

Date of acceptance      Grade

Instructor

## **From B2C to C2C e-commerce**

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Helsinki 1st May 2006

Course essay

UNIVERSITY OF HELSINKI  
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Tiedekunta/Osasto — Fakultet/Sektion — Faculty		Laitos — Institution — Department	
University of Helsinki		Department of Computer Science	
Tekijä — Författare — Author			
Sami I Mäkeläinen			
Työn nimi — Arbetets titel — Title			
From B2C to C2C e-commerce			
Oppiaine — Läroämne — Subject			
Collaboration of autonomous business services			
Työn laji — Arbetets art — Level		Aika — Datum — Month and year	Sivumäärä — Sidoantal — Number of pages
Course essay		1st May 2006	15 pages + 0 appendix pages
Tiivistelmä — Referat — Abstract			
<p>Over the past decade, e-commerce conducted over the Internet has changed from a novelty to a generally accepted commerce channel for many B2B and B2C applications; B2C e-commerce has enabled not only existing merchants to increase their potential customer base, but has also spawned a number of successful companies operating only online. Recently, the e-commerce family has gotten a new member in the form of consumer-to-consumer (C2C) commerce, which is creating new opportunities for consumers and businesses alike.</p> <p>Along with the opportunities come some challenges unique to C2C commerce; challenges of discovery and connecting buyers and sellers, the issues of trust and reputation and challenges of consumer-to-consumer financial transactions are all different and, in a sense, more complicated in C2C commerce than other forms of e-commerce.</p> <p>This essay will provide an introduction to the world of C2C e-commerce, the key challenges faced by the C2C models and some of the solutions that have been taken into use to solve those challenges.</p> <p>ACM Computing Classification System (CCS):  H.3.5 Online Information Services  H.4.m Information Systems Applications, Miscellaneous  J.1 Administrative Data Processing</p>			
Avainsanat — Nyckelord — Keywords			
B2C, C2C, e-commerce, online auction			
Säilytyspaikka — Förvaringsställe — Where deposited			
Muita tietoja — övriga uppgifter — Additional information			

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# 1 Introduction

Like traditional commerce in the physical world, e-commerce comes in a number of flavors. Traditionally e-commerce has referred to either business-to-business (B2B) commerce or business-to-consumer (B2C) commerce conducted over electronic networks, nowadays increasingly over the Internet. When speaking of consumer e-commerce, probably one of the first companies that springs to most peoples' minds is the B2C e-commerce giant Amazon, arguably the forerunner in B2C commerce conducted online over the Internet.

Traditional online B2C commerce, after suffering from the crash of the "dot-com bubble" at the beginning of the decade, resulted in the survival of a number of successful players and B2C e-commerce is now considered a natural and even necessary sales channel. Businesses from all operational areas, from travel to insurance industries, have found that online B2C commerce is an effective and cost-efficient way of doing business. Successful companies conducting online B2C commerce include both brick-and-mortar merchants, like Barnes & Noble, to whom the Internet is just another sales channel complementing the existing channels, as well as a new group of merchants, like Amazon, to whom the Internet is the only sales channel.

In the past few years, however, a new breed of e-commerce has entered the mainstream market: consumer-to-consumer (C2C) e-commerce, also called person-to-person (P2P) e-commerce. C2C commerce has, as a basic phenomenon, been in existence for a long time before the Internet; it could be argued that it is the oldest form of all commerce. Flea markets and classified advertisements in newspapers are forms of C2C commerce familiar to us all. Recently, armed with the global connectivity provided by the Internet, C2C commerce has begun to extend into the online domain in a manner significant both in financial terms as well as for its impact on consumer behavior.

While a C2C market has some obvious benefits such as cutting off intermediaries from the value chain in a similar way to how e-commerce affected B2C commerce, it also brings with it a number of unique challenges [StR02]. First, there is an initial challenge of connecting the buyer and seller; whereas traditional merchants can advertise and otherwise market their business, individuals cannot afford to buy visibility in a similar manner. Once the buyer and the seller have been connected, there is an issue with trust; are the buyer and seller trustworthy individuals and how can this be known? Finally, there is an issue with the actual monetary transactions;

especially with online commerce conducted over the Internet, the buyer and seller can be geographically very distant from each other. While companies have the capability to receive money using a number of different methods, and are usually capable of accepting credit cards, receiving financial transactions is much more problematic for individuals.

