumer protection
Practical rules	Rules which regulate the conduct of the regulatory process and govern the behaviour of participating actors.	- Non-discrimination as a base for actors' relationships - The mutual respect of jurisdictions - A participatory regulation-making process - Encouraging and protecting competition - Technology neutrality

- Professionalism
- non-politicised decision-making

Table 3: Institutional Rules in the Internet and Mobile Telephony Regulatory Networks

As the table illustrates, at the normative level, all the network actors have agreed upon the importance of certain values such as transparency, accountability, fairness, consumer protection, and the development of the sector. These normative drives formed the base of many practical and operational rules that can be found in practice. Such practical rules include among other things the following:

Non-discrimination as a base for actors' relationships: The equal right of all ISPs and mobile operators, each according to his license grade, to access the telecommunications network without any discrimination is guaranteed by law. The ISPs and the mobile operators have the right to interconnect their networks with public networks. They also have the right to build facilities-based networks and have access to key facilities in addition to their right to lease lines to supplement their networks or, alternatively, purchase telecommunications services from domestic suppliers. All actors are equal in practising these rights. According to most of the ISPs and mobile operators, the NTRA plays its role in this regard in an efficient way and acts as a fair judge between all regulated companies. 'When it comes to the relationship with ISPs, NTRA is a neutral and fair player' (Int.25). Regarding trust, most of the ISPs see NTRA as trustworthy; however, when it comes to the other network actors, the level of trust declines. 'At the end of the day we are still competitors, so we cannot trust each other' (Int.17).

The mutual respect of jurisdictions and of spheres of actions: In this regard, all actors accept the roles of the others in the light of the discretionary powers given to each party on functional bases. For example, all ISPs, mobile operators, in addition to the NTRA, respect the role of the MCIT as the sector's policy-maker. Also, all ISPs, mobile operators, and the MCIT fully admit and respect the role of the NTRA as the regulator and manager of the sector. As noted by the regulator, 'the Minister does not interfere in the way that we manage and regulate the sector as long as it does not contradict with the broader telecommunications policy directives' (Int.1). Both the MCIT and the NTRA assert the role of the regulated companies as service providers and confirm their right to manage their own affairs without any interference as long as they comply with regulations and take into account the interests of consumers.

Actors' participation in regulation-making: As we have mentioned before, all actors have the right to access the regulation-making process. The regulator and the MCIT as the main decision-making bodies in the sector understand the importance of the regulated industry participation. As for the MCIT, 'partnerships' is a catchword in most of the Minister's

speeches. For the NTRA the regulated industry is a legitimate participant in the regulatory process, and its role is essential for making responsive and enforceable regulations.

Competition Safeguards: All network actors value competition and see it as the driving force for achieving more economic efficiency and providing consumers with high quality services. In this regard, assuring competition guarantees and preventing any monopolistic practices are two of the main duties assigned to the NTRA and monitored by the MCIT. To this end, the NTRA has developed a framework based on free competition on a non-discriminatory basis. The competition framework deals with different issues such as the misuse of a dominant position, cross-subsidisation, refusal to supply essential facilities, vertical price squeezing, dumping, predatory pricing, misuse of information and restrictive agreements.

Technology neutrality: According to the network rules, the NTRA as the regulator to the sector is not allowed to impose certain technologies on ISPs, mobile operators, or any other telecommunications suppliers. As long as the technology used is compatible with the telecommunications network in Egypt, each actor is free to use whatever technology it wants to improve the quality of services provided.

Professionalism and technical standards as bases for decision-making: Because of the long history of telecommunications as a monopolistic sector, it has been subject to many forms of state intervention. Political considerations have formed the motives behind many decisions. Economic efficiency and technical considerations were not ultimate criteria for decision-making. Following the liberalisation process, this is no longer the case. All actors have agreed to depoliticise telecommunications issues and not to mix political considerations with economic and technical requirements. In this regard, it is worth indicating that TE, the previous incumbent, still suffers from some forms of state intervention because it is still owned in its major part by the government. ‘We face many political pressures; however, the management tries to avoid such pressures and to run the company on commercial bases’ (Int.26).

The existence of such agreed-upon normative and practical rules can decrease to a great extent strategic uncertainty in regulatory games in the two studied networks. They can assure the network actors that none of them will be behaving in an opportunistic way even if they have the chance to do so. They also work as a yardstick against which actors’ behaviours and actions can be checked and corrected in case of misconduct.

With network rules so identified, the discussion now moves to another institutional aspect in the design of networks, which is the cohesion factors that hold the parts of the networks together.

4.2. Cohesion Factors and the Institutional Design of Networks: Trust, Mutual Dependency, and Managerial Ability

Whereas in the context of single hierarchal organisations the legal-rational authority represents the cohesion factor that holds the different parts of such organisations together, in the context of regulatory networks identifying cohesion factor(s) is subject to different interpretations. Trust, mutual dependency, and managerial ability are identified by Agranoff (2003b) as impermanent cohesion factors in network settings.

Concerning mutual dependency it can be noticed that network actors in the mobile telephony and internet service provision arenas are mutually dependent. On the one hand, the NTRA and the MCIT need private operators to deliver telecommunications services and in turn to achieve the intended sectoral and regulatory policy goals. On the other hand, private operators are dependent on state actors such as the NTRA and the MCIT with respect to the creation of a suitable policy and regulatory environment where they can run their business and achieve profits. Moreover, among operators there are dependency relationships from ISPs and mobile operators to TE as they need to be connected to telecoms infrastructure controlled by TE. Such dependency relationships work as the cement that holds the parts of the two regulatory networks together.

