

Social Commerce: Looking Back and Forward

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ABSTRACT

Social commerce can be briefly described as commerce activities mediated by social media. In social commerce, people do commerce or intentionally explore commerce opportunities by participating and/or engaging in a collaborative online environment. As a relatively new phenomenon first widely acknowledged in 2005, social commerce presents new opportunities to examine issues related to information/content, business strategies, management, technologies, and people's behavior. This article presents a qualitative longitudinal study which systematically examines technological features and tools in social commerce websites to illustrate their evolution and impacts on the formation of social commerce practice today and its potential future. Using captures crawled by the Wayback Machine, fifteen websites are analyzed from the year they were "born" to the year of 2010. The analyses are guided by a semi-structured checklist of expected and desired tools and features based on a literature review in social commerce. The study finds that social commerce activities appeared as early as the late 90s and that there are different approaches to incorporating social channels and social networks. In addition, the findings support a preliminary classification of social commerce websites, a realignment of the term's conceptualization and the anticipation of possible new directions for this market segment.

Keywords

Social Commerce, Social Shopping, qualitative longitudinal study, Wayback Machine. Web 2.0, Social Media.

INTRODUCTION

Social commerce officially appears in the literature in 2005 to refer to ecommerce new way of doing commerce. More than just a buzzword or a neologism for the combination of social media and ecommerce, it represents an emerging phenomenon stimulated by the web 2.0 wave (Wang, 2009; Wang & Zhang, forthcoming). Through wish lists, fora, chat rooms, locator applications (geo-tagging), blogs, podcasts, tagging, social networks, ranking, recommendation systems, etc.; social commerce enables consumers to share information, experiences and opinions

about what, where and from whom to buy (Jascanu, Jascanu & Nicolau, 2007).

In this new way of commerce mediated by social media, both consumers and firms benefit. Consumers make informed decisions based on information not only from the firms, but also from other consumers. Firms can make more profits by attracting and alluring potential buyers via positive recommendations by existing consumers. Mardsen (2010) sees social commerce as an alternative way to monetize social media by the application of a two-way strategy: by helping people to connect where they usually buy or by guiding people to buy where they usually connect.

Thus, this phenomenon is a rich territory in which to explore issues strongly connected to the Information Science realm, such as: information behavior, information sharing, user-generated content (UGC), web 2.0, collaboration resources and platforms, web presence and crowdsourcing, to name a few.

Not surprisingly, good practices in social commerce, especially the ones concerning the information perspective such as recommendations, reviews and ratings, have been expanded to other sectors of society than the retail sector. Libraries are a good example of this "benchmarking" where referral and user generated content have been assuming important functions for strengthening ties between community members in digital environments such as OPACs and repositories.

Based on the evidence of how social commerce websites and practices are mushrooming over the years and how they contribute to the understanding of some important issues addressed by the Information Science field, this empirical study analyzes what technical features and tools have been incorporated in what ways over time in social commerce websites to support people's engagement and participation as well as business strategies.

THE SOCIAL COMMERCE LITERATURE

The label "social commerce" is first introduced by Yahoo! in 2005, with the earliest academic article entailing it in 2007 (Jascanu, Jascanu & Nicolau, 2007). The starting point for the concept is believed to be based on the book *The Wisdom of Crowds* by James Surowieck, where he outlines the key principles and benefits of collective actions

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for better decisions and for what he defines as collectively intelligent solutions that are based on the principles of opinion diversity, people's independence, decentralization and aggregation (Surowieck, 2004). Social commerce is envisioned to combine both B2C (Business to Consumer) and C2C (Consumer to Consumer) approaches. Consumers can collaborate and shop in an environment similar to social networking platforms combined with one or more remotely located shopping partners (Zhu, Benbasat & Jiang, 2006; Leitner & Grechinig, 2007a, 2007b; Stephen & Toubia, 2010).

Both the concept and the practice of social commerce have been constantly evolving, with recent trends pointing to an even more prolific expansion to the mobile platform (Wang & Zhang, forthcoming). A survey conducted in the UK with 2000 respondents aged between 18-65 years old reveals that 53% of consumers review items and services online (Immediate Future, 2010). The same report finds that consumers' reviews are considered 157% more effective than traditional advertisements, indicating the power of consumers' opinions in final purchase decisions.

