Conflict Analysis between Information Sharing and Webpage Propriety in Webpage of EC: Evident from China

ShiBin Su
School of Management, Fuzhou University, Fuzhou, 350108, China
sushibin2003@163.com

ZhengBing Hu
Department of Information Technology, Huazhong Normal University, China
hzb@mail.ccnu.edu.cn

Abstract- Webpage is a foundation to electronic commerce (EC), but webpage dispute increase in recently, which impacts the healthy development of EC seriously; however, existing theoretic outcome can’t solve the problem effectively. Therefore, based on analyzing conflict between information sharing and webpage propriety in webpage of EC, the paper demonstrates it by conflict model. Model 1 indicates that, in two partners’ EC, if without any exterior restrictions, rational EC webpage owner cannot share their proprietary webpage information and result in the failure of EC. Model 2 shows that, as long as mediator is introduced in EC, and the mediator is bestowed some rights, stable solution can be realized. Then, the paper demonstrates the theoretic outcome by case study, which provides theoretic foundation to summate existing intellectual property regime and to make law of EC. At last, the paper suggests future research.

Index Terms- EC; webpage; information sharing; propriety; conflict.

I. INTRODUCTION

Internet is the greatest invention in A Panoramic History of Human Civilization and scientific development in 21st century by rebuilding human life and model of production. Especially, internet is not isolated and abstract network only, to become a new production capability, it is necessary to fill and perfect contents and services for users provided by network, this is the key for internet to spur social progress. Therefore, people devote themselves to owning webpage, and various kinds of webpage produced increasingly. However, webpage brings convenience for people to obtain and share information, meanwhile, it brings huge unfit for traditional intellectual property regimes, since the advent of webpage; different legal disputes perplex webpage operators also [1]. Especially the webpage conflicts in EC, disputations increasingly recently. For example, the operation of EC exist various intellectual property such as databases can be copied, stolen, changed or destroyed etc [2]. That brings many discussions for people to EC webpage protection.

EC webpage protection can be paid more attention, one of the reasons is that webpage is whole composed by many parts, they are isolated and can’t be separated, and it is difficult to protect them by certain way directly and simply. To realize effective protection for EC webpage, firstly, it must solve EC webpage conflicts; EC webpage conflicts are always dependent on jurist, and depend on existing intellectual property regime (such as copyright regime, patent regime, brand regime, unfair competition etc), intellectual property regime likes a “power resource” in webpage innovation, it drives more new webpage advent by economic revenue and spurs the development of whole EC. However, with the development of EC increasingly, it will produce new webpage conflicts continuously, it can’t satisfy actual need depend on existing intellectual property regime only, and it hasn’t made law on EC yet, just as what Zheng Chengsi had said in “prospect on intellectual property research in 21st”, the focus for Chinese law to discuss intellectual property concentrate on intellectual property in network and intellectual property bring by EC, especially webpage conflicts [3].

In a word, as Chinese existing intellectual property can’t satisfy to solve EC webpage conflicts effectively and it hasn’t made law on EC [4], it is necessary to make research on EC webpage conflicts; the theoretic research will be conducive to understand information sharing in EC webpage and to balance interests in webpage conflicts, and provides direct theoretic foundation for giving countermeasures to information sharing in EC webpage and conflicts coordinate in webpage, to perfect existing intellectual property regime and to make law on EC, which will spur the development of EC enterprises in China smoothly.

II. LITERATURES REVIEW

Since the advent of EC, as a new and potential research subject, various problems faced by EC webpage have obtained attention by many scholars [5]. Among them, there are many technology experts and legal
experts devote themselves to the research field which has certain difficult and has continues new problems in webpage management in EC in china. But the researches pay more attention to strengthen technological protection and legal protection for EC webpage. In West Country, EC webpage protections adjust by marketing mainly, therefore, they explore countermeasures and tactics for EC enterprises to strengthen webpage protection microscopically and seldom explore them macroscopically in academic. Scholars from domestic and aboard all think webpage play important role in EC [6], and do many research on technological realization and improvement for EC webpage[7]. Meanwhile, Scholars from domestic and aboard all think there are infringement act in EC webpage [8], and explore technological protection and legal protection for infringement act in EC webpage[9], legal protection is the major for EC webpage protection.