As a cohesion factor, managerial ability refers to the competence of the network manager to provide a model of leadership based on soft guidance and steering rather than command-and-control and go-it-alone management style. According to the regulated industry, the NTRA is doing very well on this front as it is competent and managing the sector on a professional basis. Nevertheless, some of the interviewees have referred to the involvement of the authority in some minor issues which can be better dealt with by the companies themselves.

‘No one can deny that the NTRA as a regulator is competent. The NTRA today is not the same as the NTRA in 2003. Every day the authority develops new skills with respect to managing and regulating the sector. However, despite such competence, what you have mentioned about soft steering and guidance cannot be obviously seen in the way that the NTRA manages the sector. Up till this moment, minor issues such as promotions should be approved by the authority while it should be left to the companies to decide upon.’ (Int.21)

One possible explanation of the heavy involvement of the NTRA in the day-to-day activities of the regulated companies is that the nature of the developmental stage of the market at the time being requires such an intervention. In other words, the regulated industry does not see itself as being mature enough to be self-regulated: ‘The existence of the NTRA is important not only to protect consumers but also to protect small companies. So that, I think now is not the right time for the NTRA to retreat and let the industry to regulate itself.’ (Int.16). ‘As ISPs I think we still need the NTRA because we are not mature enough yet to regulate

ourselves and the market still has many practices that need to be regulated to achieve the best interest of the market' (Int.24).

With regard to trust, the importance of such an institutional foundation becomes very obvious if we consider the level of ambiguity and uncertainty in regulatory arenas. As has been mentioned before, network actors come from different backgrounds to work collectively on an issue in order to reach a collective value. To this end, network actors join regulatory games in which each actor attempts to steer the regulatory process in the direction that fulfil his goals and objectives. In such a context, actors' interactions are vulnerable to different forms of opportunistic behaviour. Therefore, without a minimum level of trust between network actors, it is difficult to imagine that such actors can start a cooperative process to solve the issue at stake.

From this angle, many scholars regard trust as a prerequisite for any cooperative or collective sort of action. Hudson (2004) has noted that, as an institutional characteristic, trust can facilitate and promote several kinds of social processes that can lead to the development of synergistic relationships. In the same vein Eggers and Goldsmith (2006) observe that successful networks rely, at least partly, on trust. Without trust, participants will be unwilling to share knowledge, and coordination will be more difficult.

Despite such an agreement on the importance of trust as an institutional foundation in any networked form of organisations, there is no an agreed-upon way to measure it. Different scholars identify different measurement criteria. In the context of this study, trust in the two analysed regulatory networks will be measured against four criteria: participant motives, competency, dependability, and collegiality (see Hudson, 2004). To begin with, actors' perceptions with regard to other network actors' potential opportunistic behaviour will be discussed in order to illustrate how loyal network actors are to the overall purpose of the network. Following on from this, actors' competencies in terms of possessing the knowledge and skills to do what is expected will be examined. Holding the necessary resources, or what Hudson calls 'dependability', is another important criterion to be tested for measuring the level of trust among the network actors. And finally, 'collegiality' in terms of the level of mutual respect and fairness will be investigated.

Starting with actors' motives to join the network it is worth mentioning at the beginning that not all network actors have a full understanding of the notion of policy networks. They tend to use other terms such as *market*, *sector*, and *partnerships* to describe and refer to their positions in relation to the other actors working in the same field. This is not to say that regulatory networks in terms of actors, relations, interactions and games do not exist but, as is the case in many policy

and managerial fields, actors practise something but they do not name it. Following on from the above, the analysis of the interview materials shows two main motives for working collectively in networked forms of organisations. For non-state actors the first and foremost motive is to make profits: '[...] at the end of the day we are a private company and if we do not make profits so why should we continue in providing the service' (Int. 22). For state actors, namely the NTR and the MCIT, the prime motive for them to work cooperatively with private companies is to develop the telecommunications sector, which in turn will be reflected in the level of service quality and the satisfaction of end users. '[----] as a policy-making body the MCIT has adopted different partnership projects with the private sectors in both internet and mobile markets. These projects aim at developing the whole sector; firstly, by creating a business friendly environment and, secondly, by encouraging private operators to present the state of the art technology in their area of specialisation' (Int.9). In addition to sector development, the NTRA as a regulator has another motive which is reflected in its everyday practices: to protect consumers and end users from the undesired practices of the private companies.

Having identified the motives of state and non-state actors for joining regulatory networks, it is obvious that the motives of these two sets of actors do not necessarily go hand in hand. In other words, in order to achieve profits private companies may neglect some important aspects of service quality which in turn will reflect negatively on the rights of the consumers to receive high quality telecom services. In this context, the question becomes to what extent network actors' expect each other to be committed and not to betray the overall collective goal of the network. In this regard, most of the interviewees have shown a high level of confidence and trust in the roles played by both the NTRA and the MCIT.

'Yes we trust the NTRA and the MCIT because simply it is in their interests and for their benefits to have a successful and continually growing sector. From this angle, I think they both will do their best to serve their goals with regard to sector development and consumer protection' (Int.16).

'When it comes to the roles played by the NTRA and the MCIT, there is no way not to trust them. As private investors, our decision to enter the Egyptian market was based on our understanding of the potential opportunities for growth in this market together with some promises from the policy-making and regulatory bodies.[----]Up till this moment they try to fulfil their promises, so that we trust them' (Int.28).

At the same time the NTRA realises it is trusted by the regulated industry.