The literature also introduces some key concepts that are frequently associated with the social commerce phenomenon, as described in Table 1. From those, Crowdsourcing, Consumer Centric Communities and User Generated Content are often applied to discuss the people-based aspect of social commerce. In contrast, the other three are applied more often to discuss strategies to promote appropriate virtual environments for social commerce activities, and how firms can benefit from them.

Wang & Zhang (forthcoming) introduce a framework to understand social commerce from four perspectives: people, business strategies, technology, and information. The *people* perspective represents the individuals, consumers, communities and societies which are essential to the social aspect of social commerce. The *business* perspective embraces strategies, business models and opportunities for retailers and other entities that are perceived to benefit or to make profits from social commerce transactions. The *technology* perspective refers to the information and communication technology infrastructure and applications responsible for social commerce's technological feasibility. The *information* perspective symbolizes the particularity of this extremely content driven environment where a considerable and rich amount of content related to business, products or services, or which is simply social in nature, is constantly produced (Wang & Zhang, forthcoming).

<i>Concepts</i>	<i>Definitions</i>	<i>References</i>
Consumer Centric Community (CCC)	A community which allows the use of the synergistic experience of crowds, characterized by intensive communication between potential customers and step-by-step aggregation of information about products, prices and deals.	Leitner & Grechinig (2008a; 2008b)
Crowdsourcing	Combination of "crowd" and "outsourcing" coined by Jeff Howe in 2006 to represent the gap between professionals and amateurs, which has been diminished, and the importance of taking advantage of the talent of the public (the crowd).	Leitner & Grechinig (2007b; 2008a; 2008b)
Multichannel Shopping	A technological structure which enables consumers to purchase retail products in a consolidated fashion, using multiple channels (store visits, catalog browsing, phone calls, online shopping etc.). The application of different channels to enhance users' online shopping experience.	Leckner & Schlichter (2005)
Revenue Models (for Social Commerce)	Alternative ways to make money/profit and benefit from the shopping transaction. Some often applied to social commerce websites are: onsite/contextual advertisement, affiliate programs (directing users to third-party companies), membership fees and direct sales.	Leitner & Grechinig (2008); Kang & Park (2009)
Service Oriented Architecture (SOA)	A system architecture approach which views every application or resource as a service, implementing a specific identifiable set of business functions, by combining multi-channels and real-time applications.	Liu, Jih-Shyr & Pinel (2005)
User Generated Content (UGC)	The collection of content (comments, reviews, ratings, etc.) which represents the evaluation of online shopping experiences and consumers/user's opinion about brand reputation as well as the tangible (product) and intangible (service) aspects of the shopping event.	Ghose & Ipeirotis (2009); Leitner & Grechinig (2008a; 2008b)

Table 1 – Social commerce correlated concepts.

Using Wang and Zhang's framework, we summarize the literature on the most common issues identified in social commerce (Figure 1).



Figure 1 – Issues addressed by the academic literature in social commerce.

Based on the literature review, several expected and desirable technological features and tools are identified to support business strategies, people engagement and interaction, and information production and sharing in social commerce. These are classified in Table 2.

	Category	Features
Expected	<i>E-commerce functions</i>	shopping cart/bag, checkout/payment, product visualization (images), product price, shipping
	<i>Social Channels</i>	chats, fora, groups/communities, friends' lists, user's blogs, website blog, user's profile, wiki platform
	<i>Content to Socialize</i>	emoticons, favorites, images (buyers' choice), open comments, wish lists, podcast/videos, rankings, ratings, tags, tag clouds, polls
Desired	<i>Social Networks</i>	Bebo, Delicious, Digg In, Facebook, Foursquare, Hi5, Myspace, Second Life, Stumble, Twitter
	<i>Organizers/ Mgmt Tools</i>	calendars, geolocators, price comparison, RSS (syndication), to-do lists, shoptlists, price alerts
	<i>Mobile</i>	Site mobile version, mobile apps
	<i>Augmented Reality</i>	3D bar codes, avatars (shopping assistants), avatars (user), virtual reality tools (fitting rooms, shopping visit)

Table 2 – Expected and desired technological features.