Infringement acts in EC webpage come from conflicts between information sharing and propriety in EC webpage, to resist the Infringement act, it is necessary to understand conflicts mechanism between information sharing and propriety in EC webpage deeply. Despite of existing researches have important reference and guidance to solve conflicts between information sharing and propriety in EC webpage, conflicts between information and propriety in EC webpage have their specific characteristics, and existing researches can’t solve them in theory obviously. Therefore, point to features of conflicts between information and propriety in EC webpage, the paper attempts to carry out systematic research by combining quantity and quality from economic and managerial angle, and demonstrate the necessity for the advent of conflicts between information sharing and propriety in EC webpage, which provide theoretic foundation for perfecting existing intellectual property regime and making law on EC.

III. ANALYSIS OF QUESTION

In eye-economy, absorbing consumers is a precondition to carry out EC and to obtain profit. A well-thinking, rich content, beautiful webpage EC website is very important to absorb consumers. The cores of EC website are datum, which include various works (such as writing works, picturegraph works, music works, and movie works etc), data bases, various links (normal links, embedded links, deep links and frame links etc) and domain etc [10]. For EC enterprises, to improve EC enterprises’ achievements by absorbing more consumers, it must design and think various data such as colors, pictures, words and their combination in enterprise EC webpage carefully, and absorb consumers by distinguish enterprise EC webpage from others EC webpage. Meanwhile, to make enterprise EC famous quickly, it must improve EC webpage well-know by various marketing promotions. It will spend EC enterprise many human, physical and finance on both webpage-making and webpage promotion.

To make consumers accept EC webpage, to promote EC, they all need display various datum of EC webpage to exterior, however, Datum propriety in EC webpage still belong to owners of EC webpage. Once various data in EC webpage are public, it is easy to invade these data and the cost is lower, therefore, conflicts between information sharing and propriety in EC webpage are produced easily. Conflicts between information sharing and propriety in EC webpage are interests’ competition between invader enterprise and owner enterprises of webpage. To invader, it can obtain three kinds of interests at least: reducing cost to construct webpage, saving cost to promote webpage, obtaining additional revenues brought by invading EC webpage. Obviously, Conflicts between information sharing and propriety in EC webpage are interests’ conflicts in essence. Conflicts object are owner of EC webpage and invader of webpage. Once conflicts happen, it needs to coordinate them. Therefore, it is inevitably involved in the third party of conflict object. In reality, the third party may mediator party admitted by both conflicts object, it also may be juristic.

IV. RELATIVE ASSUMPTIONS

In Conflicts between information sharing and propriety in EC webpage, it is inevitably involved in player, player’s tactics and conflicts revenues, to establish model easily, the paper makes the following assumptions:

First, from players, we consider two members at first: owner of EC webpage and invader of webpage, then, it add a coordinator (such as juristic). Meanwhile, we assume the behaviors of players were rational. Their aims are to make profit as possible as they can.

Second, the paper assumes mediator is neutral; the neutral position is endowed by law or others. The mediator can deal with conflicts between information sharing and propriety in EC webpage fairly.

Thirdly, in conflicts between information sharing and propriety in EC webpage, there exists three tactics for owners of webpage: public, public partly and no public. The invader has three tactics also: invade, invade partly, and no invade. The tactics of mediator are punish, coordinate and nothing. Punish is more severe countermeasure than coordinate, coordinate is more severe countermeasure than nothing. All players can adopt one tacit, no two or three tacit.

Forth, EC webpage not only spend cost, but also bring benefit, if invade the webpage, invader can save cost (such as setup cost, promotion cost). Despite the invader can obtain benefit by setting up itself, if it invade other webpage, it can obtain more benefit.

V. MODELING AND RESOLUTION

A. Model 1 of Conflict Analysis (CA)

(1) Setup of model 1

In conflicts between information sharing and propriety in EC webpage, firstly, we consider the
simplest-conflicts between owner of webpage and invader.

First, Time, in the model of conflicts between information sharing and propriety in EC webpage, time can be supposed the moment after webpage be invaded and before invader be accused.

Second, Players, in the model, it consider two players firstly, they are owner of webpage and invader respectively.

Thirdly, Options, An owner of webpage has three tactics: public, public partly and no public. An invader of webpage has three tactics also: invade all, invade partly, no invade. Different tactics have different costs and benefits.

Forth, Outcomes, according to above assumptions and definitions, we can conclude that there exist 16 outcomes set, they are shown as tabulation 1.