I think the NTRA is trusted by all other parties and the most obvious indicator of this is the value of the third mobile license that has been recently granted to Etisalat. The company has paid 17 billion Egyptian pounds for the license. If there was any suspicion of the role of the NTRA as a regulator or any doubt regarding the future of the telecommunications market in general, no private investor would make such huge investments. What we can conclude from this is that the market is well regulated, the rules are clear, and the regulator is fair, competent, and trusted. (Int.2)

With trust in place, the following question is on what bases network actors establish such a relationship. Trust is a two-way relationship that can be built, fostered, or eroded as a result of many factors. For example, the previous experience in dealing with specific actors in different situations in the past can be a basis on which actors may or may not trust their counterparts. Such psychological and perceptual elements of trust can form the foundation for cooperative relationships in different forms of networked organisations. Nonetheless, in policy networks and, by extension, regulatory networks, in addition to such psychological and perceptual elements, actors tend to trust each other on a more institutional ground. In other words, historical relationships, previous experience and reputation can all be driving forces for building trust relationships. However, for trust to last between network actors some other institutions such as contracts, agreements, laws, and licenses should be in place.

In the context of the two studied regulatory networks, network actors refer to different types of institutions as pillars to their trust relationships. The telecommunications law 10/2003, licences, sector regulations, and bilateral or multilateral agreements are mentioned by interviewees as bases for trust relationships:

‘The trust relationship between the regulated companies is based on agreements that determine the rights and duties of each party. Before such agreements are concluded, interested parties come together and discuss the different issues related to the agreement and coordinate the way in which each party will fulfil his obligations. The national roaming is a good example in this regard. We now discuss with Etisalat, TE, and MobiNil this issue and try to come to an agreement on how the new company will use our networks to cover the areas that are not covered by its network. We also try to figure out how we too can use that same right’. (Int.28)

‘Our relationship with the NTRA is controlled by our license and the telecommunications law. These two important documents represent the framework within which each party works to fulfil its obligations. As such, rights and obligations are clear to each party and trust then can follow’ (Int.17)

‘Trust is a blurred concept; [-----] what governs such a relationship should be the rules and regulations that manage the sector. When the regulated companies violate such rules and regulations the NTRA has the right to interfere and use its powers to stop such violations. In case of non-compliance from the regulated industry, it has the right to punish them. At the same time, if the NTRA violates any of these rules or regulations, the regulated industry will be able to stop it using the available mechanisms for disputes resolution’ (Int.21).

Moving now to competency as another criterion for measuring trust relationships between network actors, it can be noticed that at a general level most of the actors in the two examined networks regard each other as competent. On the one hand, most interviewees from the regulated companies have confirmed the competency of the NTRA and the MCIT:

‘For the MCIT I think it is very competent as a policy-making body responsible for formulating the strategic vision for the whole sector. Just look at the developments that have happened in the telecommunications market since liberalisation and you will realise how competent the Ministry is. Telecommunications today is one of the most successful economic sectors in Egypt’ (Int.22).

‘Compared to large companies, the NTRA has limited resources. If you compare the legal or accounting department in the NTRA with those in large companies such as Vodafone you will see the difference. However, the NTRA has built and is still building its capacities in different areas and in my view it is progressing very well in this respect and in time it will be stronger than the industry it regulates’ (Int.2).

‘As a regulator the NTRA manages the sector competently and professionally’ (Int.29).

‘[-----] the NTRA has been developed over the past few years and still developing. NTRA today is not NTRA in 2003. Over those years the NTRA has built-up its capacity, improved its knowledge and widened its experience. The more the body get involved in regulating the sector, the more the experience it gets’ (Int. 26).

Despite such an agreement on the competency of the MCIT and the NTRA, the regulated companies in the two studied policy arenas have admitted the fact that the role of the regulator is not an easy one, particularly when it deals with a fast changing sector such as telecommunications. In this context and focusing on the role of the NTRA, the regulated industry has identified the following areas of improvement: the need for a highly specialised team particularly in economic issues to be able to calculate costs and to fix services prices; to be faster and more responsive to the demands from the regulated industry; more training and capacity building for its staff to build-up their experience in different regulatory fields namely with regard to technical and technological areas; to have a strategic vision for the data sector as a whole that draws the road map for the ISPs and the other players over a long period of time.

During his interview, the executive president of the NTRA has shown a full understanding of the above mentioned demands. In this regard, he has confirmed that the NTRA as a regulatory body is progressing every day but as a newly borne institution the authority is still in the stage of capacity building. Qualified, fresh, and competent engineers are encouraged to join the NTRA and when they join they go through a series of training programmes to improve their skills with regard to regulatory issues and to complete the lack of knowledge and information which may exist in specific areas. To this end, the regulator added, the NTRA allocates a considerable part of its budget for training to be sure that its staff have the latest knowledge in the field and work on equal technical and managerial footing with their counterparts in the regulated companies.

With regard to the way in which the NTRA sees the regulated industry from a competency perspective, a regulatory affairs senior staff member in the authority has noted that most of the companies working in the Egyptian telecommunications market are well-known names in the world of telecommunications. They have the experience, the resources, and the reputation which make them competent to perform their expected roles with regard to service delivery.

A criterion related to competency is dependability in terms of the availability of resources that enable network actors to perform their roles. Resources, as, has been mentioned before, may take different forms; however, the majority of the interviewees have shown an overall agreement that the NTRA has at its disposal the resources needed to perform its role as a regulator for the sector.

‘According to my view, the NTRA possesses the resources required for any regulatory body to manage and regulate the sector effectively. Firstly, it has the legal mandate as it is reflected in the body of the telecommunications law and the Ministerial directives. Secondly, it has the financial resources needed to run the authority. And finally, it has skilful manpower that shows an understanding of the recent developments in the field of telecoms. So yes, in terms of the availability of resources, I think the NTRA is dependable’ (Int. 21)

The same attitude is reflected by the NTRA staff with respect to the regulated industry. Most of the interviewees from the authority regard the regulated companies as dependable in terms of resources availability. In this regard, a senior regulatory staff member has noted that, in choosing and licensing any private company, the NTRA makes sure that it always selects the best in terms of experience, resources, reputation, and technology; by doing this, the authority can guarantee the dependability of the private companies operating in the sector.

