# E-commerce:

# The Future's Fragile Business Model

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Society is becoming ever more digitized. Books are becoming exclusively digital, digital music sales are rising, video game companies are experimenting with downloadable games, and electronic currency such as Bitcoin are growing in popularity. In this increasingly electronic world, digital will eventually become more abundant, and just as society progresses, so must businesses adapt a new model: e-commerce. E-commerce has been around since the advent of the Internet, and many consumers acknowledge the convenience e-commerce provides. E-commerce is a great model for not only current Internet shopping, but also the future economy where most items will be purchased online. However, complications such as phishing, hacking, and piracy are a growing problem for e-commerce. While solutions have been implemented to supposedly fix the issues, new problems are introduced to consumers which further damage e-commerce. In order for e-commerce in e-books, music, and video games to operate successfully in today's and the future economy, consumers and content creators/publishers must sustain a mutual relationship and devise milder solutions that will produce the largest benefit for both parties.

Indisputably, e-commerce plays an important role in today's economy. Since the Internet was introduced, the world has become more interconnected and shopping has become easier. For businesses, it has become important to maintain an online presence. "This is particularly true if businesses wish to grow, extend their sales, and reach customers they might not have reached before. E-commerce sites enable businesses of all sizes to reach their target range of customers without being physically present" ("Why is ecommerce important?," n.d.). In turn, consumers more frequently choose to shop online, and enjoy the benefit of shopping from the "comfort of their own homes." The advantage to sell or purchase from any location renders e-commerce as an important business model in today's market.

E-commerce is the collection of "activities that relate to the buying and selling of goods and services over the Internet" ("e-commerce," n.d.). These goods and service are usually physical products that must be shipped and take some time before reaching the consumer. While the world has become more interconnected and faster, e-commerce is still only as fast as the slowest component in online shopping - shipping. Efficiency is key for industry, necessary for businesses, and convenient for consumers. Businesses in electronic products such as music, e-books, and video games could significantly benefit off of e-commerce. Not only can consumers buy products instantly anywhere but also receive electronic products instantly anywhere, which could further augment e-commerce's presence online. Although transactions are predominantly conducted digitally through an online payment processor, accepting electronic currency such as Bitcoin could extend business availability to users of Bitcoin, and potentially other countries. Thus, e-commerce can find strength in the expediency of electronic products and electronic currency.

The progression of currency, books, and entertainment into the digital realm requires e-commerce to be adapted as the new business model. As previously stated, the world is becoming faster, and in addition to slow shipping, banknotes hinder the speed at which business can be conducted. "The problem money faces today is that it is not particularly efficient for the types of commerce that is emerging" (King, 2014). Fiat money, government issued banknotes, cannot sustain this emerging market. These money transfers require lengthy stops at checkpoints and numerous fees to compensate "administrative frauds and access to private car network rails" (Neville, 2014, p. 1). On the other hand, E-currency transactions are instantaneous. This is advantageous as businesses prefer receiving payment before shipping any products - e-currency can help accelerate businesses. To account for consumers new to e-currency, adopting a hybrid economy using both fiat and Bitcoin could help introduce electronic currency to the public.

Because e-currency transactions can only occur online, e-currency must depend on e-commerce for it to be used properly. Thus, e-currency promotes e-commerce as a necessary business model for the future.

The publishing of e-books will outpace the printing physical books. "The digital marketplace will virtualize the book and not dematerialize it" (Doueihi, 2011, p. 24). E-books provide many benefits that make them both more convenient and profitable than their physical counterpart - less bulky, lighter, environmentally friendly, and cheaper to publish than print. However, many physical book advocates claim that electronic books destroys close-reading - the deep process of reading intricately in order to draw out ideas and themes - and introduces "destructive" hyper-reading - the skimming of vast amounts of texts (Hayles, 2012, p. 12).