In tabulation 1, binary number is 1100 in fourth row, its decimal number is $1\times2^0+1\times2^1+0\times2^2+0\times2^3=3$. The behaviors of the row imply that owner of webpage takes the tactics of “public” and “public partly” (11), and invader of webpage takes the tactics of “no invade” (00). Binary number is 1001 in tenth row, its decimal number is $1\times2^0+0\times2^1+0\times2^2+1\times2^3=9$. It means that owner of webpage takes the tactics of “public” (10) and invader of webpage takes the tactics of “invade partly” (01). The explanations of remainders rows in tabulation 1 are the same as fourth row and tenth row do.

In all 16 outcomes of tabulation 1, some outcomes must be deleted, as they are unfitted to logical reasoning or preference selections. For example, outcome 7(1110) means owner of webpage takes the tactics of “public” and “public partly”, and invader of webpage takes the tactics of “invade”, obviously, the logic is impossible for owner of webpage as we assume that player cannot select the tactics of “public” and “public partly” simultaneity, outcome 7 is infeasible, it should be deleted. The same as outcome 7, outcome3 (1100), outcome4 (0010), outcome8 (0001), outcome11 (1101), outcome12 (0011), outcome13 (1011), outcome14 (0111), and outcome15 (1111) are infeasible. The remainder 8 outcomes are feasible outcomes, which shown as tabulation 2.

Fifth, Preference vectors

By studying the behaviors of two players time and again, we confirm preference vectors of owner and invader of webpage; they are shown as tabulation 3 and tabulation 4.

For owner of webpage, outcome 1 (1000) is the best, as owner of webpage takes the “public” tactic (10), and invader take the “nothing” tactic (00), then owner of webpage can get all revenues from webpage. The following are outcome 2, outcome 9, outcome 10, outcome 5, outcome 0 and outcome 6. Outcome 5 is the worst for owner of webpage, because it mean owner of webpage takes “public” tactic, and invader of webpage takes “invade” tactic. As owner of webpage, preference vectors of invader of webpage are outcome 5, outcome 0, outcome 6, outcome 9, outcome 10, outcome 1 and outcome 2.

<table>
<thead>
<tr>
<th>TCG</th>
<th>outcomes of owner of webpage</th>
<th>TCG</th>
<th>outcomes of invader of webpage</th>
</tr>
</thead>
<tbody>
<tr>
<td>①public</td>
<td>0 1 0 1 0 1 0 1 0 1 0 1 0 1</td>
<td>①invade</td>
<td>0 0 0 0 1 1 1 0 0 0 0 1 1 1 1</td>
</tr>
<tr>
<td>②public partly</td>
<td>0 0 1 0 0 0 1 1 0 0 1 0 1</td>
<td>②invade partly</td>
<td>0 0 0 0 0 0 0 0 0 1 1 1 1 1 1</td>
</tr>
<tr>
<td>Decimal number</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TCG</th>
<th>feasible outcomes of owner of webpage</th>
<th>TCG</th>
<th>feasible outcomes of invader of webpage</th>
</tr>
</thead>
<tbody>
<tr>
<td>public</td>
<td>0 1 0 1 0 1</td>
<td>public partly</td>
<td>0 0 1 0 1 0</td>
</tr>
<tr>
<td>Invade</td>
<td>0 0 0 1 1 0 0</td>
<td>Invade partly</td>
<td>0 0 0 0 0 1 1</td>
</tr>
<tr>
<td>Decimal number</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TCG</th>
<th>owner of webpage</th>
<th>TCG</th>
<th>invader of webpage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>0 0 1 0 1 0 1</td>
<td>Public partly</td>
<td>1 1 0 0 0 1 0</td>
</tr>
<tr>
<td>Invade</td>
<td>1 0 1 0 0 0 0</td>
<td>Invade partly</td>
<td>0 1 0 0 1 0 0</td>
</tr>
<tr>
<td>Decimal number</td>
<td>6 10 5 0 9 2 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4 Preference vectors two in conflict

<table>
<thead>
<tr>
<th>Tactics</th>
<th>owner of webpage</th>
</tr>
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<tbody>
<tr>
<td>Public</td>
<td>1 0 1 0 1 0 0</td>
</tr>
<tr>
<td>Public partly</td>
<td>0 1 0 1 0 0 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tactics</th>
<th>invader of webpage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invade</td>
<td>0 0 0 0 1 0 1</td>
</tr>
<tr>
<td>Invade partly</td>
<td>0 0 1 1 0 0 0</td>
</tr>
</tbody>
</table>

| Decimal number     | 1 2 9 10 5 0 6     |

(2) Stable analysis

To analysis easily, the paper makes the following symbol assumptions: N is non-equilibrium outcome, E is equilibrium outcome, r is rational stable, s is sanctioned punishment stable, u is unstable, v is punishment stable.