The last criterion for measuring trust is collegiality, which refers to showing respect and fairness among network actors. As has been indicated in the previous section, one of the ground rules that regulates actors’ interactions and interrelationships in the two studied networks is the mutual respect of jurisdictions and of spheres of actions. In short, actors in the two studied networks respect the roles and the legitimate rights, motives, and objectives of the other actors. This is reflected in the everyday practice as the regulatory body acknowledges the legitimate rights of regulated companies to make profits so that it tries to make responsive regulations. At the same time the regulated companies understand the role of the regulator as a guardian of consumer rights, and attempt to comply with the regulations it makes. Regarding fairness, many voices from the regulated industry have confirmed that the NTRA treats all the regulated companies equally and plays its role as a regulator with fairness, neutrality and integrity.

To sum up, according to the above-mentioned four criteria, both regulatory networks in the internet and mobile telephony arenas show a considerable level of trust in terms of their expectations with regard to other actors’ motives and in relation to other actors’ competence, dependability, and collegiality. Despite the fact that some of these actors have previous experience in dealing with other network actors, which may form the base for trust relationships, the majority of the actors have emphasised the importance of institutions such as laws, agreements, and contracts as pillars for their trust relationships. One possible explanation for this is the novelty of the liberalisation and regulation experience in the Egyptian

telecommunications market, which means that some of these actors are meeting each other for the first time. In this context, the existence of such binding institutions is expected to be a precondition for trust relationships between network actors.

4.3. Independence as an Institutional Guarantee for Regulatory Effectiveness

Regulatory independence is one of the hot issues in the debate over the institutional design of regulatory systems. Many scholars agree that providing regulatory agencies with a sufficient amount of independence is a prerequisite for designing effective regulatory systems. In the context of this study, the notion of regulatory independence is used in the broader sense to refer not only to the legal or formal independence of utility regulators, but also to the independence of human and financial resources, in addition to the ability to decide upon what to do and how to do it without interference from the parent organisations. With this meaning of regulatory independence in mind, I asked respondents to reflect on the level of independence between the NTRA and the MCIT on the one hand, and between the NTRA and the regulated industry on the other hand. In plain English, respondents were asked how independent they think the NTRA is from the MCIT and from the regulated industry.

The answers to my question varied according to the respondents' understanding of the meaning of 'independence'. The term was not intentionally defined for them at the beginning in order to give them the opportunity to reflect on the different aspects of this concept. From the responses in the interviews it can be noticed that, when it comes to the relationship between the NTRA and the MCIT, there is an overall agreement from the viewpoint of the regulated companies that the NTRA is not independent of the MCIT. However, it is worth mentioning in this regard that informants' opinions regarding the degree of dependency from the NTRA on the MCIT vary. For some regulated companies, the NTRA, the MCIT and TE represent the interests of the government, while private regulated companies represent the interests of business. According to this dichotomous viewpoint (government vs. business) of this group of informants, there is no place to talk about 'independence' in the relationship between the NTRA and the MCIT.

'At the end of the day, the NTRA and the MCIT are parts of the government apparatus. They both work together within a wider framework that reflects the policy orientations of the government. Therefore, personally I think there is no difference between these two bodies' (Int.18)

In addition to the group of respondents who rejected the notion of regulatory independence to describe the relationship between the NTRA and the MCIT on the ground that both organisations have the same affiliation, another group of respondents share the same opinion but on different grounds. Structurally speaking, this group of regulated companies'

representatives rejected the notion of regulatory independence due to the fact that the Minister of Telecommunications is the head of the board of directors of the NTRA. As has been summarised by some respondents:

‘With the existence of the Minister at the top of the NTRA nobody can say that it is totally independent. In many cases the NTRA do what the Minister tells it to do because they both represent the interests of the governmental side. From this perspective when the company has a problem with the NTRA it resorts to the Minister hoping that he would support the company but this did not happen.’ (Int.30)

‘Regarding the relationship between the NTRA and the MCIT, the former is not independent from the latter. The MCIT in fact presides over the NTRA. The NTRA cannot do anything that the MCIT does not want it to do. And if it tries, the Minister is there as the head of its board of directors to correct this situation if it happened’ (Int.24)

Another group of respondents have seen the NTRA as *partially* independent in its relationship with the MCIT. The analysis of this group’s answers reveals that their interpretation of the term ‘independence’ differs from the previous group who sees the NTRA as totally dependent on the MCIT. This group of informants adopts a more functional interpretation of regulatory independence. Their understanding of the notion of independence is very close to the way in which scholars such as Melody (1997) define this concept. According to them, independence means the capability of the regulatory authority to make its own decisions and to implement them without undue intervention from political authorities. In other words, they regard regulatory independence as non-interference by the MCIT in the way that the NTRA regulates the sector. From this perspective, the majority of interviewees have confirmed that, when it comes to technical and regulatory issues, the Ministry gives the NTRA enough authority to make and enforce its own decisions.

Following on from the above discussion it can be concluded that, regarding the relationship between the NTRA and the MCIT, the regulated industry considers the authority as either dependent on the Ministry or partially independent based on their interpretation and understanding of the notion of independence. The question that needs to be answered now concerns the independence of the NTRA from the regulated companies. With reference to the interviewees’ responses, apparent agreement on the independence of the NTRA from the regulated companies can be inferred. Most of the interviewees from the regulated industry have confirmed that, while they regard the regulator as totally or partially dependent on the Ministry, they have no doubt that it is to a large extent independent of the regulated companies. The following comments by interviewees support this observation:

‘In its relations with the regulated industry the NTRA is totally independent. It tries to be an impartial player and make decisions that benefit the whole sector’ (Int.30)

‘The NTRA is not independent from the MCIT because the Minister of telecommunications is the head of its board of directors. However, when it deals with the regulated companies the NTRA tries to be as fair as much as it can and from this perspective it is trusted and respected by most of the companies’ (Int.20)

‘The NTRA is not independent from the MCIT; however, it is impartial and fair in dealing with the regulated companies’ (Int.19)

In spite of the agreement of the regulated industry representatives that the NTRA is independent to a great extent in its relationship with private companies, they also highlighted the fact that this is not the story with other state actors such as TE.

