Consulting in Electronic Commerce

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Abstract: Economic development of electronic services provide advice and many agents of existing referral systems to recommend and provide products, information and customized views of the community through a personalized interaction in real time. Distributed systems of autonomous agents are becoming increasingly important in electronic comet because the basic decisions of agents advice on trust and reputation are taken in a similar way human society. If these decisions will be as a real consumer protection, when new aspects of online consumer legislation will become useful information in advice and consulting of electronic commerce.

Keywords: advisory agents; recommendation systems; electronic commerce

Introduction

The technological innovation and the decisive factors in businesses determine major changes in the way in which the organizations cooperate and compete in the global market. Any electronic commerce system has to meet the beneficiaries' needs and those of its users better than competition in order to survive. The success of electronic commerce is based upon the combination of informatics and commerce technologies, making up a background which invites the users, being prospective beneficiaries, to involve their businesses in this new field. The use of software agents in the structural and operational modeling of electronic market has

grown up and will grow up due to the substantial power of economic market automation. In the centre of such a market there is noticed certain ontology of the domain and services modeling which was built up through the mediation of agents.

We can consider the use of software agents in the electronic market from two points of view: that of the customer and that of the supplier. From the customers' point of view, the better agents who are more useful, for the purposes of utility are those providing customized services, who learned the preferences of a certain customer. Certain customers wish to receive advice in relation to the usage of a certain product, to the possible alternate usages, and an agent may provide such information by applying filters by which the overloading of information for the customer is avoided.

A customer may be informed by an agent about a special price of a product which could be of interest, and, in short time, the piece of information could propagate a buying transaction of the product. An agent as well by negotiation techniques, on behalf of the customer, may purchase the product by rendering intermediation services during the advisory process. From the supplier's point of view, in the latest years, the customers have been considered as long term "assets" of the business and not simple purchasers outside the organization. The recommendation systems were converted into business tools as companies realize that it is simpler and cheaper to have devoted customers, than attracting new customers, and thus they focus on establishing long-term relationships and on discovering prospective customers. The researches show how the customers „buy" promises first, as potential solutions to their problems. If these promises correspond to the reality they wish, the organization will become credible. This is the reason for which the site has to be always prepared to provide safety and stability through granted consultancy and to be able to develop long-term relationships.

Which is the Current Condition of the Consultancy in Electronic Commerce?

Agents and Recommendation Systems

Generally, the recommendation techniques are customized shares of a site when incorporated into them, as they help the site itself in adjusting to each customer. The recommendation systems, although based on filters and selections, own a different architecture; there are differences between B2C commerce systems and the decision support systems in the supply chains.

In the light of consultancy, the techniques in artificial intelligence in B2C market were rendered evident mainly for selecting the product in recommendations, in advising the customers, in the automated generation of answers, of decisions concerning the price fixing. Artificial intelligence is used for advising the users concerning the goods that they want to examine or to buy on the Internet.

This type of advisory is shown in various types of recommendation selections and approaches. The products may be recommended based upon a top made up by the sellers, on consumers' demographic criteria, or following an analysis of the consumer's past behavior as a prediction of the future purchasing behavior. The recommendation forms shall include suggestions for products, shall provide customized information about products, community opinions, including criticisms.

Table 1. Advisory agents of purchasers in electronic commerce

Agent/Address Of The Site	**Advisory Type For Purchasers**
BARGAIN DOG Http://www.bargaindog.com	Alert online agent for services sales
BAR POINT Http://www.barpoint.com	In exchange for introducing the barcode the agent supplies specific information related to product, including the contact producer, information about the comparison of the price to other products and the reviews of the production reports.
BIG COMPARE Http://www.thebigcompare.com	Supplies meta-searches for shopping
CANGETIT Http:// www.cangetit.com	Service placing products for the purchaser at the price mentioned by the purchaser
DASH Http://www.dash.com	Personal shopping assistant offering discounts from selected online merchants
DEAL TIME Http://www.dealtime.com	Searches for the retail merchants and classifies for the best price
MYGEEK Http://www.mygeek.com	Helps the user the find the products and compare their prices
SALES CIRCULAR Http://www.salescircular.com	Compares the prices and the facilities for the retail products in his own shops