Combine tabulation 3 with tabulation 4, it can draw the results of tabulation 5. There exist three sequentially sanctioned stables in tabulation 5. They are outcome 6 of owner of webpage, outcome 5 and outcome 10 of invader of webpage. Take the example of outcome 10 of invader of webpage, outcome 2 is its unilateral improvement (UI), for owner of webpage, outcome 2 exists UI, it is outcome 0, outcome 0 is inferior to outcome 10 for invader of webpage, therefore, outcome 10 is sequentially sanctioned stable for invader of webpage, the same as others. For owner of webpage and invader of webpage, outcome 4, outcome 8, outcome 0 and outcome 1, outcome 2, outcome 0 don’t exist UI, therefore, they are rational stable. For owner of webpage, outcome 0 is UI of outcome 2, for invader of webpage, outcome 0 don’t exist UI, and outcome 2 is unstable for owner of webpage. The same as outcome 2 of owner of webpage, it can draw the conclusions that outcome 1, outcome 5, outcome 9, outcome 10 for owner of webpage and outcome 4, outcome 6, outcome 8, outcome 9 for invader of webpage are unstable all.

By stable conditions, only when a certain outcome is stable (r, s or v) for both parties, the outcome can be called equilibrium, or else, it is called non-equilibrium. Obviously, only outcome 0 is rational stable for owner of webpage and invader of webpage, therefore, there exists equilibrium in the conflict, which is no public for owner of webpage and no invades for invader of webpage. That means if no exterior constraint, it is impossible for EC.

Table 5 Stable analysis

<table>
<thead>
<tr>
<th>Owner of webpage</th>
</tr>
</thead>
<tbody>
<tr>
<td>N N N N E N N N</td>
</tr>
<tr>
<td>R r s u u r u u</td>
</tr>
<tr>
<td>Preference vector</td>
</tr>
<tr>
<td>UI</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Invader of webpage</td>
</tr>
<tr>
<td>r r u u s r u u</td>
</tr>
<tr>
<td>Preference vector</td>
</tr>
<tr>
<td>UI</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

B. Model 2 of CA

In model 1, as game behaviors exist between owner of webpage and invader of webpage, it is inevitably to produce between owner and invader in EC. The result of conflict is to lead to the failure of EC if there aren’t any exterior restrictions. As EC do exist in practices, it means that model 1 has some bugs, therefore, it should revise model 1.

In reality, to coordinate the relationship between owner and invader of EC effectively, it general need neutral constitute (such as court) to coordinate. As country endow court power, neutral constitute can adopt force, any parties should obey it. To fulfill its duty, as hypothesis 2, mediator can take three tactics, they are “coordinate”, “punish” or “nothing” respectively. The remainders are the same as model 1.

In model 2, there exist $2^{6}=64$ outcomes totally, as the feasible tactic of mediator taking is “coordinate” or “punish” or “nothing”, and the feasible tactics combination of owner and invader of webpage have 9 totally in model 1, which decimal numbers are 0, 1, 2, 4, 5, 6, 8, 9, 10 in model 1 respectively. By permutation, we can conclude that there are 27 feasible outcomes in model 2.

As model 1, by studying the players in conflict time and again, it draws preference vectors of three players. Eventually, it can obtain four equilibriums of model 2, they are outcome 0 (000000), outcome 20 (001010), outcome 21 (101010) and outcome 22 (011010) respectively, which are stables (r, s or v) for three players, and the remainder outcomes exist one unstable u at least.

In four equilibriums of model 2, equilibrium 0 (000000) denotes no-EC, which is unfitted the topic of the paper, therefore, it is an inferior equilibrium. Equilibrium 20 (001010) is the best equilibrium, because...
mediator takes the tactic of “nothing” in the conflict, and owner of webpage public its webpage, and invader takes tactic of “nothing”, but it is inconsistent with the result of model 1, therefore, it is an inferior equilibrium also. As mediator takes the tactic of “coordinate” or “punish”, which makes owner of webpage public its webpage and invader doesn’t invade webpage, obviously, equilibrium 21(101010)and equilibrium 22(011010)are fitted to the practical operation of EC, therefore, they are the ultimately equilibriums of conflicts between information sharing and propriety of webpage in EC.

