



European
University
Institute

ROBERT
SCHUMAN
CENTRE FOR
ADVANCED
STUDIES

Florence
School
of
Regulation

Governance in Network Industries: lessons learnt from “New Institutional Economics”

Jean-Michel Glachant

Director Florence School of Regulation
European University Institute, Florence, Italy

NIE & Governance of Network Industries

- 1.** NIE is anything but new: what is it about?
- 2.** Do Network Industries exist for NIE?
- 3.** If yes: and so what??

(1) Today NIE is old

What was it about?

4 Institutional Nobel Laureates in order of appearance

- R. Coase (*The Firm, the Market and the Law*)

✧ The firm has long been forgotten as basic institution of capitalism; it is a kind of organization (cf. A. Marshall; cf. visible hand vs invisible hand) and not a production function; it is understudied and largely unknown (Coase 2012).

✧ The law has long been forgotten as basic institution of capitalism; it is a kind of institution (set of common rules substituting to purely decentralized arrangements through coasian bargaining – see Cooter @ Berkeley Law School)

✧ Parallel to these mistakes, the market itself forgotten as institution able to remedy to many institutional deficiencies (incl. so called “externalities”) ***IF*** properly designed (“market design”): cf. use of Law to design markets for radio frequencies; rail or airport slots; pollution permits. Market is an “institutional structure” of production.

NIE's old

What's about? (2)

- D. North (***Institutional Endowment***)

⌘ Many institutions are long living and we inherit them from the past as they are.

⌘ We might aim at changing them. But the rules of the game and the set of incentives for the play of changing them are also coming from the existing institutional endowment (cf. Alexis de Tocqueville or “Path Dependency”)

⌘ Understanding what the existing institutions permit or not as likely “natural” outcome or as “path of feasible changes” requires a realistic approach. The positive analysis should dominate vis-à-vis the normative approach (as Institutions matter History also matters)

⌘ Existing institutions are economical as well as legal, political or social (incl. beliefs) or cognitive (shaped by knowledge and brain processing capabilities)

⌘ Existing institutions are first order of magnitude in explaining the world we are in and what we are able to do with

NIE's old

What's about? (3)

- O. Williamson (*Markets and Hierarchies > Economic Institutions of Capitalism >> Mechanisms of Governance*)

α If we concentrate on the economic institutions of capitalism they are only two as Coase said in 1937: markets and hierarchies (Williamson 1975).

α Oups! Sorry there is a third institution: “relational contracting” (Williamson 1985). What people do when transforming the “coasian process of decentralized negotiation” into a durable frame of bilateral (multilateral) cooperative agreement. As significant credibility can be added to voluntarily designed agreements by “using hostages to support trade”.

α Oups Oups!! Sorry: it is even more complicated (Williamson 1996) because (1) the *legal* environment (yes yes the law) or the *social* (think Chinese large families) might change the governance properties of certain economic institutions; and (2) governance might articulate a whole bunch of connected transactions (as Aoki does: *work flow* at workshop level; *managers* at corporate level; *banks* as close stakeholders; *suppliers* as close stakeholders)

NIE's old

What's about? (4)

O. Olstrom (*forget Markets and Hierarchies and go beyond*)

α We do not have to concentrate on the so-called “economic institutions of capitalism” only because we address economic issues - we only have to embrace the more relevant institutions in the framing of the issues that we are studying.

α The most relevant institutions might well be the social (at large: as community of practice; of repeated interaction; of local information gathering and sharing; of day-to-day crossing decisions making; and of compatible beliefs).

α This might also recoup “heterodox” modern microeconomics as Akerlof (gift / counter-gift in a given community of practice) or Avner Greif (repeated game in a social milieu with shared beliefs)

(2) OK NIE is then this or that...

But do network industries exist for NIE?

Mamma mia! That's a challenge!

But let's argue "Yes or rather Yes" in a new order of appearance

- R. Coase (*The Firm, the Market and the Law*)

⌘ Coase could have been dying of being bored with "network industries" or not. See (Coase 2012): he spent his very last years on earth to study "*How China became capitalist*". A quite particular and heterodox research work for a Nobel Laureate being already 100 years old...

⌘ The very basics of Stephen Littlechild "network industries re-arrangements" sound very coasian. 1/ First get the "property rights" right (with network unbundling requirements); 2/ Then get other "property rights" right (with third party access rules); 3/ Then get the incentives right on both sides (the regulated with RPI-X and the competitive with opening market entry) and it should work. As simple as that.

⌘ However Coase didn't like "systems" or "handbooks": just do it. No more.

OK NIE...