PERSONAL LOGIC Http://www.personallogic.com	A tool allowing the consumers to narrow the list of the best products meeting their needs. The system filters the products from a certain category depending on the specific characteristics exposed by the consumer. An agent returns an ordered list of products meeting the most pretentious requirements.
BARGAINFINDER Http://bf.cstar.ac.com	It is the first virtual shopping agent establishing the price of a user of musical CDs by examination. Parallel to the examination there is used the architecture of meta search engines such as MetaCrawler.
FIREFLY Http://www.firefly.com	This recommendation system manages through an ACF approach based upon "word of mouth" to provide solutions to the consumer by using a collaborative filtering mechanism. The system is used for musical products and books.

Current Directions of Consultancy by Recommendation in Electronic Commerce

The recommendation systems are used by a greater number of sites in order to help the purchasers. The products may be recommended based upon a top made up by the sellers, on consumers' demographic criteria, or following an analysis of the consumer's past behavior as a prediction of the future purchasing behavior.

The recommendation forms shall include suggestions for products, shall provide customized information about products, community opinions, including criticisms. The automated recommendation systems represent specialized data mining systems having been optimized more for their interaction with the consumer. They were designed for a customized interaction in real time with consumers. Consequently, they focus more on learning algorithms in real time than on the construction and execution model.

Recommendations improve the electronic commerce in three large directions:

- turning a web navigator into a purchaser;
- increase of the sales volume through cross-sell (a system may suggest additional products based upon the products existing in the shopping basket);
- building up loyalty.

Various approaches were applied in order to obtain correct and efficient recommendations. The used technologies use databases examinations until a large range of data mining techniques, learning machine and evolutionary strategies.

Development Directions of Consultancy Systems in Electronic Commerce

The individual buying a product feels a psychological discomfort sometimes or often as he has had to choose among items each having its advantages and finally he is not sure about the choice he has made. So, against his will he comes to make an assessment after having purchased the respective items.

In order to reduce this discomfort caused by the nonconformity between his well thought-out choice and the best choice that he could have made, the current consultancy services need optimization. The customers need positive interlocutor agents, good traders characterized by honesty, patience, humanism, persuasion, optimism, tact and initiative.

The large scale use of today Cybertrade, shows that many participants do not consider the legal matters involved by a certain activity too important. Concerning the electronic commerce, it is very likely that the parties are not located in the same jurisdiction and they will communicate through a non-direct communication line so that several sets of national laws will be involved in any dispute.

It is possible that these laws are not harmonized when enforced in relation to the dispute and the final conclusion is not that expected by parties. Which is the situation of Cybertrade? Firstly it is about a very new commerce area, so that there are very few precedents or even none from certain points of view.

In case of a dispute, while it is possible to identify the blamable parties, it will be difficult to appeal to legal procedures as the parties are located in different jurisdictions with different laws. The complexity of legal problems which could appear on the Internet shows that the Internet is a structure lacking legal regulations. How is the electronic consultancy reflected in the light of the agreements and abusive clauses? The consultancy agents do not help the purchaser to this end, at present. What is necessary, is represented by an international regulation of the Internet and of electronic commerce, but introduced in a clear manner so that the intelligent agent could supply and announce the problem to the merchant in an accurate way.

The Council Directive 85/577/CE to protect the consumer in contracts outside commercial premises consolidates the existing protection of consumers in essential

fields where numerous claims have been filed in the latest years, such as the under pressure sale and the involvement of abusive clauses in contracts. The Directive imposes on the merchant in the electronic space the obligation to provide to the consumer a clear set of information allowing him to choose being fully aware (for instance, the main characteristics of the product, the geographical address and the identity of the merchant, the price with all fees included, all the additional transportation, delivery costs or those related to the postal expenses), norms concerning the delivery and the transfer of risk to the consumer, the setting up of a thinking period in which the consumer may change his opinion, a list of the contractual abusive clauses forbidden in any situation.

At the level of recommendation systems, the advisory from the part of consumer protection is almost absent. A viable explanation would be that a certain legislation so recently approached has not been well apprehended yet. A virtual store respecting itself and wishing to build customer loyalty could provide consultancy from this legislative point of view.