Expected Features

- Because they are considered the next generation of ecommerce, social commerce websites are expected to inherit some ecommerce functions which are listed, but not exhaustively described in table 2.
- Social channels correspond to the endogenous spaces which are provided by websites for users to interact with each other and to establish a trust network. Also, it can be an alternative for retailers to curating their own consumer data warehouse and can allow them to preserve an internal shopping environment, without directly involving third parties.
- User Generated Contents produced by social commerce websites are considered a critical element in social commerce.

Desired Features

- Social Networks represent the external social structures with which websites can bridge connections and enhance consumers' shopping experiences. It assumes a broad meaning which includes virtual communities and bookmark-sharing services within communities or by groups' members. Also, this is a desired element to achieve social media monetization strategies (Mardsen 2010). It might be argued that this is also an expected feature; however, that classification assumes that an internal social channel would be sufficient to build the collective ties/nodes for a social shopping activity.
- Organizers/Management Tools are desired elements to enhance a shopping experience. They can help consumers plan their research and buying activities, be alert to sales and best deals, and receive updated information according to their interests and profiles.
- The sophistication and pricing reduction of mobile devices/technologies (smartphones and personal digital assistants PDAs) promote a revolution in web access behavior. The pocket-size computing is been a strong competitor of the desktop generation. Thus, this popularization is an important indicator for social websites to be aware of and, to facilitate the shopping experience, to provide appropriate web interfaces and applications for.
- Augmented reality functions blend the real world and computer generated data/content. Liu et al. (2005) , Ye et al. (2005) and, Shen; Khoury & Shirmohammadi (2007) state that virtual reality (VR) and artificial intelligence (AI) help promote more realistic communication and interaction with products through more human-like interactive interfaces, which would be a desirable feature.

The literature analysis results are used to guide the empirical analysis of a set of social commerce websites, as detailed below.

RESEARCH METHOD

Given the novelty of social commerce and the lack of academic studies in this sphere, social commerce has been approached more in a speculative way than discussed based on empirical evidence. To overcome such gaps, this study is

rooted in examining evidence in order to draw conclusions on social commerce scenarios. Specifically, we are interested in taking the technological perspective to examine the technical features and tools and to illustrate their evolution and impacts on several aspects of social commerce, such as business strategies, people's behaviors, etc. In other words, we address these research questions: what technical features and tools have been incorporated overtime in social commerce websites? What functions these features and tools have been performed to support people's engagement and participation, and business strategies?

From the four perspectives proposed by Wang & Zhang (forthcoming), this research focuses specially on the technological perspective. Technological features and tools represent the backbone for social interactions, content generation and information sharing. Thus, through observation of the tools incorporated in social commerce websites and by verification of their functions overtime, it is possible to infer different business strategies and practices by firms over the years. In addition, among the four perspectives, technology is the most explicit and tangible for observational purposes.

This study provides systematic and repeated observations overtime to identify the progress of social commerce websites tools and technological features. Therefore, the study follows a qualitative longitudinal research design.

Traditionally, longitudinal studies are applied to measure and analyze variables and predictors over time through regression analysis in quantitative research (Hedeker & Gibbons, 2006). Holland, Thomson & Henderson (2006) emphasize the limitation of quantitative methods in Social Sciences and stress the importance of qualitative research for the examination of a process, taking its context and particularities into account. The authors believe that "qualitative longitudinal research is predicated on the investigation and interpretation of change over time and process in social contexts" (Holland, Thomson & Henderson, 2006, p. 1).

Because the universe of social commerce websites is somewhat incommensurable and a plethora of new websites is added to the World Wide Web every day, the selection of relevant cases for examination is challenging. To avoid bias or an arbitrary selection, we selected websites according to the most recent list of top social commerce websites, published in 2008, by the renowned blog Social Media Trader¹, which compiled the monthly traffic data from three different sources: Compete, Quantcast and MSN Adlabs. The original list contained 17 websites, among which Zebo (www.zebo.com) is no longer in activity and Glimpse (www.glimpse.com) is not accessible. As a result, a total of 15 websites were included in this study (Table 3).

