

An Economic Analysis of Consumer Right Protection in E-Commerce: Testing Efficiency Using the Principles of Contract Law

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Abstract - The internet is hailed as the virtual abode of men characterized by the ability for subjects to rule and be ruled simultaneously, with each individual being the custodian of this kingdom of wires and diodes. Recent technological advancement has enormously affected the internet and increased the number of users tremendously. While the ‘milk and honey’ provided by the convenience of the internet is enjoyable, it has also brought about certain discomfort to some people. E-commerce being one of the most beneficial aspects of the use of internet has, just like any other phenomenal sector of commerce, got its own setbacks. Previous literature has discussed different ways of dealing with consumer right protection which has been a major issue of discussion in this digital era. This paper attempts to review the various approaches proposed by existing literature and then suggest alternative remedy for consumer-merchant issues in E-commerce using an economic analysis in the context of contract law liability theory. It also devices a quantitative Risk-Benefit Analytic tool to be used by e-commerce platforms, regulators and courts in analyzing the risk involved in certain online transactions in the case where non-performance leads to the loss economic opportunity of a user.

Keywords - Economic Analysis, Consumer Protection, E-Commerce, Risk Analysis, Contract Law.

I. INTRODUCTION AND LITERATURE REVIEW

E-commerce is a way of performing economic activities such as buying and selling, insurance, hotel booking, car rentals, holiday packages, legal services, accounting etc. , where the consumer and seller(including service providers) conduct the trade through internet, phone or message (i.e an electronic medium). This paper puts more emphasis on trade

activities conducted through the internet. Eid ,M.I(Eid ,2011) shows that E-commerce in general provides a way to carry out economic activities which includes business to business (B2B),business to consumer(B2C) and consumer to consumer (C2C). Not only does e-commerce provide a wider range of products, but also brings about the provision of competitive prices compared to the brick and mortal counterpart.

Jahankhani et al, asserts that the internet would be responsible for a new era of participatory democracy and revitalization of the public sphere. His paper titled 'the impact of law on e-business practices in the EU' goes ahead to state, as I quote " At the end of the debate all is in agreement that promoting e-commerce within this environment will protect the public, regulate competition, promote a business friendly environment, and maintain the European social model'.

Even though the internet provides a business friendly environment as described by Jahankhani et al, like every kind of trade there are disputes of non-performance, price discrimination, breach of contract and privacy issues that arise from consumer-seller interactions. The internet being a virtual space that provides a virtual shop-window (Jahankhani et al) makes the settlement of these disputes even more difficult for regulators and authorities. Aside non-performance there some other major types of E-commerce issues (Gupta et al, 2016) that pose threat to the industry.

1) Unauthorized access

This is where a hacker gains access surreptitiously to a user's data through malicious softwares and modifies or copies the data for secondary use.

2) Denial of service (DOS)

This involves spamming and viruses. Online attacker targets a user's computer or network and bombards it with ubiquitous host of emails; viruses self-multiply and spread causing harm to the user's computer or other adverse effects on the users.

3) Theft and fraud

Fraud is when false information is used to lure online users to make payments to false sellers who disappear after payment is made or provide different products other than the one agreed upon by both parties. Stealing of consumers'

data to be used for purposes aside the performance of the terms fo the trade is considered theft.

According to Fung (Fung et al, 2009), trust is very essential in convincing consumers to participate in online trade especially in uncertain environments (Chellappa, R.K,2001). Trust can be built in E-commerce when consumers feel safe in the emerging industry. In the brick and mortar shops for example, buyers usually know the location of sellers, there is a face to face interpersonal trust developed between the two parties and the terms of the trade are explicitly stated either verbally or in written contract.

However, in online transactions parties do not have a physical platform for communication. Trust is a mental shortcut that consumers can use when trying to reduce the uncertainty and complexity of the nature of transaction in e-commerce, nevertheless the probable risk is higher in e-commerce mainly due to the unawareness and negligibility of physical interactions (Gupta et al,2016).

Most transactions online do not have explicitly stated terms of trade which may result in disputes in the occurrence of non-performance on the side of the merchant. Gregoire (Gregoire et al,2015) , suggests that in case a dispute arises in an online transaction, parties concerned may resolve in accordance with the agreement both sides have stipulated in trading contracts online.

The parties could also settle disputes through arbitration, the ombudsman may come up with resolution according to the regulations in legislation. The question is wether international electronic transaction's disputes are to be resolved by merchant's country of origin (Kaustia and Rantapuska, 2015) or consumer's country of destination (Alexandra and. Cristina, 2013). (This discussion isn't the focus of this paper).