But do network industries exist for NIE? (2)

- O. Williamson (*of course* NIE does care: *see my books and articles*)

⌘ Sorry guys... you should even not ask me: article 1976; book 1985

⌘ My 76 article became full chapter in 1985. H. Demsetz is wrong when advocating (in 1968) that network monopolies will disappear in practice if one auctions off the right to be a monopoly (the franchise). That “competition for the market” will not work when you cannot define ex ante a credible set of contractible terms and conditions keeping “aligned” the transaction as long as the long life assets of the network will live.

⌘ Asset specificity of networks “kills” the economic effects of ex ante competition as soon as the contract is signed. An “irreversible transformation” annihilates the ex ante competition governance capability.

⌘ Hence networks need regulated contracts with a third party (the regulator) ex post and not only a competitive tendering ex ante. Yes “Asset on wheels” like school bus transportation can be auctioned off through competitive tendering but electricity grid transport cannot (P. Joskow 1985).

OK NIE...

But do network industries exist for NIE? (3)

- D. North (***please first read my books!***)

⌘ Sorry guys... you should even not ask me that question

⌘ You should only look at the big picture: at the trunk. Choose the right tree and do not waste your time (and mine) with branches or leaves... as Oliver...

⌘ Regulation is not a question of “better contract” vs “second best contract”.

It is only a question of institutional frame. What does the polity in your country? What do the judges? Or the Competition Authority? What do the lobbies at the Parliament or with the government? Do they even lobby or do they prefer to sue? At the local level or at the federal level? If you cannot ask you these questions better not to study a very institutionalized topic like a network industry. See (Levy and Spiller) or (Pablo Spiller) for update.

⌘ You even seem to ignore big mountains as: relations between the federal industry regulator and the competition authority are opposite in the US vis-a-vis the EU; idem for relations between the federal regulator and the local ones. Please look first at mountains or trunks and not at Oliver leaves...

OK NIE...

But do network industries exist for NIE? (4)

- O. Ostrom (*please also read my books!*)

⌘ Sorry guys... you should look at the relevant picture: sometimes it is only the trunk, sometimes only the branches or even the leaves...

⌘ OK that regulation is not a question of “better contract” vs “second best contract”. It is a question of institutional frame.

⌘ Even with strong externalities in a network you might find in the related professional milieu enough relevant information and measurement ex post to imagine an innovative multilateral arrangement managed by the community
⌘ or managed by an “Agent” of this community like a Third Party working there. You already know the “System Operators” (TSOs – DSOs) or the “market operators”. What are they? Third Parties acting as “Agent” of business community. Exchanges have even been cooperatives... !!! ... !!! ... !!!

⌘ You seem to ignore that what you call in the EU “TSOs” can be in the USA proper “ISOs”. Being governed by a community (a nexus of professional stakeholders) having formal and informal rights in the rule making process.

(3) Read all books

And so what about "Governance in network industries" ?

Institutionalist approach of governance in network industries is made of a core with a body and a spirit

- The core (***The economics of governance with economic institutions***)

α1~ Yes it is about "Markets vs Hierarchies". Cannot deny that it did start there: three decades of market building around / inside network industries having previously been deeply vertically integrated (Paul Joskow 1985: "***Markets for Power***" at MIT Press).

α2~ But with many "s". Market does not exist. They are only marketss

α3~-like: "centralized" as mandatory PX /vs/ "decentralized" with only OTC

-like: only "spot" /vs/ "spot" and "future" (articulating time horizons in a "sequence" of markets)

-like: nodal (only one node of network) vs zonal (a bunch of network nodes)
<defining spatial boundaries of markets>

After NIE books

And so what? (2)

-like: “explicit” [<market for network capacity> IS NOT coordinated with <market for commodity>] /vs/ “implicit” [both markets are coordinated as <Merit Order in commodity market gives Merit Order in network access>].
Market can provide vertical integration of upstream with down stream! !! !!!

α4~ Firm (hierarchy) does not exist. They are only firmss (hierarchiess)

-like: “centralised” with a U form (Unitary) /vs/ “decentralised” with a M form (Multidivisional)

-like: only “thin” (organized only inside the firm boundaries) /vs/ “large” (organized inside and outside the firm boundaries: Firm “J” vs Firm “A” – see Aoki; or literature on “Hybrid Forms” like C. Menard)

-like: “Only Firm by Firm” (as more relevant unit of governance) or “The Whole Industry” (as more relevant unit of governance)

After NIE books

And so what? (3)

α5~ If you keep well this in mind: Yes yes the first key question is “Markets vs Hierarchies”. But what does it tell us about “Governance in network industries”. Unfortunately still very little... ..