A longitudinal qualitative study requires researchers to have access to observe the same cases over time. In our study,

¹ <http://www.socialmediatrader.com>

such data would be the exact interface within the different features of a particular website at the time of observation. The Internet Archive Wayback Machine (WM, <http://web.archive.org>) provides an ideal tool for our data collection. WM has been maintained by the Internet Archive Initiative since 1996, a non-profit organization which curates a digital library of Internet sites. WM captures non-static screenshots through the lifetime of an URL since 1996 or since the URL's inception. The new version of WM has more visual features than the former and displays a calendar with the websites' captures, from which the evolution can be tracked by years, months and days.

Despite the fact that Wayback Machine can present some limitations of navigation within the web pages of a given website due to password-protected zones, robots exclusions or in conditions in dynamic sites, it is been recognized as a valuable instrument to track and investigate the evolution of websites. For example, Murphy, Hashim and O'Connor (2008) conducted a research study on WM validity for data collection and for scientific arguments' support purposes. They conclude that, regarding predictive, nomological and convergent validity, WM is a reliable source for tracking websites' content, age and updates. They underscore that this tool is essential for researches who aim to explore the evolution of websites instead of using one point investigations, because it provides a basis for longitudinal studies in an environment that is known as extremely ephemeral and unstable.

Website	URL	Period Covered	Total Captures WM*	# Captures Analyzed**
Amazon	http://www.amazon.com	1999-2010	3,350	24
Buzzillions	http://www.buzzillions.com	2007-2010	137	8
Crowdstorm	http://www.crowdstorm.co.uk	2007-2010	69	8
Epinions	http://www.epinions.com	1999-2010	1,732	20
Etsy	http://www.etsy.com	2005-2010	881	12
Kaboodle	http://www.kaboodle.com	2005-2010	561	12
Osoyou	http://www.osoyou.com	2007-2010	127	8
Reevo	http://www.reevo.com	2005-2010	108	12
Shopstyle	http://www.shopstyle.com	2006-2010	370	10
ShopWiki	http://www.shopwiki.com	2006-2010	361	10
Stylefeeder	http://www.stylefeeder.com	2005-2010	248	12
StyleHive	http://www.stylehive.com	2005-2010	275	12
ThisNext	http://www.thisnext.com	2006-2010	291	10
Wishpot	http://www.wishpot.com	2006-2010	200	10
Wists	http://wists.com	2004-2010	923	16

*Not equivalent to websites' update. The number represents how many times the URL was crawled by WM. As of, March, 31 2011.

**The first and the last captures of each year.

Table 3 – Social Commerce Websites Analyzed.

In this study, for each of the 15 websites, we considered only the first and last captures per year, from the website's initial activity to the end of 2010. The strategy is to enrich the analysis, but also to preserve a standardized way for operating the data collection in circumstances where the websites did not have an equal number of captures or were not captured on the same days of a year. Each capture was then explored and navigated (whenever possible) to gain more details. The data obtained was coded in a spreadsheet. A semi-structured checklist based on the expected and desired technological features (Table 2) guided the data collection and a preliminary coding scheme, which was flexible for the inclusion of possible non-predicted and non-listed features and tools. Data analyses were conducted to examine data across years and across websites to gain a holistic picture of social commerce websites.

FINDINGS

It is important to report that the data collection misses some data for Amazon.com. WM did not capture any screenshots in years 2000 and 2001. Thus, from the expected 24 captures for 12 years (1999-2010), only 20 were incorporated in the study.

Also, it is also important to underscore that the research did not aim to establish direct comparisons between websites or to evaluate them in terms of completeness of technological features or tools, but rather to collect, in a very exploratory way, evidences of the social commerce trails over the years and to provide a narrative of facts, with the expectation of contributing to a better understanding of this phenomenon. Any attempt at a one-by-one comparison would require at least that the cases have the same target market and same period of existence, characteristics which our data collection does not present. Moreover, a retrospective analysis would not be sufficient to provide explanations about possible discrepancies without in-depth knowledge of the historical circumstances of each case.