‘In my view the NTRA is partially independent from the government but totally independent from private companies. At the same time the NTRA has a special relationship with TE upon which all ISPs depend in providing their services. Because of the close relationship between TE and TEdata the former always gives the latter preferable treatment’ (Int.18)

‘The NTRA is independent to a great extent from the MCIT and to a greater extent from the regulated industry. This is not to say that there is a special relationship between the MCIT, the NTRA, and TE as the three of them are governmental bodies. However, what is important for us as a regulated company is that the NTRA is balancing the interests of all parties and its decisions do not benefit one of them at the expense of the other. One example of such a special relationship is that sometimes the NTRA consults TE first on a specific issue before the other regulated companies’ (Int.22)

The discussion so far reflects what the regulated companies think about the independence of the regulator from the parent organisation and from the regulated industry. In order to complete the picture input from the NTRA and the MCIT in this regard is required. From the analysis of the responses of the interviewees from these two bodies it can be noticed that both the NTRA and the MCIT share a conception of regulatory independence closer to that adopted by group two of interviewees from the regulated industry (partial independence). Firstly, they admit that there is no total or complete independence for the regulatory agency. Some statements made by the regulator when asked to reflect on the relationship between the NTRA and the MCIT can clarify this issue. In this regard and as has been mentioned before he described such a relationship as ‘organic’ which means both bodies are part and parcel of the overall governmental machinery. In addition to this he commented on the notion of independence by saying that ‘there is not 100% independence between regulators and parent organisations anywhere in the world’.

Secondly, based on the mutual respect of jurisdictions and of spheres of actions as one of the ground rules that governs the relationship between all actors involved in regulatory networks, representatives from the NTRA and the MCIT have confirmed that the NTRA enjoys a high level of independence with regard to making and enforcing regulations and regulatory decisions.

‘Regarding the process of policy-making the NTRA is involved in the process of making policy and the process of implementation as well. In the process of making policies the NTRA is only one vote among many other stakeholders who participate in this process. However, in the implementation process it is the main player responsible for enforcing regulations and policies’ (Int.2)

Despite such an agreement on the partial independence of the NTRA, the interpretation of the NTRA and the MCIT of regulatory independence is broader in nature than that adopted by the regulated companies. In addition to the independence of decision-making and implementation processes, respondents from the authority and the Ministry have added some new elements such as independence with regard to financial and human resources. In this sense, to be independent is to work at arm’s length from the parent organisation and the regulated industry at the same time (compare Smith 1997). Accepting this notion in principle, the following question will be how long is that arm that separates the NTRA and the MCIT? Is it long enough to enable the NTRA to perform its regulatory duties? And if so, what about the Minister and his presidency of the board of directors of the NTRA? The answers to these questions may clarify the issue of regulatory independence and reduce the level of confusion regarding what is meant by independence.

Generally speaking, it can be concluded from the answers of the interviewed staff in both the NTRA and the MCIT that the length of the arm that separates the two parties is enough for the former to perform its regulatory duties in an effective way without any kind of unwanted intervention from the MCIT. Added to this, most of the interviewees do not see any problem with the Minister of Telecommunications as the head of the authority board of directors.

When we talk about the independence of the NTRA we should consider the fact that it is divided into two main parts: the board of directors and the executive body. From this perspective the existence of the Minister of Telecommunications as the head of the board of directors does not affect the independence of the NTRA for many reasons:

- Firstly, at the end of the day, the NTRA is the prime organisation responsible for regulation enforcement and not the MCIT. In this area the NTRA is totally independent and has the authority to play this role effectively.
- Secondly, from a structural view point, the NTRA is not a part of the organisational structure of the MCIT. It has its own rules that regulate its internal affairs. It also has its independent budget and its organisational chart that does not come under the MCIT.
- Thirdly, the board of directors consists of representatives of the different stakeholders who might be affected by the authority’s decisions. As such, all parties are represented, and the powers within the boards of directors are balanced. Each party can defend the interests of his organisation and the final decision should be taken on the majority ground. Hence, the Minister of Telecommunications represents only one vote among many others that can oppose him. (Int.9)

Added to the above-mentioned points some of the staff in the NTRA sees the presidency of the Minister of Telecommunications of the board of directors of the authority as a necessity for reporting and coordination, and functional purposes:

‘The NTRA is financially and managerially independent from the MCIT but it should be reporting to someone. Regulators all over the world follow the minister concerned, the prime minister, or the parliament. In our case in Egypt I see it is better to follow the Minister of Telecommunications for the following reasons:

- As the minister concerned, the Minister of Telecommunications is most capable of understanding the nature of the market and the characteristics of the problems that the players in this market face. Hence, he would be able to cooperate with those players to come-up with a solution that serves the interests of most of them.
- Also as the minister concerned, the Minister of Telecommunications has the power to pressure some major player such as TE to provide information or to take some actions that cannot be done without his interference.
- From a competency point of view, other institutions such as Parliament are not qualified enough to be involved in discussion on technical issues related to telecommunications and making sound decisions.
- Added to this, the dual role of the Minister of Telecommunications as the head of the board of directors of the NTRA and as the head of the MCIT serves the coordination purposes between the two organisations