The European Commission launched on the 5th of June 2009 eYouGuide, a new online tool providing practical advice concerning the digital rights of the consumers in compliance with EU legislation.

When connected to the internet, the European consumers have the following rights: to obtain clear information concerning the prices and the conditions before making a purchase; to decide if and how their personal data are treated; to receive the product within 30 days since the purchase date; a „reflection" period of at least 7 business days after having made the purchase, during which he may change his mind; a warranty of at least 2 years for purchased products; protection against unfair sellers, against contractual abusive clauses and unfair commercial practices.

Conclusion and Future Work

At computerized level, the advisory coming from the consumer protection is almost absent. A viable explanation would be that a certain legislation so recently approached has not been well apprehended yet. At present there is a legislative tool allowing the acquisition of knowledge necessary for legislative consultancy offering to online users a trust ratio for a merchant. The trust models, SPORAS, REGRET, TRAVOS, and FIRE could be improved by this legal component relating to clauses and abusive practices.

Thus, adopting the Mui's typology which unifies the concepts about reputation used by researchers in the distributed artificial intelligence, to the reality of electronic commerce, also the reputation propagated by the most frequent abusive clauses met in electronic transactions may be introduced in order to calculate a trust ratio based on reputation. A virtual store or an auction site respecting itself and wishing to build customer loyalty could provide consultancy from this legislative point of view even at the level of European unit for the beginning, being developed subsequently depending on the consumer's reaction, in the entire Cybertrade. As the laws concerning the electronic commerce is consumer's protection legislation, a legal advisor agent or a consultancy agent taking into consideration the matters of the new legislation in his recommendations, would manage to protect his consumers and to gain their trust.

References

Huynh, T. D.; Jennings, N. R. & Shadbolt, N. R. (2004b). *FIRE: An integrated trust and reputation model for open multi-agent systems.* In Proceedings of the 16th European conference on artificial intelligence(ECAI) (pp. 18–22).

Jango, Site. (Http://www.jango.com) World Wide Web.

Mui, L.; Mohtashemi, M., & Halberstadt, A. (2002). *A computational model of trust and reputation*. In Proceedings of the 35th Hawaii international conference on system science. (pp. 280–287).

Mygeek Site.(Http://www.mygeek.com) World Wide Web.

PersonalLogic Site.(Http://www.personallogic.com) World Wide Web.

Sabater, J. & Sierra, C. (2001). *REGRET: Areputationmodel for gregarious societies.* In Fourth workshop on deception fraud and trust in agent societies (pp. 61–70). Montreal, Canada.

Sabater, J. (2003). *Trust and Reputation for Agent Societies*. PhD thesis, Universitat Autònoma de Barcelona.

Sales Circular Site.(Http://www.salescircular.com) World Wide Web.

Tache, F. L. (2009). Advice in electronic commerce. In *Proceedings of Soft Computing Applications, SOFA '09*. 3rd International Workshop (pp. 111-118).

Teacy,W.T.L.; Patel, J.; Jennings, N.R. & Luck, M. (2005). *Coping with inaccurate reputation sources:Experimental analysis of a probabilistic trustmodel.* In proceedings of fourth international joint conferenceon autonomous agents and multiagent systems (pp. 997–1004). Szeged, Hungary.

Zacharia, G. & Maes, P. (2000). *Trust management through reputation mechanisms*. Applied ArtificialIntelligence, 14(9), 881–908.

Amazon Site. (Http://www.amazon.com) World Wide Web.

BargaindogSite.(Http://www.bargaindog.com)World Wide Web.

Bargainfinder Site .(Http://bf.cstar.ac.com) World Wide Web.

Big compare Site.(Http://www.thebigcompare.com) World Wide Web.

Cangetit Site.(Http:// www.cangetit.com)World Wide Web.

Dash Site. (Http://www.dash.com World Wide Web.

Deal time Site. Http://www.dealtime.com World Wide Web.

eBay Site. (Http://www.ebay.com) World Wide Web.

Firefly Site. (Http://www.firefly.com) World Wide Web.