Due to the extensive dataset and the purpose of the study (to gain a big picture of social commerce websites as a whole) the findings are presented in subsections according to the main observations.

Surprise! Social Commerce Found in Late 90s

Despite the fact that social commerce is officially labeled around 2005 by practitioners in trade articles (Wang, 2009) and two years later in the academic literature, our findings show that social commerce is in action in the late 90s, if not earlier.

Amazon and Epinions are earlier adopters of an initial referral shopping strategy. In the first capture in August 1999, Amazon's website shows the feature "purchase circles", which has the same purpose as the currently well-known recommendation systems and consumer communities. Wish Lists and email indications of products to friends are also offered to consumers and visitors around that time.

With a different name, but with the same purpose of sharing experiences and opinions, also in 1999, Epinions offers the option of open reviews, ratings (stars), gift recommendations, forums for members and what is called a "community of trust". Basically, an internal social network is composed of members who are selected at consumers' discretion according to their reputation in the community as good or helpful reviewers.

Such evidence indicates that the dawn of social commerce initiatives had happened several years before social commerce was officially named and gained broad attention in the mid of 2000s.

Ecommerce Functions: Essential for Social Commerce?

There seems an expectation that ecommerce functions are basic requirements for social commerce websites. Yet, out of the 15 websites, only Amazon and Etsy present functions for consumers to accomplish shopping activities after selecting product(s)/service(s) with tools such as shopping cart/bag, shipping options selection, payment zone/safe https, and confirmation. On the other hand, all 15 websites provide users with product/service descriptions, prices/price comparison, pictures or videos, and the possibility that the shopping transaction may be completed in a third party (external) website.

This discovery makes us wonder about a point that is still not explored by the literature: what essentially defines a social commerce website? Presumably, the literal interpretation of the term requires commerce transaction functions, but if the buying intention is present despite the lack of purchase accomplishment at the website, then can we still consider that website as a social commerce website?

The web environment makes it difficult to set the boundaries of where a consumer starts or ends a shopping activity. Furthermore, not all consumers access online stores with the final purpose of buying online. Some might use those spaces essentially for collecting impressions and opinions which can support their decisions about a selected product which will be purchased in another online or brick and mortar site.

In this sense, the literature analyzes and the empirical study discloses a broader view of the concept. Collectively, social commerce can be understood as the activities by which people shop or intentionally explore shopping opportunities by participating and/or engaging in a collaborative online environment.

There is clearly a lack of consensus on what is defined as a social commerce website. For example, Amarasinghe (2010) presents an idea of a "true" social commerce website, where the social commerce business model is a result of the intersection of an ecommerce firm and social network websites in order to avoid scalability and revenue models traps (Figure 2). Nonetheless, even the author questions whether some examples really fit the true business model.

Based on the analysis of the 15 websites, we establish a preliminary categorization for social commerce websites: direct sales and referrals.

- Direct sales: this category includes those social commerce websites that count on an internal full-transaction platform for commercialization, such as Amazon and Etsy, from which, if desired, consumers can complete the full purchase cycle without being directed to third parties. Amazon is an example of B2C blending internal socialization between consumers, whereas Etsy follows a C2C approach through a community centered market place composed by artists and collectors who buy and sell on the website.
- Referrals: this includes websites at which potential buyers can explore others' recommendations and opinions to form better informed purchase decisions. They bridge consumers to different retailers. Potential buyers can compare prices and reviews about different retailers and complete purchases by necessarily being directed to external websites. These social commerce websites make profits by promoting the names of retailers and indicating them as alternatives for purchasing, rather than from direct sales activities. This includes all 13 of the other websites studied.



Figure 2 – Truly Social Commerce Websites².

It is possible to foresee another category that may not appear in the 15 websites we studied but can be found in several current social commerce websites. This category refers to aggregators of auctions and bids to accommodate collective buying initiatives, such as Groupon (www.groupon.com) and Living Social (www.livingsocial.com). Basically these websites offer timed daily deals clustered by region/location. Functioning as mirrors of promotions and discounts, these initiatives benefit by getting a cut of the deal from the advertised retailer. Meanwhile, consumers receive and/or share those deals through social networks and can benefit from the discounts if a certain number of buying transactions is achieved. In this case, the purchase of coupons or tickets is done through the website, but the product or service checkout

is done directly with the retailer/firm. As none of the 15 website under investigation adopts this revenue model, further empirical research would be required for a better comprehension of this category and to develop a more complete classification for social commerce websites.