Granted, Doueihi argues, "The digital marketplace is a natural extension of the emerging digital literacy, and traditional producers and distributors of printed intellectual property need, for their own survival, to accept its reality and its consequences" (Doueihi, 2011, p. 24). As the world becomes increasingly digital, so too will most books transition into digital forms - opposing it is futile. Instead, Doueihi encourages people to prepare for the incoming medium, not just skill-wise, but also market-wise. E-books will need to adopt the e-commerce business model in order to sell. Thus, e-books promote e-commerce as a necessary business model for the future.

Similar to e-books, music and video games are transitioning into more electronic forms. Digital music is beginning to outsell physical CDs (IFPI, 2014, p. 6), and video games companies, such as Nintendo, are experimenting with the digital market (Nintendo, 2014). As can be seen in today's market, both the music and video game industries make use of the e-commerce model by selling and distributing products online. This has greatly contributed to digital music's success over physical CDs. It is likely that a similar dominance in digital sales

will be seen in video game sales as well - further displaying e-commerce's necessity in the future economy.

Unfortunately in today's economy, e-entertainment products and e-currency come with problems of their own which threatens e-commerce. E-books, music, and video games all suffer from piracy that reduce the profits of authors, content creators, and publishers. Additionally, e-currency and online bank users suffer from phishing attacks and hackers.

Piracy diminishes the profits of authors, content creators, and publishers by allowing file sharers to download unauthorized copies of products online for free. These unauthorized copies are usually stored in file sharing sites where the copies can be distributed to other users, further reducing revenue. Within the video game industry,

> the computer game industry in the United States and Canada loses up to $3.5 Billion a year to pirated video games. The losses to piracy is equal to about one-fifth of the total value of the video game market. Worldwide, the hand-held video game market loses $8.1 Billion a year to piracy (Weck & Mawad, 2012).

In contrast, e-book piracy is relatively low in the United States, but should not be overlooked. "92 percent of e-book readers in Russia obtained their books illegally downloading the materials. In the United States, the e-book piracy rate is about 12 percent" (Indvik, 2013). Music suffers the worst from piracy. In addition to losing nearly 12.1 billion dollars per year to piracy,

> 150.5 million CDs and album downloads were sold from January to June 2012. In comparison, 75.6 million albums were downloaded using BitTorrent during the same time period. Over a three month period that ended in January 2013, almost 400 million digital files were pirated by Internet users in the United Kingdom (Smith, 2012).

Piracy can be damaging to businesses, especially early businesses which are more vulnerable. This can discourage businesses from participating in the online market (Lessig, 2004, pp. 66-67), and damages e-commerce as businesses steer away from selling online.

Phishing and hackers attempt to steal personal information and online money from consumers. Most online transactions occur electronically through a payment processor such as Paypal or Bitpay. Phishes are schemes that seek to obtain information, such as usernames and passwords, to access accounts on payment processors or even banks/e-currency clients. "Phishing is a trap of resemblance: it relies on seemingly official but in fact fake emails whose purpose is to lure users to Web sites where they may disclose their private or financial information to a scammer" (Doueihi, 2011, pp. 36 - 37).

On the other hand, hackers forcefully break into these accounts utilizing not only vulnerabilities in security but also bots to overflow networks. Sites such as input.io that hold hundreds of money accounts are in danger of theft. "The site [input.io] was compromised on Oct 23, and again on Oct. 26, and hackers made off with 4,100 bitcoins ($1.2 million) stolen in two separate attacks" (Mcmillan, 2013). With such susceptibility in online money banks, consumers can be dissuaded from shopping online. Although safer payment methods could be negotiated, such as sending paper money through mail, online shopping would only become more of a burden than buying from a local store. Thus, e-commerce is damaged as consumers are less likely to shop online.

Fortunately, many solutions have been implemented to mitigate the negative repercussions of phishing, hacking, and piracy. For example, Anti-phishing software provides safety to consumers online by warning and preventing them from entering phishing websites. To consumer's conveniences, anti-phishing software have been installed into most web browsers and

email clients. Extensions and toolbars such as Netcraft can also augment the efficacy of successfully identifying phishing attempts (Cranor, Egelman, Hong, & Zhang, 2006, p. 19).