Taking all these reasons together I can conclude that the existence of the Minister of Telecommunications as the head of the board of directors is in the best interests of the NTRA and the whole sector. We should not worry too much about the independence issue because there are many votes within the board which can counterbalance the powers of the Minister (Int.2)

It is worth mentioning in this context that the above expressed viewpoint regarding the benefits of the existence of the Minister of Telecommunications as the head of the NTRA board of directors represents not only the opinion of the state actors but also the view of some of the regulated industry:

‘The existence of the Minister of Telecommunications at the head of the NTRA board of directors has benefited the latter. The reason for this is that the Minister comes from the industry. He is a communication engineer and he fully understands the nature of the industry and the way in which the sector should be dealt with. Such expertise and awareness are reflected in the way in which the MCIT is dealing with the NTRA and the approach that both of them follow to manage and regulate the ICT sector. In this context, the MCIT has emphasised the impartiality of the NTRA and tries to reinforce its independence. If we supposed the opposite case, in other words the Minister of Telecommunications coming from another industry, such harmony and understanding in the relationship between these two bodies would disappear and the independence and impartiality of the NTRA might be affected’ (Int.16)

The same point has been emphasised by the regulator himself when he referred to the mutual understanding between himself and the Minister because they have the same technical and educational background (both are telecoms engineers) so that they both can speak the same ‘language’ and can understand the nature of the problems that face the sector and in turn develop a common vision with regard to how these problems should be dealt with.

Following on from the above discussion, and to conclude this point regarding regulatory independence, a final question needs to be dealt with: does regulatory independence really matter? A simple and straightforward answer to this question from an institutional point of view is that, yes, it does matter as it is necessary for guaranteeing the effectiveness of the regulatory system. However, the examination of the two studied regulatory networks has revealed the fact that regulatory independence is a necessary but not a sufficient factor to guarantee the effectiveness of the regulatory system. From the perspective of the regulated companies, the existence of an accountable regulatory system that ensures transparent and clear ground rules which are applied for all players on equal footing can be more important than independence.

‘Dependency relationship does not necessarily mean it is negative by nature. On the contrary, I see it as a positive relationship because what matters at the end of the day is the way in which the NTRA deals with the regulated companies. In this respect I can assure you that the NTRA plays its role as a regulator very well; it is fair, competent, and works in the best interests of the whole sector’ (Int.22)

Having concluded this, the focus of the next section will be on how accountable and transparent the regulatory system in the Egyptian telecommunications market is according to the view points of the actors involved in the two investigated networks.

4.4. Accountability, Transparency, and Due Process

Accountability is defined in the context of this work in accordance with Lodge (2002) as the obligation to account for regulatory or any other type of activity to another body or person. In this sense, regulatory agencies such as the NTRA are required to answer and to explain their actions and decisions to different parties including the Legislature, the Executive and the Judiciary, in addition to consumers and regulated entities. At the same time, regulated companies should also be held accountable to the regulatory agency on the one hand and to their stake holders on the other. As such, accountability in the context of regulatory systems takes different shapes and can be practised at different levels. Accountability can, for example, be formal in terms of complying with laws, procedures, and rules, or it can be informal in the sense of being transparent and open to the scrutiny of the public and stake holders. These two forms of accountability support one another and should go hand in hand; however, in some cases one form can be found while the other is absent

In order to measure the accountability and the transparency of the regulatory system in Egypt, the typology presented by Hood (1983) has been used as a guide line. In other words, these two institutional foundations are checked against the following criteria: the accountability and

transparency of the decision-making process; the transparency of rules to be followed; the accountability and transparency of activities of regulated actors; the accountability and transparency of controls exercised on those operating within set rules; and the accountability and transparency of feedback processes.

Starting with the first criterion, it can be observed that, with regard to the NTRA, the executive president of the authority is required to explain and to bear the consequences of the manner in which duties have been discharged, functions fulfilled and resources utilised before the board of directors. ‘The Executive President shall be responsible of the NTRA technical, administrative and financial affairs and activities before the Board’ (law10/2003, Art15). With the Minister of telecommunications as the head of the board of directors, the NTRA can also be considered as accountable to the Ministry. In case of conflicts, ‘the Executive President shall represent NTRA before the judicial system and in its affairs with third parties’ (law10/2003, Art17).

Focusing on the regulated companies, different forms and levels of accountability can also be mentioned. Firstly, the CEOs of these companies are responsible for their companies’ respective performance before their board of directors. They are also held accountable to their stakeholders. At the same time, regulated companies are accountable for their actions and practices before the NTRA. In this regard the latter have the right to object to any decision made by any regulated company if this decision contradicts the sector regulations, the license provisions, or if this decision carries any potential harm to any other party. The EDG problem between the NTRA and MobiNile is regarded as an example *par excellence* in this regard.

Moving now to the transparency aspect of the decision-making process it can be noticed that the regulatory staff working in the NTRA have emphasised that in all its practices and decisions the authority does its best to be as transparent as possible. The diagram in figure 2 presented by a senior advisory staff member in the NTRA summarises the way in which decisions are made by the authority and reflects how transparent this process is.