The C2C e-commerce business can no longer be considered small under any classification; according to industry analysts, the online consumer auction sales in the United States alone will reach \$65 billion by 2010, accounting for nearly one-fifth of all online retail sales [Joh05]. The fast development of C2C e-commerce has, perhaps somewhat paradoxically, also spawned a number of quite successful commercial companies providing facilitating services for C2C commerce. While the main actors in C2C commerce are individuals (the buyer and the seller), the presence of also commercial companies is a near-necessity in C2C e-commerce; there is a certain need for trusted, 3rd party entities offering the required infrastructure for C2C e-commerce in order to solve the abovementioned challenges.

This essay provides an introduction to consumer-to-consumer e-commerce, the different models how C2C commerce is conducted in the Internet domain, the three main challenges of C2C e-commerce & how they are being solved today and the key commercial players involved in enabling C2C e-commerce. Chapter 2 introduces the types of C2C e-commerce and the first challenge of connecting the buyer and the seller. Chapter 3 tackles the reputation and trust issues and Chapter 4 looks at the problems encountered with financial transactions in C2C e-commerce. Finally, Chapter 5 concludes by wrapping up the current state of C2C commerce and its possible future directions of development.

## **2 Introduction to C2C e-commerce**

At its core, consumer-to-consumer e-commerce can be defined as individuals doing business in an online environment, typically utilizing the Internet in one way or another. This definition of C2C used in this essay does not preclude commercial non-consumer entities from participating in the business transactions in one way or another - indeed, as has been already mentioned and as we will discuss later, various businesses provide more than one critical service for enabling online C2C commerce.

## 2.1 Types of C2C e-commerce

C2C e-commerce systems and models can be categorized in a number of ways and there is currently no generally agreed taxonomy for the classification. One way would be to classify the models according to their level of "pureness", by analyzing how many outside players other than the buyer and seller need to be involved in the transactions. Another classification criteria could be location; are the buyer and seller able to meet physically? As we will see later, the level of proximity also has some important implications when tackling both the trust and monetary transaction challenges.

Another categorization can be made by price; whether the price is fixed beforehand or whether there is an active price competition one way or another by auction or reverse auction. There are a number of (more or less) fixed-price models where the price of an item is fixed in advance by the seller. On the other hand, there are also a number of variations on the auction-model where the buyers openly compete over the goods or services for sale. Of course, even with the "fixed-price" models, nobody can prevent any price re-negotiations taking place once the buyer and seller are involved in bilateral communication. In this sense, all C2C commerce models are based on rather flexible pricing.

As there is no generally accepted standard classification method for types of C2C commerce, Figure 1 lists the classifications mentioned above along with some example cases of each model. We will return to the companies mentioned as examples later in the essay.

Classification method	Categories & examples cases	
Proximity	Buyer and seller far apart	Buyer and seller can meet face-to-face
	An individual in Finland buys an item in eBay auction from Canada	Buying a car from an individual after finding a classified advertisement in Craigslist
Price	Fixed	Flexible
	Classifieds advertisement with a set price	Auction such as eBay or Huuto.net
Number of outside players	None	Many
	Buying an item from a friend after a face-to-face discussion	Using search (e.g. Google) to find an item for sale (e.g. in eBay), bidding for it and paying with a credit card (e.g. through PayPal)

Figure 1: Different ways of classifying C2C e-commerce

Some of the classifications listed here are also interlinked; for example, for a large-scale system, it is generally a practical impossibility for the buyer and seller to be far apart and yet have no outside players involved - one challenging aspect is the buyer-seller discovery, i.e. the creation of a connection between buyers and sellers.

Two models dominate the current state of C2C e-commerce; flexible-price online auctions with a with buyers and sellers typically geographically far apart and on-line classified advertisements with more fixed asking prices - the bargaining in this model, if any, takes place privately between the potential buyer(s) and the seller, unlike in an open auction where all offers are visible to everyone. Because of the dominating position these two models have, this essay also places emphasis on these two scenarios.

