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Business Relationships in the "Digital Economy"
A property rights based analysis of the impact of the digital economy on relational exchange

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Abstract

Key Words: *Relationship-Marketing, Property Rights, digital economy, e-commerce*

Since the mid of the 70s the importance of business relationships in industrial markets has been investigated by the research of the IMP Group. However, according to some authors, the development of new information and communication technology, especially the rise of new media and the internet put into question the necessity of relationships as a mode for economic exchange in industrial markets. Electronic commerce is assumed to favour increased price competition and an overall shift towards more use of markets rather than hierarchies or relationships. This tendency towards perfect markets as described in neoclassical textbook economics is caused by reduced switching costs due to technology induced decrease of transaction costs of search and coordination. However, a deeper analysis provide at least as much arguments contrary to this view. By applying a property rights theoretical perspective it will be suggested that ownership related characteristics of transactions will get more importance in the "digital economy". A framework for analysis will be presented, that is based on the property rights dimensions of ownership transfer, excludability and rivalry in using a resource. It identifies different cases of the impact of ownership related issues on transaction cost and switching cost and therefore on the mode of doing exchange. From this point of view it will be argued that hybrid governance mechanisms like relationships are still an appropriate institution for coordinating transactions with certain ownership characteristics while others may tend towards more transactional coordination. Moreover, a convergence of formerly hierarchical and market governance toward hybrid like relationships could be hypothesized. Besides this, it can be concluded that economic characteristics of transactions favouring business relationships are not only agency theory related "information asymmetries" and "specificity" as analysed in transaction cost theory. Rather, the implications of the "specification of property rights" may provide additional insights for an economic foundation of relationship marketing.

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1. Introduction

Since the mid of the 70s the importance of business relationships in industrial markets has been investigated by the research of the IMP Group (e.g. HAKANSSON 1982). Among other streams of research, the IMP Group laid the foundation for a paradigmatic shift in marketing theory from a consumer marketing based focus of generating single transactions towards a comprehensive relationship management. Especially in industrial markets, interaction, relationships and networks of relationships are not only central modes of doing exchange but determine the overall perspective how to look on these markets and investigating economic activities (HAKANSSON and SNEHOTA 1995). However, the development of new information and communication technology, especially the rise of new media and the internet put into question the necessity of relationships as a mode for economic exchange in industrial markets. Moreover, some authors even argue that electronic commerce will lead to increased price competition and an overall shift towards more use of markets rather than hierarchies (e.g. MALONE et al 1987) . The reasons are reduced switching costs due to technology induced decrease of transaction costs of search and coordination. The research problem addressed in this paper is to analyse the following puzzle: Will be hybrid or relational governance mechanisms like business relationships more or less replaced by the price mechanism of anonymous spot markets as assumed in neoclassical textbook economics?

2. Some Characteristics of the "Digital Economy"

During the time this paper was written, the so called "new economy" just seem to disappear as fast as the stock prices of the companies that represented this new development crashed. Serious concerns are put on the question what are the essentials of the new economy? In this paper the digitalisation of information will be considered as the most important driver of this development. Therefore the term "digital economy" will be preferred over the latter one. The digitalisation of information is the source of a convergence of three formerly more or less separated industries. The telecommunication and information technology industries are merging with the media industry into one multimedia market (e.g. ADSTEAD and McGARVEY 1997): The driver of digitalisation of information works as a kind of "common language" between these industries. In terms of network theory it allows the interlocking of formerly distinctive activity chains and the new combination of before more or less isolated resources (HAKANSSON and SNEHOTA 1995). This development can be good described as a continuous collective organising process that connects three formerly more separated

industrial networks. External factors, as the mentioned technological advances of digitalisation altogether with entrepreneurial action are the two main factors of change in this process of networking.

However, the question remains what are the economic consequences for business relationships in these converging networks? To provide some insights from an economic point of view, emphasis is put on “traditional market imperfections” as a foundation for the existence of relationships and how they are affected by the impact of digitalisation.