In addition, reCAPTCHA and networks can further ensure the safety of consumers online. reCAPTCHA helps distinguish valid human users from bot attacks. ReCAPTCHA requires users to decipher an image of distorted text that bots normally cannot decode. As a result, humans are able to access and create accounts on sites while bot attacks fail to make servers vulnerable. Networks can manage and store personal data, passwords, and credit card information securely in one convenient location, such as the Google App Store or the Play Station Network (Portnow & Floyd, 2012). Furthermore, by utilizing such data, these networks can also provide a better personalized experience to each user. Because of increased security, and in some cases, conveniences accomplished by anti-phishing software, reCAPTCHA, and networks, consumer confidence in buying online increases and benefits e-commerce.

EULAs, copyright laws, and DRMs help preserve the rights of content creators and publishers and discourages piracy. End-User License Agreements are legal contracts between software author/publishers and users. It allows the authors/publishers to control, though not necessarily enforce, and to inform consumers how digital products can be used after purchase. Any deviations from the contract can be followed by legal actions by the author or creator. Copyrights provide further protection over how products are used, specifically over making copies, performing in public, broadcasting, and using online ("Benefits of Copyright Protection," n.d.). It also gives the right of creators/publishers to sue copyright infringers for misuse, exploitive copying, and piracy. Finally, DRMs are methods of enforcing control over how digital products and works are used after purchase - a direct attack against piracy. DRMs usually employ codes that prevent any unauthorized distribution or copying of games, music, and e-books. All three solutions ensure that content creators and publishers do receive all, if not close

to all, the profit for a product. Thus, e-commerce benefits as creators are more confident in conducting business online.

However, some of these solutions introduce other problems and inconveniences to consumers that damage e-commerce. For example, reCAPTCHA has become increasingly difficult to decipher in response to Hackers improving algorithms in bots. By 2012, as many as 90% of people found it difficult or impossible to decipher reCAPTCHA images, which adds not only an inconvenience to account holders, but also a hindrance ("reCAPTCHA," n.d.).

Networks' collecting of personal data can dissuade many people from using it. While such collection of data is necessary in order for applications and software to optimize user experience, consumers are less likely to use the networks. Most companies have alleviated this by not informing consumers about personal data collection. However, the 2013 PlayStation Network Hack resulted in a gargantuan amount of personal data stolen and the revelation to players about the network's non consensual collection of data (Portnow & Floyd, 2012). This augmented the impact of the hack, distrust towards the network, loss of consumers, and damage to e-commerce.

EULAs, copyrights, and DRMs impose illegal, absurd, and destructive restrictions on consumers. EULAs are usually lengthy documents that most people do not read. Taking advantage of this opportunity, some authors/creators/publishers have added elements that illegally restrict the rights of consumers, such as disallowing public criticism and reverse-engineering - customization - of products. Furthermore, most EULAs are provided after products are bought, which can clash with what users plan to do with the product against what they are actually allowed to.

Copyrights further restrict any modifications and fair usage of products and works. While piracy must be prevented, the law does so where any transformation or "copy/cut and paste"

from works is a crime (Lessig, 2004, p. 144). In addition, copyrights go to ridiculous measures to supposedly protect works, which only yields inconveniences to most legal consumers. Lessig points out that in his Adobe E-Book  some e-books restrict how many passages can be copied, how times he is allowed to read the novel, and decide whether the software is permitted to read aloud or not (Lessig, 2004, pp. 149-151).

DRMs do little to stop piracy and hurt consumers in the process. Companies understand that DRMs are useless. Steve Jobs proclaims, "DRMs haven't worked, and may never work, to halt music piracy" (Doueihi, 2011, p. 23). Video game companies like Ubisoft have abandoned DRMs since it hurts consumers and pirates can easily rip DRMs out (Makuch, 2014). DRMs hurt consumers as the products they receive are buggy, conflict-ridden, and can't be legally copied into digital libraries (Portnow & Floyd, 2012). However, pirates offer the same product not only for free, but also conflict and bug-free, giving further incentive for consumers to download pirated copies. EULAs, copyrights, and DRMs restrictions dissuade many consumers from purchasing from the digital marketplace. With less consumers participating in e-commerce, e-commerce will fail to sustain itself.