## **2.2 Connecting the buyers and sellers**

As was mentioned earlier, the first challenge of C2C e-commerce is connecting the buyers and sellers. While traditional merchants have visibility through possible physical presence like stores and can afford to advertise their services in a number of different media, both of these activities are typically too costly for an individual consumer. How is an individual selling something going to find the right person to buy whatever is for sale, preferably at the highest possible price?

With a clear problem statement and the need for a solution, it is not surprising that many companies have taken up on the challenge of solving the connectivity issue. Two of the most successful models have both been directly ported from the physical world to the online domain: auctions and classified ads. One of the key success factors especially for auction sites is a large enough subscriber base, so there is room for only a limited number of such services. In the area of online C2C auction sites, there is a clear global leader: eBay. Founded in September 1995, it has managed to attract a community of close to 200 million registered users [Eba06]. In Finland, Huuto.net has taken the number one position for local auction sites.

How does an online auction site make money? A C2C online auction site is one example of so-called multi-sided markets; the service provider of the C2C auction site will need generate revenue from somewhere, but with more than one party participating in the transactions, who should the service provider charge and how much? Online auctions practically never charge anything from the buyers, as such practice could quickly discourage buyers from using the service. Instead, the service

providers can charge a number of fees from the sellers; first, there can be a basic fee based on the value of the item for sale - either a fixed amount, a percentage of the final price or both. Second, visibility features such as pictures, bold fonts, better placement in search results etc. are also chargeable services. Finally, companies such as eBay which also own the payment processing platform used (PayPal in the case of eBay) can also generate revenue from the payment processing activities.

On the classified ads side, the market situation in terms of service providers is more dispersed. However, also here a forerunner and to a certain extent dominant a player can be identified: Craigslist. Originating from the San Francisco-area as and starting as a local classified ads service, it has now grown to cover over 200 cities in 35 countries worldwide [Cra06]. Craigslist makes profit mainly from charging businesses for help wanted ads; posting and replying is free for individuals. Craigslist currently receives over 8 million classified advertisements each month.

Besides auction and classified ads sites, various for-sale forums and newsgroups are another way of connecting the buyers and sellers. There are literally thousands of such forums and newsgroups around the world, and they are typically focused on trading of items and services that are of interest to either a geographically limited area, a special-interest group or both. An example of the former are the sfnet.tori Usenet newsgroups, which obviously are quite uninteresting for anyone outside Finland and/or not proficient with the language. The "flea market" sales area of the Fillari-magazine's discussion forum is an example of a combination of both categories; this sales forum is only useful to Finnish people interesting in biking.

Overall, it could be said that the problem of connecting buyers and sellers has been solved adequately - while there is significant room for improvement, the current services available provide a decent chance of connecting the sellers with potential buyers in a successful manner. Something that remains challenging is finding the appropriate sales channel directed at a specific special-interest group; the discovery of such forums is largely up to word-of-mouth marketing and the usage of Internet search engines.

### **3 Reputation and trust challenges**

The second challenge in C2C e-commerce is trust; compared to B2C commerce, gaining trust is more complicated when the buyer and seller are both individuals, and with Internet come the disadvantages of anonymity - the potential for fraud or



misrepresentation is much greater online than in the physical world. Nevertheless, there are ways of alleviating the trust problem and the success of C2C auction systems is seen to owe a great deal to the development of working reputation systems [LiL05]. This chapter covers some of the trust and reputation challenges involved in C2C e-commerce and how they are being solved.

### 3.1 Importance of trust

One of the key issues in any commerce is the trust relationship necessary for the purchase to take place. Several trust relationships need to be in place before any successful transaction, be it B2B, B2C or C2C, can take place. In B2C e-commerce, the buyer will need to trust the seller to deliver the ordered items. If the merchant conducts business in a reputable manner, it will eventually gain a reputation as a trustworthy merchant, which helps the customers to trust the particular business. Additionally, online rating services like BizRate.com and Epinions.com where customers can give feedback and rate the merchants, help reduce customers' perceptions of risk and lead them to trust the merchant [BHR04]. If a merchant has a generally good reputation, it is a clear sign that it can be considered more trustworthy than a merchant with a lot of negative feedback.