3. The Decrease of “Traditional” Information related Market Imperfections

3.1 Information related Market Imperfections

From an economic point of view, perfect competitive markets rely on the existence of some preconditions. In such a perfect world there would be no need for marketing at all since all products and services would be homogenous and all actors would have complete information on all possible outcomes of the world today and in the future. The violation of some of these preconditions for perfect competitive markets is a central concept for an economic foundation of marketing theory in general and for the analysis of business relationships in particular. Especially new microeconomic theory like information economics (e.g. AKERLOF 1970) and with even more emphasize the different streams of neo-institutional economics like agency theory (e.g. BERGEN et.al. 1992) and transaction cost theory (e.g. WILLIAMSON 1985) are build on the violation of rationality and complete information. Bounded rationality of actors creates serious uncertainty concerning the development and complexity of the environment. Moreover, together with the assumption of opportunism it leads to uncertainty about the behaviour of transaction partners. These market imperfections are reflected in the existence of transaction costs which are assumed to be zero in neoclassical textbook economics and which can be distinguished into at least two cost dimensions. Following MILGROM and ROBERTS (1992) these are coordination costs and motivation costs. The former are related to information needs that are necessary for the matching of buyers and sellers. The latter are associated with safeguarding against behavioural uncertainty regarding information incompleteness and asymmetries as well as costs of imperfect commitment (GARICANO and KAPLAN 2000). Both kind are important concepts for the theoretical foundation of business relationships since they are causes of market failure and imperfect competition. Therefore the subject that has to be dealt with, is how these market imperfections will change in the digital economy.

3.2 Electronic Markets

Considering the impact of digitalisation of information due to the internet, there is one stream of thinking in the literature that does emphasize the decreasing impact on certain kind of market imperfections caused by innovations in information technologies especially through digitalisation. BAKOS (1997) suggests that reduced buyers search costs in electronic marketplaces do not only move *"commodity markets closer to the classical ideal of a Walrasian auctioneer where buyers are costlessly and fully informed about seller prices"* (BAKOS 1997, p. 1677) and where price competition among sellers will reduce sellers market power. Even in differentiated markets with heterogeneous buyer tastes and seller products offerings, reduced search costs were shown to have a significant impact on market equilibria, resulting in increased allocational efficiency and possibly lower prices and increased competition among sellers. Applying these findings to the mode of coordinating transactions, from a transaction cost theory perspective, MALONE et.al. (1987) do argue that the importance of factors leading to hierarchical modes of governing transactions, namely information asymmetries and perceived complexity of products and asset specificity, decreases due to digitalisation of information.

The widespread use of information technology decreases the "unit costs" of coordination and since coordination costs are that cost dimension on which markets are weak compared with hybrid or hierarchical governance modes, the decreasing importance of that cost dimension will favour the strength of markets. The strength of markets, having lower production costs due to scale economies through market aggregation, will gain more relative importance. Moreover, perceived complexity of products will be reduced through improved communication of product descriptions. In terms of transaction cost theory, decreasing transaction costs of information search, coordination and product evaluation reduce information asymmetries and product complexity and in turn uncertainty regarding the environment as well as behavioural uncertainty. So far as information technology will promote flexible manufacturing technology, asset specificity will be reduced as well. Furthermore, the decrease of specificity makes product customisation a kind of commodity service achievable by any company and in addition, hereby lowering market entry barriers that undermine formerly sustainable competitive advantages (e.g. PORTER 2001). This increases price competition even further. Therefore, MALONE et.al. (1987) do plausible propose that this development would lead to a shift from hierarchies and relationships towards electronic markets and an increased competition, based on price.

