

***DIFFERENT TYPES OF REGULATION FOR DIFFERENT TYPES OF
TRANSACTIONS;
A framework of analysis based on Oliver Williamson and John R. Commons.***

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1. Introduction

This paper is part of a research project at the faculty Technology, Policy and Management of Delft University of Technology. The project is about the coherence between technology and institutions in infrastructures. Part of the project is about the analysis of effective and efficient governance structures to coordinate transactions in infrastructures. More specifically: to coordinate ‘core transactions’, i.e. transactions that are critical to the performance of the infrastructure in a technical, economic and, or social way.

Different modes of governance to coordinate core transactions can be distinguished. Taking a New Institutional Economics (NIE) point of view the alternative modes range from spot market contracting, contacts with complicated safeguards via hybrids such as arbitrage committees to private hierarchies. This is so-called “private ordering”.

In the case of infrastructures government has a special interest and responsibility concerning the performance; the ‘public interest’ allows for liberalisation, deregulation and privatisation, but government remains responsible for the publicly defined objectives. NIE and more specifically the Transaction Cost Economics (TCE) of Oliver Williamson (OEW), identifies two modes of governance that government can use to guide and direct behaviour of private actors in the direction of the ‘public interest’: regulation and the so-called public bureau. We call that the ‘public ordering’.

In section 2 we discuss the NIE/TCE approach and distinguish between different modes of governance to be aligned with different types of transactions.

In section 3 we apply NIE to the issue of governance of core transactions.

In section 4 we introduce a broader perspective based on the work of the " so-called Old, or Original Institutionalist John R. Commons (JRC). Then the issue of “Different types of regulation for different types of transactions” is analysed in a broader, more holistic way than the NIE/TCE perspective. In the world of Commons regulation is about ‘working rules’ of ‘a going concern’, that serves the ‘public purpose’. There is then more than efficiency at stake: of equal importance is the dimension of (political) power.

In section 5 we make some concluding remarks about the complementary building blocks the worlds of OEW and JRC might offer to the framework to analyse “different types of regulation for different types of transactions”.

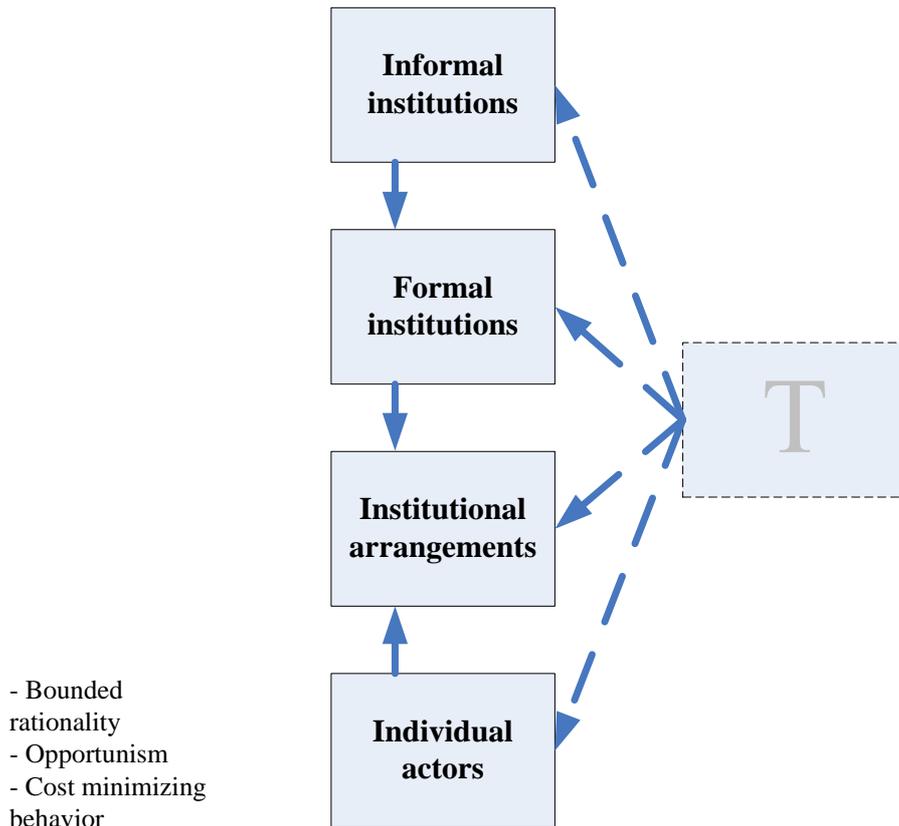
2. The world of Oliver Williamson New Institutional Economics