The need for trust in the first place stems from the fact that typically the exchange of goods sold and the exchange of money cannot be completed at the same time. In practice, either the buyer pays in advance and thus has to trust the seller to deliver the goods or the seller has to send the merchandise before receiving the payment and thus has to trust the buyer to deliver the money in a timely manner. Either way, there is room for fraud if the other party is not trustworthy. It is easy to see that for any C2C commerce system to work, the trust problem needs to be solved in an acceptable way.

When a C2C commerce transaction (i.e. the exchange of money and services or goods sold) takes place face-to-face, the issue of trust is somewhat easier to solve. In this case, the exchange of money in the form of cash can take place more or less simultaneous with the exchange of the goods or services sold. Often, however, there is no possibility for the buyer and seller to meet - and indeed, one of the main advantages of e-commerce is that they do *not* have to meet.

Figure 2 depicts the main trust relationships that need to be in place for a generic C2C transaction to take place; in addition to the buyer and seller trusting each other,

both parties also have to trust the facilitating service providers. These include the facilitator for the "meeting place", usually an auction site host or a similar provider, and (if not the same as the auction host), the party completing the financial transaction. Finally, if physical goods are sold, both parties need to be able to trust the delivery company used to deliver the merchandise (not shown in the figure).

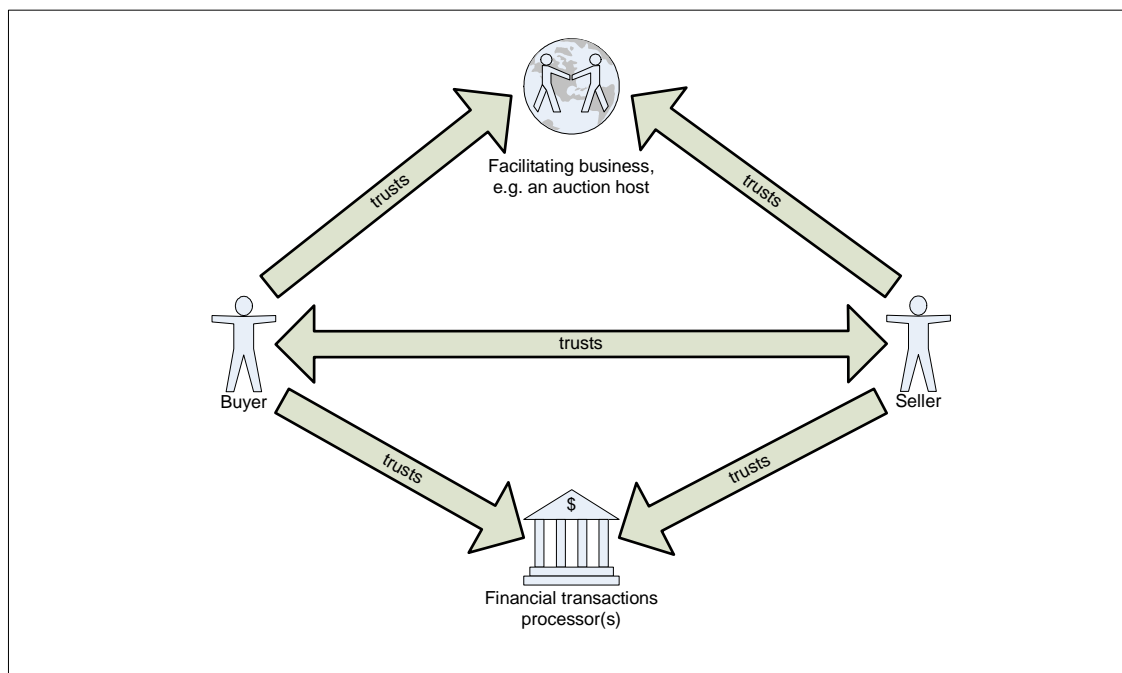


Figure 2: Required trust relationships in a generic C2C transaction

### 3.2 Trust and reputation systems

The trust challenge in C2C e-commerce can be alleviated in a manner similar to the B2C e-commerce; by developing reputation systems. Unlike in B2C reputation systems, the feedback in C2C e-commerce is two-way. A feedback-based reputation system typically works in the following fashion: after each purchase, both the buyer and the seller are able to give feedback on the transaction. The feedback includes a free-text description of the transaction, accompanied by a numerical rating. The numerical rating is typically a three-level rating; -1 for a negative evaluation, 0 for a neutral evaluation and +1 for a positive evaluation [Dho05]. Both evaluations are then visible to all other users of the service. The key premise for reputation-based systems is the fact the consumers trust online feedback given by peers when buying

products and that the reputation of the seller is seen as highly important by the prospective buyers [Hav06, StR02].

With a feedback-based reputation system in place, all active users of the system will eventually, after accumulating some feedback, form a reputation. But while generally trusted, is reputation actually reliable? Research has found that such customer feedback-based reputation systems are in fact relatively reliable in predicting how successful the transaction will be. Additionally, they can even be used to predict seller defaults and termination in advance [BHR04]. The reputation systems also benefit sellers - the buyers' reputations have been shown to be highly predictive of a successful transaction [Dho05]. Considering their usefulness and the fact that they require very little maintenance from the service providers, it is not surprising that reputation-based systems are widely utilized in C2C e-commerce.