It is also interesting to discover how some firms reposition themselves in the social commerce market. Emerging in 2004 as a beta version of a visual bookmarking website, Wists claims that members would benefit from having a “universal shopping cart” based on their wish list to be accessed from anywhere and shared with their friends. By the middle of the year 2005, they adopt the social shopping label to represent their business, which has been consistent since then.

Longitudinal tracking of the 15 websites reveals that many websites (e.g. Kaboodle, Reevo, Wishpot, Osoyou and Buzzillions) become available first as a beta version during the initial months or in the first years of activity (with the exception that when first appearing in 2006, Stylehive is an alpha version in its logo). Such data are open for interpretation, but they apparently reflect the experimental stage of or their tentative entrance into the social commerce market.

Most Common Practice: Trustworthy Social Content

To attest unbiased reviews seems to be a major concern of some social commerce websites, especially the referral ones. The slogan of Epinions in 2001 is: *“Before you buy - get unbiased advice, discover the best product for you, find the best place to buy it.”* Reevo’s homepage in 2005 highlights *“Independent users, informed reviews the place where you can find people like yourself talking about products you’re thinking of buying.”* Similarly, when released in 2007, Crowdstorm has the announcement on its homepage *“impartial buying advice from a crowd of trusted people.”*

Using trust as a mechanism to strength members’ ties and credibility perceptions of user-generated content (UGC), in 2007 Buzzillions introduces the “verified buyers” resource to guarantee that buyers of a given product would be able to write reviews about it, which turns out to be the basis for its slogan: *“Verified buyers. Millions of reviews. Meaningful recommendations.”*

Promotion tags, recommendations, wish lists, ratings and reviews scores are the most adopted mechanisms for users to share content and for firms to apply UGC management as a business strategy. Tagging appears in 2005 in Wists and Etsy. Starting in 2006, tagging becomes an essential element in social commerce and is adopted by all websites under analysis.

Complementary resources such as tag clouds and tag lists also start to mushroom as alternative product locators and to produce more visual search resources. According to our observation, the first website to apply tag clouds is Epinions in 2006. In 2007, tag clouds start to be widely applied in the

² Retrieved March, 15 2011, from <http://www.amisampath.com>

interfaces of different social commerce websites such as Amazon, Reevo, and ThisNext. By 2008, tag clouds become a basic and consistent feature among all the 15 websites.

To complement written comments and recommendations, pictures and videos or podcasts provided by members start to appear to produce a less frigid and unresponsive environment for online shopping and for strengthening ties between members. This video-based referral approach is extensively adopted by ShopWiki in 2006 and becomes more massively adopted by other websites such as Reevo and Stylehive in 2007. One year later, Buzzillions implements a section called “reviewers in action” with postings of pictures from reviewers with their recent purchases.

In 2009, Reevo releases one interesting service that explicitly intends to maximize its profits from UGC, which the website has been accumulating over the years. Reevo Insight is an information service that provides retailers and manufactures predictions for the electrical industry based on reports of market watching and on the website’s metrics. The service is repaginated in 2010 and divided into two different more focused, but associated, services offered to e-retailers: Crowd Commerce and Rich Reviews.

Social Channels

As previously mentioned, this research considers social channels as the internal tools and/or platforms which are responsible for establishing communication among consumers and for providing them an internal space to socialize their opinions, perceptions and profiles.

With the exception of Wists, all the other 14 websites provide internal environments. Fora, communities/groups based on styles and preferences, chat rooms and personal blogs are often encountered. There are variations in names; for instance, Stylefeeder releases the “Tastemaker’s diary” in 2008 as a way for consumers to post their acquisitions and to compose new looks for good deals and opinions.