Institutional economics has its roots in the USA: Thorstein Veblen, John R. Commons and Clayrence Ayres are considered the founding fathers, followed among others by Wesley Mitchell, Gunnar Myrdal, and John K. Galbraith. This school of thought is nowadays called ‘Old’, or ‘Original Institutional Economics’ (OIE).

Based on Ronald Coase (1937), Oliver Williamson introduced in 1975 the concept of New Institutional Economics: complementary to neoclassical economics Williamson addressed in his “Markets and Hierarchies” the question why firms exist and why specific transactions are coordinated inside firms and others through market contracts. The unit of analysis of issues of governance is the transaction to be understood as “the transfer of ‘rights to use goods and services across a technologically separable interface. Here Williamson explicitly refers to Commons as the economist who also took the transaction as the unit of analysis.

“Firms and markets were called ‘institutions’ by Williamson. To distinguish his ‘institutional economics’ from the original one he added ‘new’, signaling to the outside world that NIE is not a rejection of neoclassical economics (as the OIE did), but that it is complementary to mainstream economics. NIE addresses another issue than neoclassical economics, but stays close to the rigorous analytical method of economics.

Figure 1; A four layer model of institutions



In Figure 1 three categories of institutions are depicted: at level 1 the informal, more implicit institutions of values, norms and attitudes: the level of culture. Also the level of ‘technology’ is presented in the picture, but as a dotted box indicating that in neoclassical as well as NIE technology is considered an exogenous factor not further analysed¹. At level 2 we locate the formal, more explicit institutions of laws (e.g. property rights) and regulations, as well as the public and political institutions like bureaucracies, political parties, ministries and parliament. At level 3 the institutional arrangements, also called ‘modes of governance’, are located: contracts and private organisations, like firms, that coordinate economic transactions. At level 4 we position the individuals that are members of families, private and public organisations, and larger national and international communities. Figure 1 is based on the three and four layer models of Williamson (1996 and 1998).

We have a closer look at the different layers.

The actors

The actors are characterised by rationality (full or bounded), the possibility to behave opportunistically, and the rule of behaviour.

¹ Technology appears in TCE through the level of asset specificity. It is recognised that the interrelation of technology with other elements of the model should be made explicit (Williamson 2000)

Rationality

The concept of rationality concerns the attribute of the economic actor with respect to her capacities to take efficient decisions. That is to say decisions that minimise costs, or maximise profits and utilities. In mainstream theory the economic actor receives all relevant information for taking such decisions through the market prices and she is able to calculate the optimal combinations *ex ante*. When the optimum is calculated and nobody can improve his or her position anymore by renegotiating another combination, then it is said that actors have reached equilibrium. Important to stress here is the implication of full rationality with respect to contracting between parties, contracts are complete, i.e. all uncertainties are eliminated both the environmental and the market uncertainties.