3.3 Empirical Evidence

CARICANO and KAPLAN (2000) study empirically the impact of the Internet on the two mentioned transaction cost dimensions of coordination costs and motivation costs. The former are reduced by electronic commerce through process improvements (reduced costs of existing activities and redesign of processes) and marketplace benefits (reduced search costs, better information about characteristics of products and actors). For motivation costs the theoretical impact is more ambiguous since at least to *"the extent that physically observing the merchandise to evaluate its condition is valuable to the buyer, some of the information is lost through the conduct of the transaction through an electronic format"* (CARICANO and KAPLAN 2000, p.7). Therefore these transaction costs could increase, although the authors did not found significant evidence for this. However, the potential gains from savings of coordination cost must be outweighed against the potential increase in motivation costs. SMITH et.al. (2000) overview some of the literature that investigates the efficiency of electronic markets in terms of price levels, price elasticity, menu costs and price dispersion. Until today empirical results are mixed on the question of efficiency in internet markets and therefore on supporting the shift to perfect competitive markets. While research on price levels, price elasticity and menu costs are consistent with the hypothesis of increased market efficiency (SMITH et.al. 2000), the results on the persistence of price dispersion indicates the existence of some other market imperfections. These allow suppliers to charge different prices for the same good at the same time. Potential sources of price dispersion are suggested to be found in unmeasured product heterogeneity, valuation of purchasing time, branding and trust. GROVER and RAMANLAL (1999) argue also from an economic point of view that the impact of new media will ultimately be reflected in the question how sellers can extract consumer surplus. This amount to the possibility to discriminate prices. The authors try to provide a broader view of information and markets by confronting some of the arguments ("myths") towards electronic markets with "counter-myth" which are also drawn from fundamental economic principles. They emphasise new possibilities for imperfect competition and price discrimination. Some of these arguments will be considered in the next section as they deal with property rights related characteristics of transactions. To sum up, empirical evidence seems to support the thesis for a shift towards electronic markets at least for simple standardised exchange goods like commodities which can be easily evaluated. The new medias make communication and information gathering less expensive, therefore decreasing transaction costs of coordination and increasing the transparency of markets. According to transaction cost theory (WILLIAMSON 1985) this will favour market governance.

4. The Increase of "New" Ownership related Market Imperfections

4.1 Ownership related Market Imperfections

Not only "traditional" information related market imperfection which are reflected in transaction costs of coordination decrease. Rather, to get a broader view on the impact of the digital economy on relationships, in the following part a conceptual framework will be presented, that incorporates "new" ownership related market imperfections like problems of ownership transfer and internalisation of positive and negative externalities. These imperfections are not really new and have been considered since long in economics. However, despite their potential for an economic foundation of marketing theory, they have not been treated in detail for marketing problems and have not been integrated into one comprehensive framework.. The essence of the following conceptual framework is the assumption that property rights related characteristics of transactions do have an influence on certain kind of transaction costs and switching costs and therefore on the mode of doing exchange.

Property rights are the legal rights to control resources. They compound the right to use a tangible or intangible asset (*usus*), the right to appropriate the returns from the asset (*usus fructus*), the right to change a good (*abusus*) (e.g. change of location, substance, appearance) and finally the most important *right to alienate a good* and hereby to transfer the previous mentioned three rights (RICHTER and FURUBOTN 1996). The latter one is the central right of founding complete ownership. In essence this means that *"the owner of an asset has residual control rights over that asset: the right to decide all usages of the asset in any way not inconsistent with a prior contract, custom, or law."*[1] Ownership can be held on tangible things (incl. animals, plants), on intangible things (e.g. copyrights, patents) and also as the right of self-determination of human beings that is the right of ownership on the own person. As HART (1995) has shown, the question of ownership on assets has important consequences on incentives for investment behaviour of actors. However, specification and transfer of property rights is not costless and sometimes even impossible due to technical reasons. This leads to the problem of positive and negative *externalities* and *public goods*. Besides increasing returns to scale, the problem of externalities is one cause of market failure as shown by ARROW (1969). Since this analysis deals with imperfect markets and the non-functioning of the price mechanism to allocate resources, it does offer an economic explanation for non-market hybrid governance mechanisms like relationships. Both economic

[1] See HART (1995, p. 30). HART even proposes: "that possession of residual control rights is taken virtually to be the definition of ownership. This is in contrast to the more standard definition of ownership, whereby an owner possesses the residual income from an asset rather than its residual control rights" (1995, p. 30).

concepts, externalities and increasing returns to scale, are interdependent and have even much more influence in the "digital economy" than before: *"diminishing returns hold sway in the traditional part of the economy – the processing industries. Increasing returns reign in the newer part – the knowledge-based industries ... They call for different management techniques, strategies, and codes of government regulation. They call for different understandings"* (ARTHUR 1996, p.101).[2] While this statement emphasize the importance of increasing returns, here the impact of externalities will be investigated.