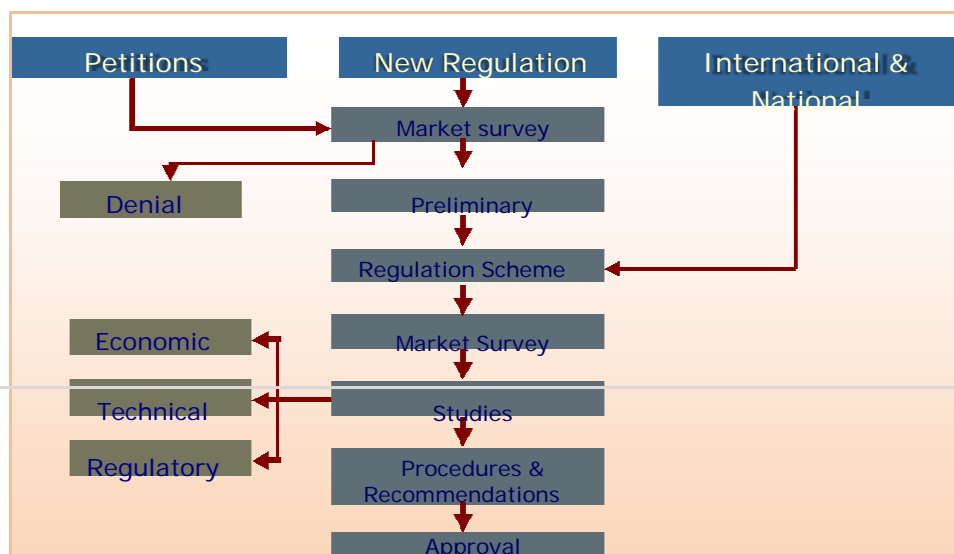


Figure.2: The Decision-making Process
 Source: Guinena (2005)

As the figure indicates, the decision-making process starts with market surveys in which the regulated industry is consulted on the issue at stake. The NTRA then either reconsiders its decision, if the regulated companies have shown opposition, or accepts it in principle for further research and studies. Based on another round of market surveys, different economic, technical and regulatory studies are conducted which are normally followed by identifying the substantive aspect of the decisions in terms of the procedures and the recommendations. Once the decision passes the approval stage, it is subject to monitoring and a follow-up process that ensure the compliance of the regulated companies.

Despite such a declared decision-making mechanism, some voices from the regulated industry have asked for more transparency.

‘Despite the success that the internet sector has achieved over the past few years, the NTRA needs to be more transparent. A strategic plan that develops and defines the contours of the sector over a long time of period should be in place. Such a plan would help the regulated industry preparing itself for future changes and reducing the uncertainty with regard to different issues. The internet is a fast changing market in which the competitive advantage for a specific player depends on how fast its responses to the changes are. As such, and in the absence of a transparent and clear vision to the future of the sector, rumours can control the behaviour of the regulated industry. For example, rumours about using WIMAX technologies have led many companies to sign contracts with other parties and to import wireless equipments which cost them a lot of money and resources. And finally the NTRA decided to postpone the issue for future consideration’ (Int.21).

Within the regulated companies it can be generally concluded that most have a well established corporate governance system have a clear and transparent decision-making mechanism in place. They also publish regular performance reports to inform their stakeholder about their

performance, decisions, and future directions. A quick visit to the websites of MobiNil, Vodafone Egypt, or TE can clarify this point.

Moving to the second criterion, the transparency of rules to be followed, it can be mentioned that the telecommunications law 10/2003 has identified in its general provisions, article two, four rules as guidelines for providing telecommunications services in Egypt. These rules are: publicity of information, protection of free competition, provision of Universal Service, and protection of users' rights. Each rule has been dealt with in detail in the body of the law. In addition to this, the NTRA has published on its website the rules related to different aspects of the regulatory process such as licensing, competition rules, and telecoms users' rights. Most of the interviewees from the regulated companies agreed that there are transparent and clear rules which regulate the conduct of the actors involved in the process of service provision.

With regard to the accountability and transparency of activities of regulated actors, 'All entities and companies working in the telecommunications field shall provide the NTRA with whatever requested of reports, statistics or information related to its activities except for matters related to National Security' (Law10/2003, Art.19). Based on this broad discretion, all regulated companies are required to report on regular bases to the NTRA. 'We receive regular reports from the regulated companies regarding their performance, technical, and financial situation. Some of this information is available online but some other information cannot be disseminated because it may affect companies' competitive advantages or strategic positions in the market.' (Int.2). Added to this, some companies publish their performance and financial reports on their websites on a regular basis.

Regarding the final criterion of measuring accountability and transparency of regulatory systems which is related to the accountability and transparency of feedback processes, the majority of actors involved in the two studied regulatory networks have confirmed the existence of a feedback mechanism and many of them have referred in particular to this mechanism as a part of the consultation processes conducted by the NTRA. The consultation process on a draft regulatory framework for broadband wireless access networks is a good example of this process.

In August 2006, the NTRA initiated a consultation process for regulating broadband wireless access, divided into three phases. In phase one, the authority held a hearing session that included all concerned stakeholders in order to exchange ideas and visions with respect to this new technology and how it can be optimally used to improve telecommunications services.

Actors in land line and mobile telephony together with ISPs were invited to have their say regarding the regulation of the new services. To this end, the NTRA published on its website a list of questions to elicit telecom actors' opinions. The feedback was published on its website and formed the base for a consultation paper published by the NTRA which was supposed to be followed by another hearing session to finalise the draft of the regulatory framework.

The transparency of the whole process and particularly the feedback stage has been acknowledged and appreciated by most of the participating actors, although some have highlighted the issue that the response of the NTRA to their feedback is not fast enough. 'Sometimes it takes months after hearing sessions of consultation processes for the NTRA to respond. Such a long period leaves the floor open to rumours which are not in the interest of the industry' (Int.25)

Following on from the above it can be concluded that the regulatory system in the Egyptian telecommunications system reflects an acceptable level of transparency and accountability. This is not to say that the system is fully transparent and totally accountable: the responses of the interviewed network actors suggest that a lot still needs to be done on this front.