Some social channels are devoted to establish a direct connection between consumers and experts or consumers and idols/celebrities. Since 1999, Epinions offers the network “Epinions experts” who are real buyers. In a different direction, Amazon Connect starts to appear in 2006 as an entirely new channel of communication between authors and readers. Users can interact with not only the writers, but also other users interested in the same authors.

Similarly, Stylefeeder in 2007 and This Next (one year later) adopt the approach of involving fashion designers and fashion experts, bridging communication between members and specialists.

Between 2007 and 2008, Shopstyle, Wists, Stylehive and This Next start to incorporate a sort of internal social network, not by using the same micro blogging function offered by Twitter, but by applying the followers’ terminology.

Perceiving the need to keep a trustworthy environment for members, all 15 websites present some recommendations for community or group participation, service terms and conditions or information policies³ for general use. In some cases, reviews can be flagged when inappropriate. Conversely, in others websites such as Kaboodle and Buzzillions the idea of flagging is associated with the positive idea of “spreading de word” and sharing.

By 2009 Stylehive invests in a complete internal platform which resembles some of the main features of social networks. In this platform, the website integrates several functions such as member descriptions/profiles, pictures, activity stats and histories, messages, wish lists, follower members, and followed members, and communities/groups.

Participation in websites’ social channels often requires direct free membership. In generally, the access to members’ pages/profiles, communities and groups are open to external users. Only ShopWiki in its first year online (2006) restricts access; still, some features could be detected from the homepage.

External Social Networks and Bookmarking Services

All the examples of social networks and social bookmarking services listed in Table 2 are encountered in some of the 15 websites analyzed. We find even more examples than those in the initial checklist.

Some examples of additional services are: Backflip, Blogmarks, Faves, FeedMeLinks, FriendFeed, kIRTSY, GoogleBuzz up, Link-a-Gogo, LinkedIn, Mister Wong, Mixx, Multiply, Netvouz, Netvibes, Newsvine, Propeller, Reddit, Segnalo, Simpy, Sk*rt, Spurl, Reddit, Tailrank, Live Journal, Xanga, and Friendster. Presumably, Facebook and Twitter are the most popular occurrences at websites’ interfaces.

Wish Pot introduces login via Facebook account in 2010 and the “like it” feature on the interface, providing linkage to this social network. Kaboodle is the last adopter of social networks, which incorporated Facebook, Stumble and Twitter to its interface in 2009.

It is noteworthy that until 2010, six websites do not have links to any external social networks or bookmarking services through their interfaces: Amazon, Epinions, Etsy, This Next, Osoyou and Crowdstorm. This might be an option to preserve UGC internally and to provide the firm a better control and management of it. However, from a business perspective and user-oriented perspective this more endogenous approach might incur some consequences, which may represent a potential field to be explored in the social commerce arena.

³ Only the existence or not were verified. No analysis of the content was conducted.

Organizers and Management Tools

The most widely adopted organizer and management tool among the 15 websites is Really Simple Syndication (RSS) which provides users a history of updates of a given URL without requiring access to the website. Its first registration in the dataset is in 2004, and this tool maintains consistency over the years.

Price and deal alerts, currency convertors, calendars, to-do-lists, shopping and navigation history are also found among the websites. This Next and Etsy are innovative in applying Geolocators in 2008, with the objective of demonstrating the concentration of reviews closer to the user location. One year later, Buzzillions adopts this tool with the same purpose.

Several mechanisms to sort searches, results, reviews and reviewers are found. In 2007, Buzzillions innovates the "four-steps-locator," a sequence of questions about consumers' preferences and profile, in order to refine results and provide recommendations. In the same year, Osoyou implements an image manager called "Drag and drop hanger," a shopping tool that allows users to drag items from different retailer's web pages and compose a virtual scrapbook to be shared as wish lists or kept for records and further purchase purposes.

Mobile and Augmented Reality: Underexplored Features

Our analysis shows that only a few websites offer mobile services until 2010. Amazon is a pioneer in this. In 2002 the website announces a service for auctions alerts and website contents through web-enabled cell phones, Palm VIIi or Pocket PCs. Later, in 2008, Amazon Window Shop is released as a more visual alternative service and to promote an alternative display of products, and to facilitate navigation through mobile devices.