VI. CASE STUDY

To verify prior theoretic outcome, the paper will make case study. In webpage disputation cases recently, Ruide Company accuses yubing city Cuiping district eastern information service Ltd webpage tort case is though as the first case for Chinese webpage tort, it has more social impact in domestic and aboard. Therefore, the paper explain theoretic outcome by the case.

Since, Ruide(group) company begun to set up website named “Ruide online” in Internet. Since February 1998, Ruide company design and revise webpage content, add “see china search”, “online library” etc, and load new webpage to its website, and the newest webpage has special sign such as “the newest”, “see china search” etc, the webpage has often been reported by domestic news media. Since the end of December 1998, Ruide Company found that webpage content of an “eastern information company” website has part similarly content with “Ruide online” webpage. In 4 January 1999, Ruide Company applies Beijing public notary to notarize these two WebPages, and load these two WebPages to software by compute with Internet in 5 January 1999 and print them on papers as original content of notary’s certificate.

Compare with these two WebPages, colors, words and part pictures aren’t similar completely, but there exists the same picture on “the newest”, “see china search” etc. In eastern company webpage, state “made by Jiangsu enterprise”, copyright 1998 by eastern information company etc, the telephone number, fax, address etc are the same as yubing city cuiping district eastern information service Ltd. Ruide Company accuse to court by putting eastern company as defendant. By trial, court judges that eastern company should undertake invade duty by law. It should apologize to Ruide Company and compensate economic damage for Ruide Company.

The case demonstrates that, in EC, it do exist conflicts between information sharing and propriety of webpage, but the conflicts can be coordinated. By court coordinate, Ruide Company and Eastern Company are satisfied, which demonstrate the correct of model 1 and model 2 of CA.

VII. CONCLUSIONS AND FUTURE WORKS

EC enterprise strength coordinate management on conflicts between information and propriety of webpage is not only the need to maintain and improve competition for EC enterprise, but also the need to fresh EC market environment and spur fair, order and legal development of EC. It not only impacts the development of EC enterprise, but also impacts the development of national and global EC.

By literatures review, modeling and case study, the paper explores conflicts between information and propriety of webpage in EC. The result indicates that the conflicts are inevitably, but as long as it has coordinator, it can coordinate the conflicts, which provide theoretic foundation for the making of law on EC. However, there exists much need to be studied further. For example, the conflicts between information sharing and propriety of webpage in EC is benefits conflicts in essence, how to balance benefit between owner and invader of webpage in the conflicts and how to prevent the conflicts are a valuable research topic. In future law-making on EC, how to make corresponding law by features of conflicts between information sharing and propriety of webpage in EC, it is also needed to be studied further. In conflicts between information sharing and propriety of webpage in EC, both two parties of conflicts and coordinator, face information asymmetric, how to solve the information asymmetric in the coordinate process of conflicts
between information sharing and propriety of webpage in EC is a research topic needed to be studied further.

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Shibin Su, graduated from school of management in Xi’An Jiaotong University, Postdoctor of School of Management in Xiamen University. In March to June 2009, he made cooperation research with Associate Professor Benjamin Yen in HKU. Now, he is a teacher of School of Management, Fuzhou University. He is a reviewer of European Journal of Operational Research and International Journal on Knowledge based Systems. He was supported by the National Natural Science Foundation of China under Grant 70902041, by China Postdoctoral Science Foundation (20080430105) and National Education Humanity Society Science project of china under grant 08JC630072. Moreover, he takes part in three NSFC projects, one great project of National Education Humanity Society Science key research foundation, one the Second foundation project of Xi’an Jiaotong University 985 project and one NCET (0000-X07173), and obtain the second awards of Shaanxi High Education School Science Technology by the second Finishers. He has published more than thirty papers, including nine papers in National Natural Science Foundation of China key journal such as Systems Engineering-Theory & Practice, Chinese Journal of Management Science, Science Research Management, R&D Management, Science of Science and Management of S & T, and 6 papers indexed by EI. His current research interesting are EC, knowledge management, intellectual property management.