In institutional economics, theorists use the concept of so-called bounded rationality. That is to say: actors have limited capacity to absorb relevant information and to make *ex ante* calculations. It is important to stress here that bounded rationality implies that contracting will almost always be incomplete. That is to say there will be open ends parties have not dealt with. When contracts are incomplete actors have the possibility to use the unspecified area for their own interest. In the case that one party depends on the other, the more powerful one can use, or abuse the incompleteness of the contract to renegotiate at a later stage. In this respect the 'economics of property rights' (Grossman, Hart and Moore) claims that the allocation of property rights is of crucial concern here (see Williamson 2000). In other words: after the contract is signed a period of 'post contractual opportunism' begins in which parties can make use of, or abuse their position and grasp so-called quasi-rents. For that to happen the other characteristic of the actors in the model becomes relevant: opportunism

Opportunism

It is assumed that the possibility exists actors will behave opportunistically: they might provide wrong information during the transaction process about for instance their capabilities, or the quality of the good or service to be delivered. It might even be that actors cheat and simply have no intention at all to live up to the conditions agreed upon. The fact that opportunism is an attribute of the actors does not imply that it is considered realistic to assume that in our type of economies all actors constantly try to cheat. On the contrary: most of the time actors can and do trust each other. The point is that transactions between actors can be such that one of the parties has an opportunity to behave opportunistically and that the other party has to incur costs to find out what actually happens, or to make costs to safeguard against opportunism. The simple fact that costly arrangements should be made gives rise to the question which governance structure would be most efficient to provide the safeguard.

Rule of behaviour

The purpose of theories of new institutional economics is to understand why modes of governance exist. How can we explain the existence of different types of contracts, of hierarchical organizations like firms, of multi-divisional firms and multinational ones, of regulation and of state owned enterprises ('public bureaus')? The purpose of institutional theories is to provide a framework to explain these structures and preferably also to predict them. Now for theory to be able to predict focus is needed: what is the nature of the actor and what is her rule of behaviour? In institutional economics the line of reasoning of mainstream economics is maintained: the actors

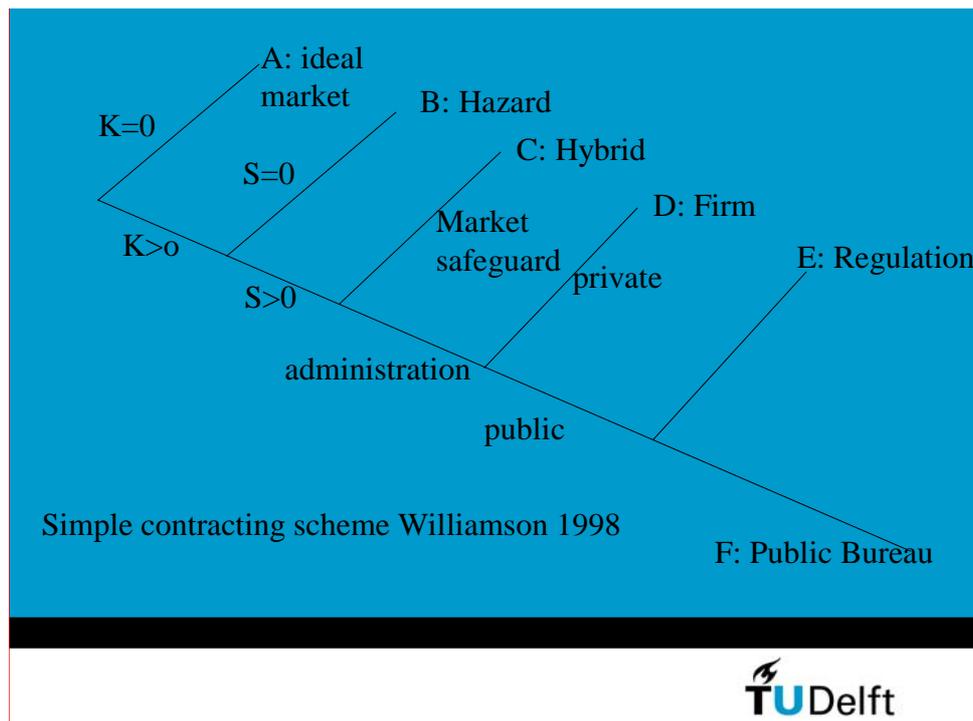
minimize or maximize. If we then put the actor in a theoretically closed environment we are able to predict precisely the outcome. In other words: to align a different type of transactions with a different type of governance.