The consumer ,as stipulated by 'The guiding principles in the consumer right protection', by the UN Assembly's

Resolution ,is entitled to the right to choice, right to safety, right to be heard, right to information, right to consumer education, right to satisfy the basic needs, right to quality and right to redress.

The international law on electronic trade should be based on the principles stated by Kirillova (Kirillova et al,2016), namely, the equality of the participants of the interactions that the principles regulate, the freedom of contract, unimpeded commercial activity, the free movement of goods, services and finances across the globe. Kirillova et al, goes ahead to shine some light on the guaranteed legal protection of the rights of the participants of electronic trade suggesting that parties in an electronic transaction cannot doubt its reality and binding character due to the fact that it was transacted online. This shows that an online transaction is bound by the general legislation on contract laws and therefore needs to be enforced.

II. ELECTRONIC CONTRACT AND LEGAL ENFORCEABILITY

As discussed in earlier sections, since e-commerce involves the invitation to an agreement by the merchant through advertisement and acceptance to purchase by the consumer, a contract is invoked either implicitly or explicitly. Due to the nature of electronic transactions as stated by Kirillova et al, most consumers do not see the contractual effect on online transactions and therefore when there is a dispute may not pursue the necessary legal action. Technological advancement has introduced digital signature also called e-signature for electronic transactions as a form of binding tool for e-commerce contracts.

E-signature can be used to sign contracts, provide identity for access or to provide authenticity of an electronic distribution as indicated by Gupta et al. Payment intermediaries such as micro-payments, digital cash, etc. may also serve as escrow agents or third party confirmation

of online transactions. These payment intermediaries try to protect their users to increase their reputation which in turn boosts the consumers' trust in using their services.

With the ability of fraudsters to forge signatures this paper proposes E-fingerprint as a more authentic way of sealing an online contract. The principles on contract law apply as soon the online contract is signed. Even when a written contract isn't signed between the two parties in an e-commerce transaction , the fact that the seller agreed to sell and buyer agreed to buy constitutes a promise to be delivered by a promisor(the seller) to a promise (the buyer) .

On the other hand the buyer(promisor) promises to buy something from the seller (promisee). When the agreement is 'payment before delivery' the buyer induces the seller by paying first. With the 'payment on arrival' option the seller induces the buyer by sending the product in the hope of getting paid when the goods arrive. These acts of bargain and inducement by consideration meet the underlining requirements of contract law which therefore makes the interaction enforceable.

When a consumer cancels an online contract the merchant would have to according to restitution refund the money before the buyer returns the product. As shown in earlier sections, the internet is a virtual space hence it is very difficult for merchants to chase buyers who fail to return the goods after contract is cancelled and the money is refunded. McCue(McCue,Nov,2000), thinks that since the usual net cost of typical purchase on the internet is relatively low it isn't economically viable for merchants to be chasing buyers through the courts since transaction costs would exceed the value of the products.

Likewise, when a seller receives the payment and breaches the contract by either

- 1)non-performance
- 2)sending faulty goods or

3) sending goods late

There are three ways of redress namely

- 1) Reimbursement: paying back the money already paid by buyer
- 2) Providing an alternative, which needs renegotiation?
- 3) Awarding expectation damages, depending on the situation

Usually economic efficiency recommends renegotiation if transaction costs aren't too high.

The advancement of big data analytics attempts to use profile-based consumer dossier consisting of consumer's previous purchases, visiting of other websites, miscellaneous web activity, credit rating, insurance subscriptions, location through IP address etc. to assess costumer's purchasing behavior which helps merchants to decide on dealing with them. This technology has however raised piles of privacy issues which will not be discussed in this paper.

The regulation on internet transactions should require sellers' and buyers' identity to be verified by a third party being the e-commerce marketplace, online trade organizations and unions, online financial intermediaries such as digital payment and credit cards or government regulators monitoring online trade. Nevertheless, most consumers wouldn't feel at ease with the mention of government monitoring. Establishment of online trade unions will provide incentive for merchants to perform due to checks and balances exerted by the members of the union. Also, merchants would join these unions as a means of showing their reliability to costumers.

Vicarious liability principle can also be introduced in e-commerce whereby credit card companies, friends and family can guarantee for the parties in online trade (consumers and sellers)

in case of non-performance. This will provide extra

mantle of trust on both sides of the transaction.