Let's refine the core to make it “operational”

(Claude Menard: operationalization is key in institutional economics)

- The core of the reasoning (***Governance structures / aligned / with characteristics of transactions***)

After NIE books

And so what? (4)

- The core of the reasoning (***Governance structures / aligned / with characteristics of transactions***)
- First (***Governance structures***) -1-
 - ~ Firms are not of a single and same specie. We have: centralized / decentralized; thin / large; only firm by firm / the whole industry; etc..
 - ~ Hence first and foremost firms have very heterogeneous institutional and transactional characteristics. They are simply unable to all do the same things; to all undertake the same range of activities.
 - ~ Because of its very institutional nature the firm (let say “A”) will rely on a market for transaction (let say “Y” and “Z”) while the firm (let say “J”) never won’t! Never ever!

After NIE books

And so what? (5)

- First (*Governance structures*) <2>
 - ~ BUT BUT BUT exactly the same applies to markets.
 - ~ We have many possible types of markets (centralized vs decentralized; spot vs sequence of markets (for time horizon); nodal vs zonal (for spatial boundaries); explicit vs implicit (for vertically coordination))
 - ~ Hence first and foremost markets have very heterogeneous institutional and transactional characteristics. They are simply unable to all do the same things; to all undertake the same range of activities.
 - ~ Because of its very institutional nature the market (let say “AA”) will rely on a firm for transaction (let say “Y” and “Z”) while the market (let say “JJ”) never won’t! Never ever!

After NIE books

And so what? (6)

- First (*Governance structures*) <3>

~ Because of the heterogeneity of both the “firms” and the “markets” the “true” institutional properties of a given firm in a given market cannot be defined a priori without a careful investigation of both: this firm and that market.

~ NIE is fully ok to think that firms and markets can compete to govern the multitude of transactions that any economy requires.

~ BUT it is so because NIE is very microanalytic when it compares Markets and Firms (Arrow even said: “nanoanalytic” - it speaks!!)

~ It is not the end of the journey because Governance Structures only compete to align with ... **transactions**

After NIE books

And so what? (7)

- The core of the reasoning (***Governance structures / aligned / with characteristics of transactions***)
- Second (***Characteristics of Transactions***) -1-
 - ~ Characteristics of transactions are not given by the primary laws of physics: same Kirchhoff laws applies to integrated monopolies (incl. North Korea), Nord Pool and OTC trading.
 - ~ While physics are only underground, technology is the ground BUT NOT the floor...
 - ~ Technology is the ground because? Because by “transaction” we mean an arrangement which transfers a service, a component, a good, etc., from one agent to another between technologically separable units. Hence where technology combines there is no transaction. Where it cuts here this comes.

After NIE books

And so what? (8)

- Second (***Characteristics of Transactions***) -2-

~ BUT the way technology combines and cuts is also a choice (or a “superchoice”). We know it today under the paradigm of “modularity” (Kim – Clark): one designs technology or technological sets in a vein similar to market design or company design.

~ One glue a bunch of tasks with a “particular or proprietary technology” which reinforces local interdependence of each task with each other. Hence tasks have local similarities of characteristics and of interdependence.

~ We “pack” this bunch of tasks by designing an “interface”; by which this bunch co-operate with the other bunches. Such interface has well defined properties being interoperable with the many other well defined interfaces.

~ Tasks interact locally (inside a bunch) through local particular rules – bunches interact globally through defined common interfaces

~ We end up with “plug and play” technological continuum: I do what I want locally as long as I keep an interface able to interplay with all others

After NIE books

And so what? (9)

- Second (***Characteristics of Transactions***) -3-

~ in a nutshell: a bomb in the economics of governance!

~ A typical “network industries” bomb because Network Industries are today massively designed in many directions:

*Design of technological units (and of their technological interplay) opens the space of feasible transactions (= the demand for governance structure)

**Design of markets and design of firms gives the space of feasible governance structures (= the offer of governance).

~ Matching feasible transactions with feasible governance is what NIE is about today in network industries.

~ Matching can be “combinatory” (looking for a workable alignment among existing tools and tasks to do it well or better). Roughly Oliver Williamson.

~ It can also be “strategic” (looking for an exclusive match “transaction / governance” that delivers to certain people); See Nickerson and Silverman

After NIE books

And so what? (10)

- The body around the core of the reasoning (***both governance structures and transactions are “context dependent”***)
- (Context dependence of ***Governance and Transactions***) -1-
 - ~ In network industries the basic industry structure is “context dependent”.
 - ~ Look: legal and regulatory definitions of unbundling rules, of “regulated operators” (TSOs, DSOs; or PXs), of network and interconnection access rules, of market design predefine what are the industry structure, the companies boundaries, the governance properties of markets vis –a-vis the firms... and the feasible transactions
 - ~ Of course we also are EU: the implementation of our “federal regulation” is mainly made at country level which implies many differences between here and there and a tension between (inside a country) and (interconnection regime)

After NIE books

And so what? (11)

- (Context dependence of ***Governance and Transactions***) -2-
 - ~ Of course we also are EU: Competition Policy at “federal” level (and DG Comp) can anytime undo what regulation has made at country level (and one day we will see: equally at “federal” level; think about “state aid” nature of renewables support schemes; about TSO cross-border regime in Sweden)
 - ~ We inevitably end up with a scheme of co-design of Governance Structures and Transactions being strongly constrained by their larger institutional environment
 - ~ This environment is multilevel (at least: country level / EU level) and multichannel (at least sector regulation / competition policy).