The overregulation of digital products could also lead to more piracy in the future. Lessig states that, "Overregulation corrupts citizens and weakens the rule of law. The more laws there are, the likelier the chance a citizen will break one, and the more repeatedly citizens violate the law, the less we respect the law" (2004, pp 199 - 202). With less respect for the law, consumers could adopt a criminal mindset and instill consumer complacency toward pirating items. Thus, e-commerce would fail to be an effective business model for the future.

While it is understandable that authors/content creators/publishers are trying to earn the full profit they deserve for their work, establishing strict regulations and control hurts consumers too and creates tension between both parties. Such building hostility will only obstruct business

in e-commerce. Instead, solutions that take a middle ground where both sides voice their concerns and pay mild costs will create the largest net benefit for e-commerce - a compromise and mutual relationship.

The benefit of mutualism can be seen in both physical and digital businesses. For example, mangas are popular Japanese comics that are made by mangakas. On the other hand, doujinshis are different storylines and tale derivatives of mangas made by fans. Throughout the year, both fans and mangakas attend comic conventions in order to sell their works to make profits. Although doujinshis are a clear violation of copyright laws, most mangakas do not take any legal actions to restrict their fans' creativity. In a way, mangakas view fans' works as advertisement. This mutual relationship "spurs the manga market to be more wealthy and productive. Everyone would be worse off if doujinshis were banned" (Lessig, 2004, p. 28).

Within the digital realm, "Let's Play" - videos of people playing video games with commentary - are becoming more prominent on YouTube. Because these videos tend to garner millions of views, these "Let's Play" accounts get viewership revenue that game creators don't receive. However, game creators don't punish the YouTube accounts as the videos can be beneficial. For example, Flappy Birds - a minimalist game where players must navigate between green pipes and travel as far as possible to the right before hitting a pipe - was not very popular and had very few downloads. However, soon after the famous Youtuber named "PewDiePie" played the game, Flappy Bird spurred in popularity and was said to have been earning nearly $50,000 from ad revenue per day (Patrick, 2014).

Granted both these situations involve advertisement, both displayed a mutual relationship that involved little to no interaction between the parties. The same mutualism or middle ground solution also be established between creators of digital products and consumers. "Alliances,

agreements, friendships, and coalitions can often pay their way by giving all of us more returns than we could have had by going down the path of outright competition" (Pagel, 2012, p. 186).

Lawrence Lessig's Creative Commons takes such approach for a middle ground solution. With the motto "Some Rights Reserved," Creative Commons adopts the same objective of copyright laws, except it leaves consumers with more freedoms while ensuring fair earnings for the creators (Lessig, 2004, p. 204). Creators do give up some restrictive rights that may result in less revenue compared to adopting copyrights or possibly DRMs. However, Creative Commons do not antagonize consumers. It offers consumers more rights to using digital products and works. This can build a stronger relationship between consumers and creators. Furthermore, allowing consumers to create derivative products or legally distribute creators' works could serve inadvertently as advertisement and attract even more consumers as well. Thus, e-commerce would benefit overall as authors/content creators/publishers would be more willing to participate in the online market and attract more consumers into the digital marketplace.

Creative Commons is one of the many compromise solutions that can benefit both creators and consumers, thus e-commerce, in the long run and establish a mutual relationship. Although Creative Commons was established with no communication between consumers and creators, future solutions will require a degree of interaction to further strengthen this bond. E-commerce is very fragile, yet as the world becomes mores electronic, e-commerce will become an important aspect of the economy. If mutualism is not established between creators and consumers soon, e-commerce will crumble and fail to contribute to the future economy. By fixing such problem today, e-commerce will not only prosper henceforth, but transform how business is conducted between consumers and creators where mutualism is quintessential to long-lasting success in the business world.

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