Since externalities are a consequence of incomplete specification of property rights, the framework presented provides a property rights related taxonomy of transactions. In contrast to private goods pure public goods are characterised (1) by the missing possibility to exclude other actors from using a resource and (2) by the missing rivalry between different actors to use a resource at the same time (MANKIW 1998). These characteristics of public goods can also be described as Externalities. Externalities imply that the behaviour of actors have influence on the utility of other actors without being compensated, or internalised by the price mechanism of the market (MANKIW 1998). The missing internalisation of externalities is due to transaction costs of excluding other actors from the use of resources (ARROW 1969). These are costs of specification, enforcement and adaptation of property rights. If these costs of exclusion are prohibitory, a complete specification of property rights on resources is impossible. The property rights are attenuated and externalities cant be internalised (FURUBOTN and RICHTER 1991). Hereby potential incentive problems are created since the user does not internalise the full costs and benefits of her behaviour. Either too much negative externalities are produced or the incentive to generate positive externalities is failing. Therefore a trade-off exists between the internalisation of externalities which increase economic welfare and the transaction costs of specification, enforcement and adaptation of property rights.

[2] See also the critique on the discussion on network externalities, increasing returns and path dependency by LIEBOWITZ, S.J. and MARGOLIS, S.E. (1995a, 1995b). Note however, that their questioning of induced market imperfections by externalities and increasing returns and their opposing of governmental intervention to improve efficiency do not harm the arguments made here in favour for relationships. In contrast, here it is argued that business relationships between independent market actors are a governance mode do offset market imperfections rather than regulatory inventions by the state. From the macroeconomic perspective of LIEBOWITZ and MARGOLIS, relationships as implied here, would be fall under market transactions. So, it will be agreed that imperfections due to externalities and increasing returns can be managed without the state as long their extent is limited to a "local level".

4.2 The Impact of Externalities on Exclusion Costs and Switching Costs

Back to ARROW (1969), externalities and public goods are reasons for market failure which are analysed in the economic literature (MANKIW 1998). The point here is, that the digitalisation of information seem to promote transactions that are characterised by positive and negative externalities and therefore increase the importance of problems to transfer complete ownership on resources and fully internalise costs and benefits. Therefore ownership related characteristics of transactions are considered as the independent variables which determine transaction costs and therefore the mode of governance. These ownership related characteristics are the *possibility to transfer complete ownership* on resources in general and the *exclusion* and *rivalry of using* a resource in particular. Four ownership related cases promoting business relationships rather than markets or hierarchies can be proposed (see Figure 1):

Transfer of complete ownership?	Examples	Switching Costs				Mode of Governance		
		Transaction costs of coordination	Specific Investments	Opportunity costs	Costs of enforcement of property rights	Hierarchy	Hybrid	Market
Yes Excludable? Yes Rivalry? Yes	Exchange Goods							
No Excludable? Yes Rivalry? Yes	Tacit Knowledge							
Excludable? No Rivalry? Yes	Codified Information							
Excludable? Yes Rivalry? No	Goods with Network-externalities							
Excludable? No Rivalry? No	Public Goods							

Figure 1: Assumed impact of digital media on the efficiency of different governance modes

4.2.1 No Possibility to transfer ownership on Tacit Knowledge

A Resource on which ownership can not be transferred due to technical reasons is “tacit knowledge” since it is embodied in human capital. In absence of slavery, these resources cant be bought and sold in perfect markets in order to secure access, rather relational contracts are necessary (e.g. employment contracts). However, rivalry and exclusion of using tacit knowledge do exist, because tacit human capital can not work at the same time for different employers. This fact will not change in the digital economy since only codified knowledge rather than tacit knowledge can be digitalised and therefore made accessible for many users at

the same time. Therefore relationships as a tool to facilitate the access to use these tacit resources still remain necessary. However, on the other hand decreasing transaction costs of search and coordination will make hierarchical exchange less attractive for those tacit resources that are not part of the core competencies of the firm. This would favour the development of business relationships in contrast to hierarchies and markets.