Governance structures

In this section we explore the governance structures at level 3 of figure 1. What are the modes of governance actors can choose from when coordinating transactions efficiently? Governance structures can be defined as "...the institutional matrix within which transactions are negotiated, coordinated and executed." We can draw a continuum of governance structures from the contracts on spot markets to the vertically integrated hierarchies and further to the area of public ordering (regulation and public bureau). See figure 2.

It would be a mistake to think of governance structures as only private arrangements: government plays a role as well and sometimes even a dominating role. This can be the case in sectors of the economy where competition needs careful regulation in order to prevent firms to make abuse of a dominant position, or to prevent unwarranted collusion between firms. In sectors such as railways, energy, telecommunication, public transport, health services, and the like, government creates governance structures to assure a specific performance of the market. For instance the provision of energy at reasonable prices to all citizens is an objective of public interest that needs specific governance. The continuum in figure 2 shows the type of governance structure related to the degree of asset specificity (k). The asset specificity concerns the type of investments actors make in order to have a good or service transacted. When the investments are very specific then the investment is worthless when the transaction is ended. The degree of asset specificity has implications for the possibility of opportunistic behaviour and therefore for the need of safeguards. In figure 2 the asset specificity increases from left to right. When no asset specificity exists the transaction can be efficiently coordinated with a 'contract on the ideal market' (potential opportunism is absent because of the high level of competition and low level of asset specificity). When asset specificity increases safeguards are built into the contract, e.g. through long term contracting, and so-called 'hybrids': governance structures in which contracts are combined with organisational structures that limit the autonomy of the actors. In a hybrid actors, who are in a horizontal relation towards each other, are constraint by vertical organizational relations. Their autonomy is limited by the vertical constraints materialized in actions of monitoring, arbitrage and sanctioning. When asset specificity increases further the hierarchy (vertical integrated firm) will be the most efficient from a transaction cost point of view. Private ordering is complemented by public ordering (regulation and public bureau) when government is responsible for a specific performance of the sector and the market does not automatically produces the desired outcome. Competition authorities and sector specific regulators are typical examples.

Figure 2 A simple contracting schema



Most of the theories of institutional economics aim at an explanation and prediction of both the private and public governance structures. The decisions about these structures are not taken in a vacuum, but in a specific context of values, norms and of laws and regulations: the institutional environment located at level 1 and 2 of figure 1.

1. Modes of governance for core transactions

In NIE the allocation and enforcement mechanisms of property rights at layer 2 of figure 1 are crucial. Only when property rights are well defined and secure, actors at layer 4 will have the right incentives and select the efficient modes of governance. What is the most appropriate property right regime depends on the type and setting of transactions. In general private property will create the right incentive for owners to make the required investments to improve the resources (Demsetz, 1976) However, when the costs of exclusion are very high private property rights are difficult to assign to individuals. In case of natural resources (common pool resources) it has been proposed (Ostrom, 1990) to create common ownership together with 'self crafted rules by the users' on how to use the resources.

Also co-management regimes exist where both the state and local communities have rights. In such cases it seems useful to make a distinction between property rights and decision rights: the state can for instance own an electricity network, but the decisions about the maintenance, investments and operation are allocated to other actors. NIE explains the shift of the overall property rights regime from state management to co-management (decision rights at lower level) as a reduction of transaction costs. The central state has traditionally experience in dealing with market failures like externalities, public goods and scale (natural monopoly). When the state creates a state owned enterprise and a ministry directs that enterprise, then the mode of governance has 'low powered market incentives' and high transaction costs associated with central monitoring and enforcement. The information asymmetry between the

local and central level result in ‘government failure’. When a reshuffle of property and decision rights can lead to informal sanction mechanisms at decentralised level, to repeated contacts between the “principal and the agent” and to access to local decentralised information, then lower transaction costs result. So redistribution of property and decision rights can imply better use of the abilities at lower levels and lower transaction costs.