Consumers have the right of restitution where they can terminate a contract within a specific period of time. The Distance Selling Directive as indicated by Sidkin and Elliot(2001) defines the period as 'working days' which means all days except Saturdays, Sundays and public holidays. Jahankhani et al, seconds Sidkin and Elliot's point by explaining that global businesses dealing with consumers in Europe should consider the risk of conducting business online due to the fact that they would have to abide all the laws in each EU state; meaning these merchants need to take account of the different public holidays in the EU states as well as the weekends. This directive makes international online trade more cumbersome, raises both information and transaction costs and therefore isn't economically efficient.

III. METHOD

In this paper, an economic analysis of the principles of contract law is used in analyzing non-performance and dispute resolution in E-commerce transactions and provide recommendations for curbing the adverse effects on parties involved; especially consumers right protection. Based on assertions made by existing literature in this regard this paper conducts a detailed examination of the underlying laws governing electronic transactions. A theoretical experiment is tested through scientific abstract conceptualization. A structure for e-commerce regulation in terms of contract enforceability and compensation remedies for breach is devised.

IV. E-CONTRACT BREACH AND REMEDY : AN ECONOMIC APPROACH

In the previous sections it's been indicated that E-commerce has the advantages of expanding the global inventory, providing a wider range of products to consumers, creating a more convenient way of advertising for merchants and presenting more competitive prices to consumers. We

can also infer that due to the distance and virtuality of transactions it is difficult to resolve consumer-seller disputes that arise from e-commerce. Some regulations attempt to give rights to consumers to terminate contract when there is non-performance on the part of the sellers. Different scholars have argued about how the enforceability of these regulations would affect the trust of consumers and reduce the adverse effects on electronic trade. Anggraeni (Anggraeni et al , 2018) asserts that the laxness in implementing the contents of agreement without any justifiable reasons in accordance with law and regulation can be considered non-performance and that any agreement made by treaty must be implemented by the contents of the agreement. Contract law provides an expedient framework for the resolution of e-commerce dissonances. Consider the following scenario.

On 20th April, Mr. Ben, an engineer buys an electronic component on EngBuydotcom which costs \$80 online to be used to complete the prototype of his design to be delivered on 25th April. Ben needs this prototype to be presented on 27th April, at an investors' meeting which happens once a year. He has applied several times before being given the chance to present this time around.

Monica, the engineer of the biggest competitor of Ben's company has designed a similar prototype that is slightly different from Ben's also to be presented to the same investors on the same day ;this makes Monica's design a complete substitute to Ben's. The investors are going to award the selected project with an investment of \$50,000. And Ben and Monica are the only presenters at the meeting.

On 25th April, due to logistics issues Nancy, the online merchant from whom Ben buys the component announces that she can't deliver the component within the stipulated time and needs three more days after the agreed date for the component to arrive; thus on 28th April.

According to the distance selling directive Ben can withdraw the contract within five working days. If he doesn't have an alternative source of buying and receiving the component within two days he'll miss the chance to present the project to the investors. However, 26th April is not a working day, so the contract cannot be terminated as it's only workable on working days according to the directive.

Ben has already booked his flight and hotel for the event which together cost \$1000. He has invested \$10,000 in designing the prototype. Ben initially interacted with Susan, another merchant on EngBuydotcom who sells the same component for \$120 to be delivered on the same day as Nancy ; he doesn't buy from Susan due to his later interaction with Nancy.

From the scenario above:

What laws have been infringed? Who is liable for damages that may arise? What kind of legal damages should be awarded ? What are the transaction costs involved? Which party is in the position to prevent harm at least cost? What does economic efficiency require?

In the scenario above, there are three parties involved in the transaction, namely Ben(buyer) , Nancy(Seller) and EngBuydotcom(the e-commerce platform).

Contract law applies in this case because there is an agreement based on a bargain with a promise to deliver and an inducement of a consideration.

Between EngBuydotcom and Nancy ; since the platform isn't directly dealing with consumers and the cost of monitoring each transaction on the part of EngBuydotcom is extremely exorbitant , according to economic efficiency the merchant is the least-cost risk-bearer .

Between Ben and Nancy; the buyer induced the seller by first making payment online so the party that didn't perform is Nancy who by her own logistics problem failed to deliver

on time. Ben could inform Nancy about the urgency and importance of the component and the possible damages that could be incurred if delivery was delayed, before making the purchase.