4.2.2 Increasing Transaction Costs of Exclusion

The question to transfer or not to transfer property rights on resources also depends on the *transaction costs of exclusion* (specification and enforcing property rights). For some resources like codified knowledge and information goods in general, there have been always serious peculiarities of excluding other actors of using them. [3] The "buyer" of an information always gets only a copy of the information since "after buying a car, the buyer posses the car. But if an idea is "sold", both buyer and seller do posses it" (PICOT and FRANCK 1988, p.545). Even in the case of saving information on physical media (e.g. books, CDs, Video-tapes) or by agreeing on a contractual clause of not using the "sold" information, the buyer always will have only a copy. The original information or the "master copy" will remain at least in the head of the information supplier. Another exclusion related externality is the so called “information paradox” of ARROW (1974). From this perspective information can only be valued economically by a potential buyer if he know the information. When the information is known, one does not need to buy it anymore. All these problems ask for special institutions (e.g. copyrights) that allow at least for partial exclusion of using other actors interlectual property. If these costs are prohibitive high, costs and benefits of using a resource cant be fully internalised and incentive problems may arise. Hierarchies (vertical integration) and relationships are modes of governance that economise on exclusion costs. They should be considered as institutions which handle negative externalities in terms of protecting resources on which complete ownership cant be kept.

The possibility to digitalise codified information through the new media allows copying information at costs near to zero since the impact of increasing returns in information production (high fixed costs information production, decreasing average costs of copies) get even more importance. The case of “Napster” gives some anecdotal evidence for the

[3] In economic theory it is also assumed that for information goods there exists no rivalry in consumption between different actors. The amount of technological or other knowledge for a certain user will not be reduced if somebody else is using it (MANKIW 1998). Therefore information are not used up by consuming them like food or fuel. However, from an single actors point of view, the economic value of information might be affected. By making certain information available to the public it can loose its value for competitive advantages. Therefore in this paper information goods are assumed afflicted with exclusion problems but rivalry is allowed for on a private level.

importance of this issue. Vertical integration as in the case of “Napster” by “Bertelsmann” and offering a subscription service (kind of business relationships) are devices to internalise the economic benefits. Relationships or even hierarchical governance will reduce behavioural uncertainty regarding opportunism of the exchange partner which in turn reduces transactions costs of safeguarding against hold-up. For codified information, these institutions are supposed to get more importance in the digital economy.

4.2.3 Network Externalities and Switching Costs

Besides the direct effect on *exclusion costs*, externalities have also an indirect impact on *switching costs*. According to PLINKE (1997) switching costs encompass transaction costs of search and communication, specific investments and opportunity costs. The transaction *costs of search and communication* are direct switching costs and are part of the costs of coordination according to MILGROM and ROBERTS (1992). If a buyer wants to change the supplier she has to search a new one, has to evaluate product specifications and has to write, enforce and adapt a new contract. Of course this is not costless. As already suggested above, these costs are assumed to decrease in the digital economy due to reduced costs of information processing and communication. However, specific investments and opportunity costs are suggested to increase: *Specific Investments* according to WILLIAMSON (1985) are characterised by the fact that their value is higher in the transaction in question than in the next best alternative. This difference in value is the Quasi-rent. Therefore the actor that made the specific investment is “locked-in” a relationship by its sunk costs which inhibits a switch to another actor until a compensation for the difference will be offered. Finally, the *opportunity costs of lost benefits* of the existing relationship in case of changing a supplier impose costs of switching. Independent from concerns of externalities, the digital economy offers a lot of potentials to increase the impact of specific investments and opportunity costs as shown by SHAPIRO and VARIAN (1999). For instance, by improved possibilities to process, store and communicate information of customers, loyalty programs can be improved too. Customers are rewarded by repeat purchases and accumulate benefits which means opportunity costs of lost utility in case of switching.

Besides these individual switching costs, more importantly the digitalisation of information and interconnecting of actors promote externalities which induce collective switching costs. This is case of network externalities (SHAPIRO and VARIAN 1999). These are a kind of positive externalities since not only no rivalry in using a good or service exists, but the utility even increases with the number of other using actors. However, exclusion is possible as in the

case of telephone or utility networks where the owner of the network can charge the users. As network effects are supposed to have an increasing importance in the digital economy (SHAPIRO and VARIAN 1999) also their impact on switching costs should increases. Buying actors are induced to specialise towards a single supplier of a system or technology since the benefits of this system depend on the number of other actors already using it. The customers make *specific investments* in order to learn to use a system and to integrate it into their existing infrastructure. These specific investments are sunk costs and therefore switching costs as analysed above. On the other hand network externalities may create switching costs as *opportunity costs of lost utility.* These encompass the lost utility of the fact that the benefits depend on the number of other actors using this system (e.g. benefits from communication with other actors, file transfer, enhanced mobility of employees). Both kind of switching costs can create path dependency and locked-in towards a single technology, system and supplier (ARTHUR 1994). Therefore the result are relationships, in which customers "want to be voluntary" as in the case of opportunity costs and at the same time "have to be" due to specificity (PLINKE 1997). Anecdotal evidence provides "Microsoft" with its "Windows" and "Office" product lines, or business software R3 from "SAP".