Naturally, the reputation-based systems are not without problems. One problem with these systems can be considered to be a variation of the bootstrapping problem; initially, there is no reputation information available at all. When a new seller enters the marketplace, he or she has no pre-existing reputation and has to start building one from scratch. Obviously, as one of the tactics used by fraudulent sellers is to establish new identities under which to trade, buyers can be wary of a seller without any feedback or an established positive reputation. This kind of "assumed guilty"-behavior can inhibit the introduction of new sellers into the system, which is an obvious problem as the value of any C2C marketplace is proportional to the number of individuals using the system.

Fraudulent sellers could also build up positive reputations and defect some time later; one of such situations was Steward Richardson. In over 6,000 auctions, he earned only 43 negative feedbacks. Then in a span of a few days he sold over 100 items, left his shop, employees, and wife, withdrew at least \$261,000 from the business bank account and disappeared [BHR04]. Such incidents are luckily rare, and as such do not significantly affect the overall value of reputation-based systems.

Another approach at alleviating the trust problem is for the business maintaining the market place (e.g. eBay) to offer insurance in case something goes wrong. Such risk distribution solutions have obvious benefits for the consumers; having an insurance in place would somewhat alter the required trust relationships in Figure 2, essentially removing or lessening the need for the buyer and seller to trust each other. As it has been shown that buyers are willing to pay a "trust premium" of close to 10% on their purchases, it could be concluded that there is willingness to pay for such

insurance services [StR02].

eBay, for example, currently offers a number of "Buyer protection" programs that provide varying degrees of protection against fraud. Many of these programs are provided free of charge under certain conditions. With insurance, both parties will naturally have to trust the insurance provider - usually this is not a problem as the party providing the insurance is typically involved in the transaction somehow and is already assumed to be a trusted party. Several credit card providers also offer a fair degree of insurance; if a product or service is paid with a credit card and the order is not fulfilled, the buyer is not liable to pay the bill.

Recently, agent-based advisors have been proposed which would aid the decision making of auction participants [GrW06]. However, such systems have not yet been commercially implemented in any system and customer feedback-based reputation systems remain the key solution in use for the trust problem. The success of various C2C marketplaces can be taken as an indication that the existing systems are relatively effective and offer an adequate degree of protection against fraud.

## 4 Monetary transactions in C2C e-commerce

In addition to the challenges we have already covered (connectivity and trust), there remains one more challenge before successful C2C e-commerce can be a reality - that of reliably and affordably performing monetary transactions between the buyer and the seller. This usually calls for another trusted 3rd party provider to aid in the transactions. While completely distributed systems for digital commerce and digital money have also been proposed, it is unlikely that such systems will gain significant market share in the near-term future [Sch03]. This chapter gives an overview to how monetary transactions are currently implemented in C2C e-commerce and the associated challenges.