Only a rational seller with the capacity to perform within the stipulated statutes of such contracts would engage knowing the amount of risk involved. This paper suggests that online platforms should provide an option for buyers to indicate highly prioritized and urgent orders. In addition, the law should induce buyers to disclose the expected use of a product and its expected benefits to sellers during an online transaction. This will provide merchants with the option of accepting or refusing such venturesome orders.

Ben's chance of getting selected by the investors is 1/2 hence his expected benefit from the investment is

$$0.5 \times \$50,000 = \$25,000$$

His cost of making the prototype is \$10,000

He booked hotel and flight, thus his Reliance for the event is \$1000

He paid \$80 to Nancy for the component

If he had bought the component from Susan he would have paid \$120

The distance selling directive and legislation governing the electronic trade enforces restitution which is the reimbursement of \$80 to Ben regardless of his expectation damages. This paper argues that expectation damages should be awarded provided the consumer indicated the urgency and importance of the good or service and the expected benefits to the consumer.

In that case Ben should be awarded

$$\$25000 - \$10000 = \$15000$$

of expectation damages after reimbursement of \$80

$$\text{Totaling } \$15000 + \$80 = \$15080$$

If he had bought it from Susan his opportunity cost would have been

$$\$120 - \$80 = \$40$$

Making his expectation damages

$$\$15080 - \$40 = \$15040$$

If Ben was able to order from Susan and complete the project ,

Nancy would be liable to only \$40 of Ben's opportunity cost .

If Susan cannot perform and rejects Ben's order, Nancy will have to bear the full expectation damages of

Expected Benefit + Restitution + Reliance

$$\$15000 + \$80 + \$1000 = \$16080$$

Even though the contract isn't explicitly aleatory in nature , the principle of loss of economic opportunity still applies due to the loss of economic benefit on the side of the consumer. The probability of Ben securing the investment is very important in estimating whether the chance is possible to be achieved or it's highly exaggerated. Regulation should require Ben to provide evidence of his current invitation to present at the event and past application letters to present at the event. It will be less costly for the victims to provide evidence for their lost opportunities than for the courts or regulators to inquire.

Eager victims might exaggerate the expected benefits from the utilization of their online purchases. And due to the high transaction costs and information costs in determining the authenticity of their claims it will be difficult for courts to estimate the probabilities and approximate expected benefits of the claims. The risky nature of these online transactions involving eager victims and the uncertainty of the courts' determination of liabilities will cause panic which in turn will aggrandize the vehemence of merchants to defect.

From the scenario above consider if there isn't any other opportunity in the future for Ben to secure another investment with the prototype, or his design has no other use in the future, the principle of 'Frustration of Purpose ' which

shows that Ben's intended utilization of his reliance is rendered futile meaning the cost of \$10,000 already invested in building the prototype has to be internalized by Nancy, the merchant;

Making her liability (including reimbursement) amount to $\$16080 + \$10000 = \$26080$.

If the cost price of the component is \$50 she only makes a profit of \$30 selling to Ben, but stands the chance of bearing the risk of \$26,000. Why would a rational businessperson engage in such a venturesome trade?

V. THE EPITOMIZED RISK-BENEFIT ANALYSIS

The Risk-Benefit Analysis is a useful tool to determine whether a merchant should engage in such kind of online trade, whether such transaction is insurable and also provides a quantitative approximation for regulators to set standards and requirements for estimating the risk of non-performance in online transactions leading to the loss of economic opportunity.

This paper devises the Epitomized Risk-Benefit Analysis as follows:

Let $P(R)$ be the probability of risk involved in a particular online trade

$R(t)$ be cost (in currency) of risk involved in the trade

$P(B)$ be the probability of benefit to be gained from the online trade

$B(t)$ be the amount (in currency) of benefit to be gained from trade

t is the specific period of time the trade takes place

Suppose Nancy from the example above receives an average of 100 customers per month.

Out of these 100 customers 30 of them will buy the component being sold. And 1 of them is a high risk buyer, such as Ben.

$$p(R) = 1/100$$

$$p(B) = 30/100$$

$$R(t) = \$26000$$

$$B(t) = \$30$$

Hence according to the Epitomized Risk-Benefit Analysis

Expected Risk, $E(R)$ is determined as;

$$E(R) = \ln ([p(R) \times R(t)] / [p(B) \times B(t)])$$

Thus

$$\begin{aligned} E(R) &= \ln ([0.01 \times \$26000] / [0.3 \times \$30]) \\ &= \ln (260 / 9) \\ &\approx 3.363 \end{aligned}$$

According the Epitomized Risk-Benefit Analysis , the $E(R)$ of 3.363 is a high risk and therefore this trade isn't worth engaging. Thus it is not an economically viable transaction.