In table 1² property and decision rights are specified for different modes of governance ranging from “public governance” to market governance.

<i>Mode of governance</i>	<i>Property Rights (Ownership of assets)</i>	<i>Decision rights (allocation of usus, usus fructus & abusus)</i>
Public governance		
Direct management	public	Governmental department and/or public authorities
Agencies		Autonomous Public authority
Public corporation		Corporatized public entity. DR in the hands of a relatively independent board.
Cooperatives	One person, one vote	Elected board
Public private partnerships		
Service	Public	Delegated limited DR (for some actions only) to private company: service agreements
Management	Public	Private Operation & Maintenance, but public capital investments
Leasing	Public with respect to core transactions; private investments on peripheral transactions	O&M private Profits: private
Build, Operate, Transfer	Delegated private ownership for the contract duration	Operation: private Design: government
Concession	Delegated private ownership for the contract duration	‘Framed’ private DR with respect to core transactions, but large autonomy of private operator concerning the operation

² This table is based on discussions with Claude Menard and Rolf Kunneke in the period that Claude Menard was visiting professor at Delft University of Technology (spring 2006)

Market		
Regulated market	Private	Competition in the market, subject to sector specific regulation
Competitive market	Private	Competition in the market, subject to general competition policy

Public Governance

The ownership of the assets is public: the state is the owner. The situation of the 'public bureau' would be the one in which the state owns and manages the property. The ministry and the public corporation form one unit. However, the state has also the possibility to allocate via contracts (part of) the decisions rights to a public authority or corporation. Then decision rights are transferred for instance to the board of the corporatized public entity.

In the case of public governance the state can effectively direct the behaviour of public actors towards the goals of the public interest. Core transactions can be coordinated in such a way that the realisation of the objectives is more or less guaranteed. Such governance incurs high transaction costs in term of organisation costs and decrease of 'market incentives'.

Cooperatives

Cooperatives are governance structures where decision making is based on the principle of 'one member one vote'. It is well possible to analyse the cooperative from a TCE point of view (Menard,), but in this paper it is less relevant because cooperatives do not play an important role in critical infrastructures.

Public Private Partnerships (PPPs)

The category of PPPs indicates a role for both the public and the private actors. The different types of PPP concern different combinations of ownership and decision rights. An important reason to form a partnership with private actors is access to the private capital. In return for taking risks private actors claim rights: rights to supply the service, to operate, and the right to design, build and maintain the asset. On the other hand government wants to maintain property and decision rights to the extent that she can guarantee an effective coordination of the core transactions. So there are PPPs in which the ownership is public and the 'peripheral' parts are privately owned. There are PPPs in which the building and maintenance is private, but government is responsible for the design. There are PPPs where the rights are sold to private actors in concession for a specific period, after which the rights are transferred back into public hands again. (Ricketts, 1990).

Sector specific market regulation

The category in which the ownership is private, but government wants to guide the private actors into the specific direction consistent with the public interest, is regulation. Sector specific regulators are then authorised by law to intervene in the

structure of the market or directly into the behaviour of the private actors. Regulation of behaviour in the natural monopoly segments can have the form price, network access and quality regulation, whereas for the 'competitive segments' the rate of return and cost-of service regulation is more and more replaced by incentive regulation, like price cap regulation.

NE provides insights why regulation of private actors can incur high transaction costs: the higher the asset specificities involved, the higher the uncertainties and the larger the information asymmetries, the larger the opportunities for private actors to behave opportunistically. Then the rules of regulation, monitoring and sanction procedures become more strict and detailed: transaction costs rise and forms of public ownership become more efficient.

General competition regulation

In this case private actors own and decide subject to the general rules of competition: no collusion and abuse of dominant position.

To sum up: the general issue of modes of governance and types of transactions, or more specifically: the types of regulation and types of transactions, is addressed in NIE / TCE as an efficiency issue. The model works out an individualistic methodology accepting the institutional environment as a shift parameter and ignoring the role of technology. This limitation is recognised (Williamson, 2000) and recommendations are formulated to include the 'mind' and the 'technology' into the analytical framework. It might be that Williamson should again call upon Commons.