5. Conclusion

The main focus of this paper has been the institutional context within which actors' interaction and relations are established. The notion of institutional design was examined first as an indirect mode of governance in network settings. The different forms of regulatory interventions and their consequences for the two studied networks are explained. The importance of some institutional factors such as rules, trust, independence, accountability, and transparency have been highlighted as building blocks in any institutional design process. Such factors have been measured in the context of the two investigated regulatory networks based on the analysis of the interview materials and some other written documents. With the structural, relational and institutional bases of the regulatory networks in both the internet and the mobile telephony arenas so identified and examined, it could be safe to conclude that a network approach for analysing regulations and regulatory processes leads to a more serious treatment of regulatory policy networks than just a metaphor. In other words, a network approach for analysing regulation policies helps in capturing an accurate picture of the between state and non-state actors. This conclusion was quite evident in the investigation of the telecoms sector in Egypt. In this respect, the paper suggests that network analysis captures the change from an integrated institutional system of regulation of provision to

one of interaction between stakeholders from across the public and private sectors and non-linearity

in regulatory developments. This is essential for understanding the transformation of regulatory institutions in Egypt, which has not followed a process of top-down change but rather has responded to multiple sources of pressure.

REFERENCES

- Ayres, I. and Braithwaite, J. (1992) *Responsive Regulation: Transcending the Deregulation Debate* (Oxford: Oxford University Press).
- Bueren, E., Klijn E. and Koppenjan J. (2003) 'Dealing With Wicked Problems in Networks: Analysing An Environmental Debate From A Network Perspective', *Journal of Public Administration Research and Theory*, 13, 193-212.
- Gerrits, L. and Klijn, E. (2007) 'Review Complexity and the Experience of Managing Public Sector Organisations', *Public Management Review*, 9(7), 441-445.
- Hertting, N. (2004) 'Games Real 'Networkers' Play: Rationality And Frustration In Network Governance and Swedish Urban Renewal', Paper presented in session on Conceptual and Analytical Perspectives on Governance, Conference on Democratic Network Governance, Copenhagen, October, 21-22.
- Klijn, E. and Koppenjan, J. (2004) 'Institutional Design in Networks: Elaborating and Analysing Strategies for Institutional Design', *Budapest Management Review*, 7(8), 84-98.
- Ostrom, E. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action* (New York: Cambridge University Press).
- Rhodes, R. and D. Marsh (1992) 'New Directions in the Study of Policy Networks', *European Journal of Political Research*, 21(2), 181-205.
- Sauvée, L. and Coulibaly, M. (2008) 'The Interorganisational Dynamics of Brand Alliances', paper presented at the 24th IMP Conference, Uppsala, Sweden.

Interviews

1. Interview with the Executive President (NTRA).
2. Interview with the vice President (NTRA).
3. Interview with a consultant for research and development (NTAR).
4. Interview with a member of Consumer rights protection committee (NTRA).
5. Interview with an Advisor Internet Technical Affairs (NTRA).
6. Interview with a Senior Telecommunication Planning Engineer (NTRA).
7. Interview with an Information System Engineer (NTRA).
8. Interview with a Senior Telecommunication Planning Engineer (NTRA).
9. Interview with a Senior Advisor to the Minister of Telecommunication on Policy Issues (MCIT).
10. Interview with a Legal Advisor (MCIT).
11. Interview with the Executive Director of the Information and Communication Technology Project (MCIT).
12. Interview with the Head of e-Health programs at the Egyptian Ministry of Communications and Information Technology (MCIT).
13. Interview with the Deputy Manager, Information Technology Institute (MCIT).
14. Interview with the IT Sector Supervisor (Academy of Scientific Research and Technology).
15. Interview with the Manager of User Services Department (Egyptian National Scientific & Technical Information Network).
16. Interview with the Vice Chairman And Managing Director (TEData).
17. Interview with the Product Marketing and Gov Affairs Director (TEData).
18. Interview with the Governmental Relations Manager (LINKdotNET).
19. Interview with the Governmental Relations Manager (Menanet).
20. Interview with the Governmental Relations Manager (Noor).
21. Interview with the C.E.O. Egyptian company for networks (EgyNet).
22. Interview with the C.E.O and Vice Chairman Nile on line (NOL).
23. Interview with the Chief technical officer Nile on line (NOL).
24. Interview with the Governmental Relations Manager (Yalla Misr).
25. Interview with the Strategic Planning Manager (Yalla Misr).
26. Interview with the General Manger For Governmental Relations And Regulatory Affairs Telecom Egypt (TE).
27. Interview with the Strategic planning manager Nile on Line (NOL).
28. Interview with the Regulatory and Government Affairs Senior Manager (Vodafone Egypt).
29. Interview with a Regulatory Relations Expert (MobiNil).
30. Interview with the Regulatory Affairs Manager (Etisalat Egypt).
31. Interview with ACTO Company.
32. Interview with the Country Manager, Egypt SAP Arabia.
33. Interview with Blue zone company USA
34. Interview with the Senior Manager Huawei Technology Co., LTD Egypt Representative Office.
35. Interview with the Technical Department Director National Telecom Cards Company (NTCC).

36. Interview with the Head of ITU Arab, ITU Regional Office.
37. Interview with a Telecommunications Expert, ITU Arab, ITU Regional Office.
38. Interview with a Consultant to the Egyptian Foundation in Technological Education and Development, (Nile University).
39. Interview with the IT Manager (Abu Ghazaleh Intellectual Property).
40. Interview with the Deputy Chairman British Electronics and Computer (BEC Online) Port Said.
41. Interview with the Managing director of Arab Business Forum for Information and Communication Technology.
42. Interview with the Director of ArabDev organisation.
43. Interview with the Director of Egyptian initiative for Personal Rights.
44. Interview with the Director of the Egyptian Information Telecommunications Electronics and Software Alliance.