This implies that

$$\text{When } p(R) \times R(t) = p(B) \times B(t) ,$$

$E(R) = 0$, thus zero is the optimum expected risk ,and this paper recommends this level as an economically viable transaction.

When either $p(R)$ is zero or $R(t)$ is zero the Epitomized Risk-Benefit Analysis isn't applicable in this case ,therefore the transaction doesn't fall within the Loss of Economic Opportunity Doctrine Law in e-commerce.

As $[p(R) \times R(t)] / [p(B) \times B(t)]$ approaches zero , $E(R)$ approaches negative ; meaning risk is getting smaller , hence those transactions are low risk.

As $[p(R) \times R(t)] / [p(B) \times B(t)]$ gets bigger , $E(R)$ approaches positive; meaning risk is getting bigger , hence transactions are high risk.

However , $[p(R) \times R(t)] / [p(B) \times B(t)]$ cannot approach negative, that implies it's actually a fully

beneficial transaction, hence the Epitomized Risk-Benefit Analysis ceases to be applicable in such cases.

If sellers stand the risk of frequent suits, they will adversely select against high risk buyers or totally abandon the industry which will cause a distortion in the electronic trading sector and a possible subsequent collapse. This paper recommends that merchants can purchase insurance against such occurrences while legislation protects the rights of consumers to claim lost opportunities due to the non-performance of merchants in the electronic transactions.

E-commerce platforms can also serve as escrow in payments and settle disputes among users. The platform can set up merchants' fund as a form of insurance against risks whereby merchants contribute to the fund to be used in case such disputes arise. The platforms can assist in the determination of the facts and gathering of evidence needed to estimate the probability of risk and expectation damages in disputes; this will reduce the workload of regulators and courts in their adjudication or resolution process and also deter eager victims from making preposterous claims.

The "working days" principle should be amended to reduce the occurrence of loss of opportunity in online transactions. In the example above, if Ben could cancel the contract and place an order from Susan (the alternative seller) during the holiday, his chance of getting the investment would have increased.

Ultimately, legislation and e-commerce platforms should encourage renegotiation if the cost of negotiation is lower than the benefit from renegotiation as recommended by economic principles of efficiency. For example Engbuydotcom, the platform could provide a courier subsidy for Susan, to deliver the component before 27th April at a cost which will be beared by Nancy. Or the platform can offer 'a discounted service fee' and/or 'delivery bonus' to other merchant(s) who can deliver the

product in time, all extra costs beared by Nancy (the non-performer). This move by the e-commerce platform will reduce the cumulative cost in adjudicating dissensions dramatically; that's economically efficient.

VI. CONCLUSION

E-commerce has the advantages of expanding the global inventory, providing a wider range of products to consumers, creating a more convenient way of advertising for merchants and presenting more competitive prices to consumers. The distance, virtuality, uncertainty of damages, action of eager victims, de facto merchants and consumers, risk leading to loss of economic opportunity, implicitly of contracts, privacy issues that arise from profiling consumers, high transaction and information costs involved in electronic commerce makes it difficult for e-commerce platforms, courts and regulators to resolve consumer-seller disputes that arise from electronic transactions. Some regulations attempt to give rights to consumers to terminate contract when there is non-performance on the part of the sellers.

Contract law provides an expedient framework for the resolution of e-commerce dissonances. It's been shown in this paper that whether a written contract was signed by e-signature or e-fingerprint (as suggested by this paper) or not, the promise to deliver goods and/or services in exchange for payment constitute a contract, hence the principles of contract law apply in online transactions.

The theoretical case about Ben(the buyer) and Nancy(the merchant) has shown how the principles of contract law and the loss of chance doctrine can be applied to online transactions and transactions leading to loss of economic opportunity.

In addition, the Epitomized Risk-Benefit is devised and used to show how risk levels can be determined quantitatively to assess an online transaction's viability using the principles of economic efficiency. Courts and

regulators will find it difficult to determine the probabilities of risk and estimated loss of benefit for the consumer (cost of risk involved in transacting, for the merchant) in applying the loss of economic opportunity doctrine. Consumers should provide evidence for preponderance of evidence and courts could use data analysis and expert assessment where evidence is unclear and difficult to ascertain. Economic efficiency ultimately encourages renegotiation facilitated by e-commerce platforms and/or by law.

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