4. The world of John R Commons

In short the work of John R. Commons (JRC) centres around the question how public purposes can best be realised through the collective control of actions of individuals. The subject matter of economics is the understanding of the rules that create order, reduce uncertainty and make therefore transactions between individuals possible. The tasks of an economist is to investigate the causalities between the institutions and the individual actions and how these result in a specific performance of economic systems.

Individuals

Commons understood human beings to be inherently self-interested: they aim at fulfilling three 'fundamental wishes' of equality, liberty and security. The first refers to the wish to be treated equally under similar circumstances, the second to the wish to be free of arbitrary decisions of superiors and the wish of security refers to the expectation that disputes will be decided upon as was the case in the past. If these fundamental wishes are unfulfilled individuals will invest in changing the 'rules of the game'.

The actions of individuals are guided by the institutions: the so-called 'working rules' and the customs. Institutions do leave discretion to the individuals: institutions do not determine the individual actions, but 'frame' them in such a way that some room to

manoeuvre is left to the individuals. In that space individuals will try to influence other actors and take opportunities to change the rules according their own benefits. Individuals can impose their will upon others by means of persuasion (based on personality), coercion (economic power to withhold and duress (the physical power of violence)).

Rational man as we know him from mainstream economics is replaced by 'institutionalised man' with satisficing behaviour as we know from Herbert Simon.

Only in very exceptional cases individuals are powerful enough to change the rules by themselves; normally individuals have to join forces, mobilise resources together and organise pressure. Almost always a joint force of more individuals is required. Such collective action can lead to broader participation of more classes of people in determining the rules, thereby constraining the actions of other groups in society. Collective action can lead to the liberalisation of groups in society and to the constraining of the power of other groups in the society. In that sense institutions as 'collective action in control of individual action' are not 'neutrally efficient'.

The first environment individuals operate in is the so-called 'going concern'

Going concerns

Individuals join social structures in order to survive in a physical and social sense. A going concern is a theoretical concept encompassing every group within which individuals interact and coordinate their actions towards common future ends. Commons purposefully avoided the concept of "mechanism" and "organism" emphasising that the going concern as a concerted action to attain goals is 'volitional', is an 'artificial arrangement'. Going concerns can be located at different layers of an economic system: firms, regions, sectors, nation states and supra-national level.

Working rules

In short, the working rules of going concerns – or "institutions"- must be understood to represent "collective action in restraint, liberalisation and expansion of individual action" (Commons 1934a, p. 73). Working rules allocate resources, benefits and burdens in the process of producing wealth. Assessing existing working rules, or the proposal to change them should not be in terms of "freedom versus coercion", but always be analysed as a matter of whose will is restrained and whose will is liberated. Working rules are no frictions. Working rules of going concerns are developed by the participants and decided upon by the 'authoritative'³ to control individual action and thereby to facilitate the realisation of a common purpose. The working rules are

³ In every going concern the sovereignty has the authority to define the working rules and determine the process of changing them. The working rules define who the sovereignty is, what the powers are and how the rules can be changed. The state is the sovereign which decides upon the formal laws and regulations. The state is the final authoritative power.

embedded in the legal framework and subject to changing ethical norms. Individual ethics are at the same time shaped by the working rules.

To Commons law is codified custom. The working rules, custom and their codification in law, are not mechanistic constructions, but involve discretion. Broad grey areas determined by individual discretion reveal the ethical component. The rules are not universal neither static, but subject to evaluation and consideration, which makes them dynamic and specific.

Market forces are not prior to the working rules. Working rules are perceived to be the 'cause' of economic behaviour and, hence, of economic values. This is "institutional causation". Market forces (i.e. the consequences of authorised self-seeking behaviour) and economic laws (regularities in the domain of that behaviour) are relevant in the sense that institutional causation works through the behaviour of individuals and through these laws.