### 4.1 Differences in B2C and C2C financial transactions

In online B2C commerce, credit cards are by far the most common payment method used [EvS05]. As credit cards also dominate the C2C e-commerce payment methods, they are used as the payment method in the examples and value chain descriptions presented in this chapter.

In traditional B2C e-commerce, the merchant typically has an agreement with a

credit card processor to process the credit card transactions. The processor charges a certain fee for these services, which is in the range of 0,3% to 3% of the transaction amount plus a possible per-transaction fee [Luo06, EvS05]. The merchant fee is invisible to the consumer as merchants are not allowed to sell the products cheaper to people paying with other payment methods or charge more from those paying with a credit card. Naturally, the fee is still factored in the prices offered by the merchant.

Figure 3 provides a conceptual and simplified overview of the money flow in B2C commerce. In the traditional B2C case, the consumer pays the full amount of the purchase to the merchant, who in turn pays the credit card processor for the services rendered.

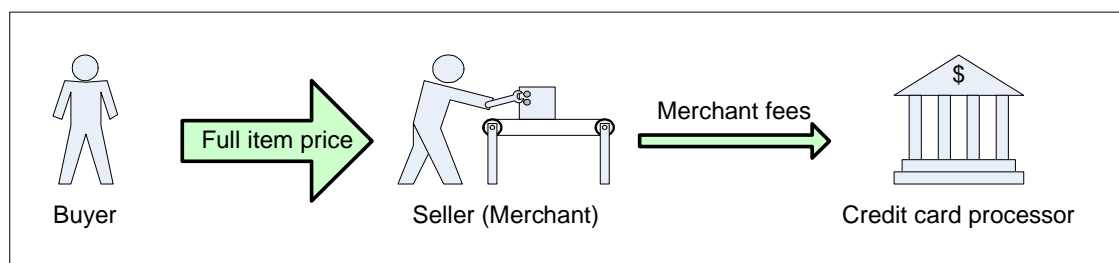


Figure 3: Simplified money flow in B2C commerce

In addition to the per-transaction fees, there are setup fees associated with accepting credit cards. When entering into an agreement with a traditional credit card processor, an initial fee in the order of hundreds or thousands of euros is typically charged from the merchant. Systems integration work will also need to be performed for the merchants' systems to be able to send transaction requests to the processor in a secure and reliable fashion. While the process is becoming more streamlined and cheaper for transactions conducted over the Internet, the relatively heavy setup of having explicit agreements with credit card processors is obviously too heavy for individuals engaging in C2C commerce.

This is where intermediary processors facilitating peer-to-peer or person-to-person (P2P) payments come in. There are a number of companies enabling P2P payments, but the value of such a system is limited to the means available when transferring money to/from/through these systems. If no bank account transfers or payment cards are accepted, how is one to get money in and out of such a service?

Therefore, companies such as PayPal offer individuals the chance to receive credit

card payments by acting as a middleman dealing with the credit card processors. With the introduction of such intermediary financial processors, the money flow also changes. It is now the intermediary processor who has agreements with the credit card processors and who needs to pay the merchant fees to the credit card processors. For these services rendered, the payment processor needs to charge a percentage somewhat higher than the credit card processor. This fee, which in the PayPal case is 2.5% of the transaction value + a per-transaction fee of \$0.30 for small merchants with low transaction volume, is charged from the merchants or sellers; using PayPal is free for buyers.

Figure 4 depicts the conceptual, simplified money flow in C2C e-commerce situations; the item price is paid to the seller through a P2P payment processor, who in turn disburses the credit card processors and charges the seller a fee for the service.