After NIE books

And so what? (12)

- (Context dependence of ***Governance and Transactions***) -3-
~ We end up with an analytical frame being made of two columns and two lines

	Governance Structures Properties	Characteristics of Transactions
EU level / Country level		
Regulation channel / Competition channel		

After NIE books

And so what? (13)

- (Context dependence of ***Governance and Transactions***) -4-
 - ~ Important part of the context dependence upon institutional environment is not as formal as “Law and Regulation”, “Unbundling and Third Party Access” or “Market Design”.
 - ~ Key agents can act as “Professional Third Party” vis-à-vis market players. Let’s call them “operators”: “network operators”, “market operators”. They are not law makers, lawyers or regulators. They are industry or market facilitators. They play a role of “platform” for the market players.
 - ~ Because of this they can easily become “agents of a professional community” and be themselves submitted to an informal set of constraints and influences. Here O. Ostrom reigns: repeated interactions; shared information; common beliefs; reciprocity; reputation; etc. overplay the formal games of the rules. In the USA “ISOs” are independent... from authorities but responsive to... their professional communities

After NIE books

And so what? (14)

- **The spirit above** the core and the body of the reasoning (*governance structures; transactions; formal and informal institutional environment; etc.*)

~When an economic reasoning ends up with a matrix as terrifying as mine:

	Governance Structures Properties	Characteristics of Transactions
EU level / Country level		
Regulation channel / Competition channel		

~ You know that it is not hard science but art of reasoning. You immediately understand why Ronald Coase never gave a coherent & systematic view of his own “Coasian universe”. For him reasoning what mainly reasoning: keeping alive a certain rule of reason. As: let see “How China became capitalist”.

~ Ok Ronald: Let see “How governance structures pop up and evolve in network industries”.

To conclude

1/ Institutional Economics provides a frame to navigate in the world of governance structures

- Markets, Firms and relational contracting are alternative tools which can complement or substitute each other to frame transactions among agents
- Firms are not made of a single governance structure as they handle different transactions - inside the firm (as: the flow of operational work; the coordination between operations and managers; the interactions with the stockholders) - and outside (interactions with the suppliers; the customers; the bankers; the community). Firms are conglomerate of several governance structures.
- So are the markets (conglomerate of several governance components)
- Economic properties of both firms and markets are interdependent (to complement as to substitute)
- Both firms and markets properties are also “environment dependent”
- So are the characteristics of transactions

To conclude

2/ Network Industries enlarge the Institutional Economics frame flexibility to navigating in the world of governance structures

- Network Industries need (or did need) “intense” design and re-design to start hosting markets and then interacting with.
- Network Industries are particularly sensitive to “modularity” and “packaging” of tasks along the value chain. Networks and markets are themselves entirely incorporated into this modular design.
- Hence the whole set of alternative feasible variants of market, industry and firm arrangements is particularly large in network industries.
- In practice –however- some institutional features may be invariant (even if badly illogical or discretionary). This creates fragmented sub-world with less feasible variants for governance and transactions.
- It also creates “anti-worlds”. Given that –let say- features (a), (d) and (p) are invariant into a particular sub-world, certain governance structures or transactions might have here very particular properties matching so perfectly... That they are here undisputed first best.
- Transitivity is not guaranteed from one sub-world to the other.



Introduction to Economics of Energy & Environmental Policy Victor

Purpose, Goals

Jean-Michel Glachant, Paul L. Joskow and Michael Pollitt

Can China be the Catalyst for a Clean-energy Future?

Paul R. Brink

Is Combating Climate with Energy Policy a Good Idea?

A. Doney Ellerman

The Oil Market to 2050—Implications for Investment and Policy

Mark Rietveld

Shale Gas: A New US Revolution?

Henry D. Jacoby, Sergey Paltsev and Francis O'Sullivan

The Future of Incentive Regulation

Stephen Littlechild

The Future of Liberalization of Electricity Markets

David Newbery

Energy Efficiency: the Long-run Trends

Peter J.G. Pearson

The Architecture of a Climate Deal after Cancun

Nicholas Stern

Some Political Economics of Global Warming

Jean Tirole

PUBLISHED BY



**Have a look at
the international
journal
I am chief-editor
of!!**



Thank you for your attention

Email contact: jean-michel.glachant@eui.eu

Follow me on Twitter: @JMGlachant

Read the Journal I am chief-editor of: EEEP

“Economics of Energy and Environmental Policy”

My web site: <http://www.florence-school.eu>