4.2.4 Public Goods are going Public

Public goods are characterised by no exclusion and no rivalry in using a good. On the one hand decreased costs of search and communication due to the internet will facilitate the matching of actors which share common interests and beliefs. On the other hand the digitalisation of information allows for a cost structure for distribution content that is characterised by increasing returns (high fixed costs, decreasing average costs for additional copies). Both factors will favour the creation of public good like communities and discussion groups (KOLLOCK 1999). Therefore, due to the internet these "club services" will either be possible for the first time or will replace public services formerly supplied by state owned agencies (e.g. consumer advisory agencies). Again, membership like relationships will replace hierarchical governance and public goods are indeed going public.

4.3 Convergence of Markets and Hierarchies towards Relationships

To sum up, due to the impact on switching costs and the costs of specifying property rights, externalities have influence on the efficiency and choice of either transactional or relational exchange. Transactions with no transfer of ownership either due to the technological impossibility or due to negative or positive externalities will not be coordinated by the price mechanism of neoclassical markets but rather through hybrid governance like relationships.

From a marketing point of view, the interesting question is how to design appropriate institutions that internalise these externalities for a given product offering, or alternatively, how to design a problem solution that incorporates ownership characteristics which allow for internalisation of externalities for a given governance mechanism. Therefore, there are a lot of arguments that the new electronic media do not only have the tendency to replace relationships through electronic markets but rather that market transactions will be replaced by relationships as well as relationships will replace hierarchical governance in the case of tacit knowledge. On an aggregate level one could postulate a convergence from formerly hierarchical and market governance towards relationships as the most efficient mode of doing exchange in the digital economy. The identified driving forces that favour one or the other mode of governance show the importance of property rights related characteristics of transactions in general. The following five propositions indicate that process of convergence towards more relational exchange in the digital economy. The test of these propositions still remains a question of empirical findings.

(1) Independent of ownership characteristics, due to digitalisation of information the transaction costs of search and communication (coordination costs) will decrease. Ceteris paribus, formerly relational exchange will have a tendency towards market exchange for all kind of transactions, but especially in the case of standardised exchange goods.

(2) The possibility to digitalise information increases the costs of exclusion and therefore the importance of institutions to safeguard against opportunism of hold-up other ones intellectual property on codified information. This will lead former transactional exchange tending towards hybrid or even hierarchical governance.

(3) The digital economy will be characterised by a higher proportion of transactions which exhibit network externalities and therefore lock-in buyers into opportunity costs and specific investments. These transactions will be governed by relational exchange.

(4) Decreasing transaction costs on the one hand but the impossibility to transfer complete ownership on certain resources on the other hand (e.g. tacit knowledge) will lead former hierarchical exchange tend towards hybrid exchange.

(5) Finally, lower transaction costs of search and communication and increasing returns in information production will enhance the possibility for individual actors to produce more local public goods for specific niche markets in membership like relationships (e.g. club services like communities and discussion groups.)

5. Conclusion

Not only information deficiencies and specificity in the sense of transaction cost theory provide an economic foundation for business relationships. Rather, ownership related characteristics of transactions deduced from property rights theory offer additional insights for explaining governance modes different from hierarchies and markets. These characteristics can be traced back to the possibility to specify property rights and transfer complete ownership on resources. In transactions where, (1) ownership cant be transferred due to technical reasons, (2) the specification of property rights is very costly or (3) where the value of a resource depends on the number of using actors, business relationships are the appropriate governance mechanism. Since these characteristics get even more importance in the “digital economy”, relationships rather than pure market transactions governed by the price mechanism will dominate. A shift towards electronic markets is only assumed for standardised exchange goods like commodities for which property rights can easily be specified.

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