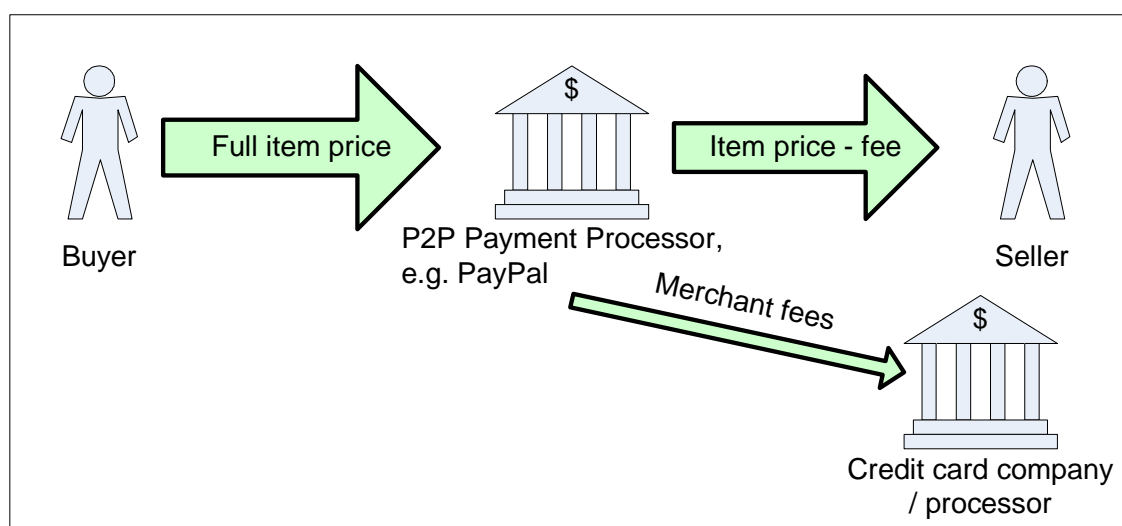


Figure 4: Simplified money flow in C2C e-commerce

## 4.2 P2P payment services

What are the general options available when an individual wants to transfer money to another individual? Broadly, the categories listed in Figure 5 are available to consumers. The table also lists some advantages and disadvantages of each service when considering its usage for online C2C commerce.

From the list of payment methods and their advantages & disadvantages, it can be seen that only online P2P payment services are really realistic payment options for a

Payment method	Aspects considering online C2C commerce	
	Advantages	Disadvantages
Cash	<ul style="list-style-type: none"> <li>• Ubiquitous; available to all</li> <li>• Does not need a bank account or cards</li> </ul>	<ul style="list-style-type: none"> <li>• Buyer and seller must meet physically</li> <li>• Prone to counterfeits</li> </ul>
Checks	<ul style="list-style-type: none"> <li>• Does not need a credit card</li> </ul>	<ul style="list-style-type: none"> <li>• Mail delivery slow</li> <li>• Cashing checks can be expensive</li> </ul>
Bank account transfers	<ul style="list-style-type: none"> <li>• Cheap, fast and convenient within national borders</li> </ul>	<ul style="list-style-type: none"> <li>• International transfers expensive</li> </ul>
National electronic payment	<ul style="list-style-type: none"> <li>• Fast and convenient within national borders</li> <li>• Safe and fast method of transferring money</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive set-up fees for the receiving party</li> <li>• Unusable for international transactions</li> <li>• Usually proprietary systems by individual banks; requires both parties to be signed up to the same bank</li> </ul>
Online P2P payment services	<ul style="list-style-type: none"> <li>• Convenient, safe and fast</li> <li>• Allows for anonymity</li> </ul>	<ul style="list-style-type: none"> <li>• Requires a credit card and/or a bank account</li> <li>• Requires both parties to be registered to the same service</li> </ul>
CoD (Cash on Delivery)	<ul style="list-style-type: none"> <li>• Safe, trusted method which has been available for a long time</li> <li>• Combined with the physical goods delivery</li> </ul>	<ul style="list-style-type: none"> <li>• Only available for physical goods</li> <li>• Very limited availability internationally</li> <li>• Expensive for smaller amounts</li> </ul>
Money transfers	<ul style="list-style-type: none"> <li>• Available to all; no need for bank account or credit cards</li> <li>• Can allow for a certain degree of anonymity</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on offline transactions</li> </ul>

Figure 5: Payment methods and their applicability to online C2C commerce

global C2C e-commerce platform. Of companies operating in this space, PayPal has succeeded in becoming an industry *de facto*-standard for online person-to-person payments. Indeed, PayPal has been called the "only success story among a flood of new payment systems that started during the dot.com boom" [EvS05]. Several of its major competitors such as Yahoo! PayDirect and Citibank's c2it services have shut down due to lack of customers.