Next to "institutional causation" Commons distinguishes "individual causation" being the individual will. The economic process is a circular causation in which the individual will is at once consequence and cause of working rules.

Transaction

According to Commons transactions are about the exchange of property rights and should be understood as complex interactions of five principles: scarcity, efficiency, working rules and custom, sovereignty and futurity (anticipation). Three different types of transactions are distinguished: bargaining (horizontal relation between owners of property rights), managerial (vertical relation in which the managers directs) and rationing (vertical relation in government directs). Economic systems like capitalism are mixtures of the three types of transactions. Each mixture has its own combination of the five principles exhibiting its own "legal, economic and ethical correlation". This connects to the complementarity of institutions and the 'logic' of economic systems.

A broad perspective

To sum up, it was Commons' view that in addition to the questions how, what, and how much, the social scientist also asks why. Before one can explain why a certain transaction occurs, one must grasp the manner in which that transaction reveals the operation of "institutional causation" and "individual causation" in combination. In short, Commons perspective is both "deterministic" and "volitional". This connects to the concept of "methodological interactionism". The economy should be understood as the intertwined complex of working rules and customary practices structuring the wealth creating and appropriating activities of the citizens of a nation. The economy is not a "natural process", a self equilibrating price mechanisms embedded in a specific institutional context. No, markets, invisible hands and competition are rather 'artificial arrangements' consisting of an incalculable number of interrelated working rules and customary practices that are volitionally selected and endorsed by authoritative agencies to restrain and direct individuals in accordance with the common good as that was defined at that time (Ramstad, ...).

Commons has his whole life been involved in regulation that he considered the way to “(.....) realise the good capitalism”.

5. Concluding remarks

1. From a NIE perspective modes of governance and regulation are analysed as efficient outcomes of cost minimising actors that operate in specific and well defined environments. This results in valuable insights on for instance the consequences in terms of transactions costs of different structures like PPPs and types of regulation.
2. Adding a broader perspective of JRC, in which a holistic and interactionistic approach is taken, makes the framework of analysis multi-disciplinary and more or less similar to the later work of Douglass North. Shared mental maps, learning, distribution of power via institutions, and the like become part of the analysis. Regulation are working rules and allocate political rights; the ‘sovereign’ allocates regulatory rights to the regulator to intervene and frame the way other actors can use their property and decision rights.
3. For regulation to be effective and efficient it is suggested to not only apply the efficiency perspective (align governance/regulation with types of transactions), but because the change in working rules (implicitly) implies a re-allocation of rights there should be a careful assessment of the implications for all actors (who are the winners, who are the losers?). Moreover, what will be the reactions of the actors (taking into account their incentive schemes and power base), what options are open to the different actors (opportunism, information distortion?), what are the possibilities to capture policy by the actors?
4. JRC was a strong advocate of participatory democracy: working rules should not be designed in the top of the hierarchy and then implemented top-down, but should be the result of deliberations in sector committees in which all actors participate.
5. Provisions for the regulator to learn should be incorporated in the regulatory process; the creation and changing of working rules is a process of ‘muddling through’
6. The world of JRC is typically a world of process analysis: how and why are working rules changed and which working rules would lead to the desired outcomes? What are the intervening variables and how are these interrelated? Isolating the economics and the efficiency form the social, cultural, technology and power dimensions, is then less appropriate.
7. The role of technology in the sense of the coherence between technological design and institutional design with the impact on technological, economic and social performances, calls for a process approach in which the ‘mind’ and the ‘technology’ are explicitly taken on board
8. To sum up: the framework to design effective and efficient regulation should be based on:
 - a. Insights from neoclassical economics indicating economies of scale and scope
 - b. Insights from Industrial organization about opportunistic behaviour (vertical integration is market power)

- c. Insights from NIE/TCE (vertical integration is an efficient mode of governance)
- d. Insights from technology control theory (safeguard the technical core transactions)
- e. Insights from political science (design of the process of decision making)

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