A number of small players offering P2P payment services still exist, but they are dwarfed by PayPal's numbers; at the beginning of 2006, PayPal had over 100 million registered users with a payment volume of \$8.8 billion in the first quarter of 2006 [Eba06]. Common to all P2P payment processing services is their sometimes uncertain legal status; depending on the country, they may be considered either as electronic money providers or as a bank and thus may require a banking license - however, the situation is currently somewhat uncertain [Gon04].

PayPal now offers a fairly extensive set of services, targeting users from individual consumers to small- and medium-sized businesses looking to accept payments. PayPal also offers the option of connecting bank accounts with the PayPal account, thus enabling people to conduct global transactions easily directly from their bank accounts - in this respect, PayPal is actually competing with credit cards by making

them unnecessary for certain transactions. Beyond PayPal, companies like Western Union have a long history of providing person-to-person financial transactions globally, but they have been very slow in entering the online domain. While Western Union currently does offer a limited service of sending money online, it cannot be used for online purchases like PayPal.

## 5 Conclusions

Three of the major challenges of C2C e-commerce were covered in this essay - connectivity of buyers and sellers, trust and financial transactions. We have seen that they can all be said to have, to some extent, acceptable solutions in place. With these critical success factors in place, it is not surprising that C2C e-commerce is playing an increasingly important role in online e-commerce.

However, a major weakness of the current state of C2C e-commerce is its reliance on the services provided by only a few companies; in fact, after the eBay acquisition of PayPal, this one company alone controls a significant amount of the global C2C e-commerce. Such a centralized state of commerce is obviously not entirely desirable. However, since C2C e-commerce relies much more on the acquisition of critical mass of buyers and sellers than other forms of e-commerce, the dominant position of one key player, once established, is difficult to disband.

A curious feature of C2C e-commerce is the fact that identifying what exactly is B2C and what is C2C commerce can sometimes be difficult; when an individual becomes more and more active in selling items in a C2C fashion, it is challenging to draw a line as to when the activity becomes B2C commerce. Does it happen when the income through the sales activity becomes sufficiently big to solely support the individual financially? Or does it happen when the consumer starts reselling some new goods for augmented income, acting as a mini-retailer?

It can be seen as somewhat paradoxical that due to the success of C2C e-commerce, it is in this way contributing to the growth of B2C commerce; only with the merchants being smaller and there being many more of them than in traditional B2C commerce. Fortunately, it is usually not critical to determine exactly where C2C ends and B2C begins as the methods and services used to solve C2C commerce challenges are largely applicable to a world with many small commercial merchants. Similarly to the blurring line between B2C and C2C commerce, the categorization of companies enabling C2C e-commerce is not straightforward; while the clear auction leader



is eBay, they also offer fixed-price trading features, thus bringing them closer to traditional e-commerce.

Despite the major show-stoppers being solved to an adequate extent, there remains much room for both technical and structural improvement for each of these solutions. When comparing B2C and C2C e-commerce, a phenomenon called the "winner's curse" can often be seen. A winner's curse means the buyer, an auction winner, ends up paying more than the minimum fixed price for identical products, and it is surprisingly common in C2C online auctions; according to some studies, nearly 60 percent of auction consumers paid more than the minimum price observed from selected electronic fixed-price vendors for certain commodities [Won02]. With price comparison services becoming more advanced, this phenomenon can also be alleviated.

Improved price comparison possibilities is indeed one likely future trend of online C2C commerce; additionally, the comparison can and will go beyond price. With reputation-based systems integrated to the price comparison engines, buyers will be better equipped to find the best overall deals, whether they are from B2C merchants or C2C marketplaces. With these developments, the worlds of B2C and C2C online commerce are already beginning to merge, further adding to the power of search engines and likely creating few global mega-marketplaces. Whether or not the rather centralized state of the market is a permanent feature of online C2C commerce - and whether it turns out to be problematic - remain to be seen.

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