Up to the last captures by WM in 2010, only two other websites present mobile alternative sites. Wish Pot, starts in 2007 and Reevo in 2008.

In the literature, Virtual Reality (VR) is often associated with social commerce environments, due to the possibility of simulating a real shopping experience (Ye, et al. 2005). Ye et al. (2005) present a prototype for the design and implementation of an online store through which the communication between consumers and collaborative shopping activities is established in a virtual shopping mall environment. Multiple agents are able to search and recommend products according to customers' preferences. Customers are able to choose and customize their avatars, walk around the virtual environment, look over and manipulate the products through a secure transaction system.

In reality, though, our analysis shows that no related features such as avatars, virtual visits to a store or virtual fittings rooms are identified in the 15 social commerce

websites. Aware of the potentials of VR, some other online stores⁴ have been developing or incorporating VR technology provided by third parties to improve the user's experience. Specifically for apparel online stores, virtual fitting rooms are applied to improve buyer decisions and match expectations, and, as a consequence, to reduce the costs associated with products' returns.

Even though mobile applications and VR technologies are not considered essential elements for social commerce activities, there is no doubt that these are desirable features for improving user experience. From a market vitality and permanence standpoint, it is possible that in the future those two categories will move to expected features.

Summary: A Social Commerce Timeline

To unify some of the key breakthroughs and features found in the 15 websites during a timeline analysis of twelve years (1999-2010), we present the finding summary in a visual way in Figure 3. Specifically, the first appearance of a feature or tool is depicted, along with the hosting website(s). Collectively, Figure 3 shows the milestones of technological features or tools that play an important role in defining social commerce today.

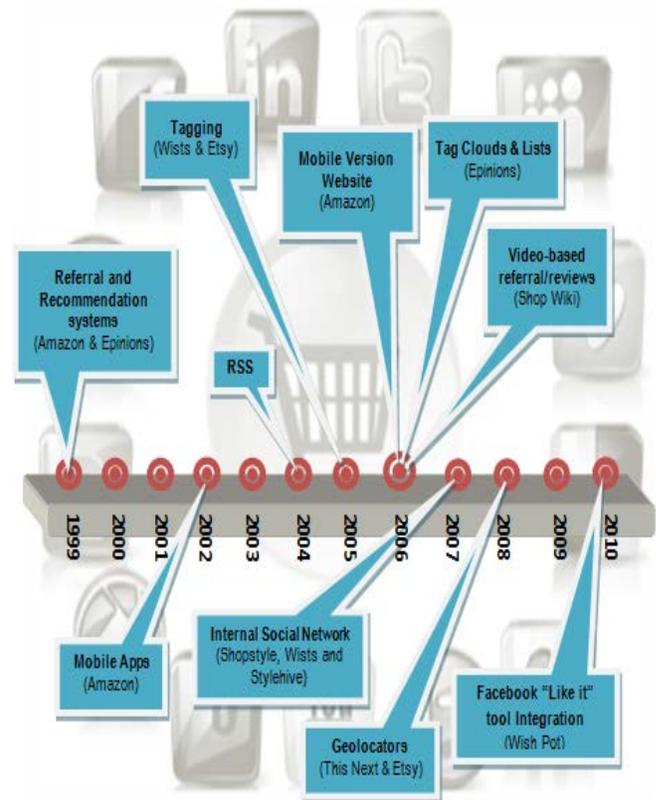


Figure 3 – Social Commerce Evolution.

⁴ Macy's is one example that implements this technology in 2010.

CONCLUSION

Before concluding the study, we need to realize its limitations. The findings are bounded by two important factors: the 15 social commerce websites selected for the analysis, and the available captures by the Wayback Machine.

This paper presents a longitudinal qualitative study of the evolution of social commerce based on the analysis of 15 cases over a timeline of 12 years. The data obtained from a systematic observation and analysis through WM captures are fairly rich and allow us to detect some interesting facts about the social commerce trajectory. The narration of these factors and its visual representations not only provides a better understanding of the collaborative online shopping phenomenon, but also stimulates reflections on its current stage and its future directions.

The exploratory nature of this research discloses some potential topics to be further investigated. First, it would be interesting to look at the rudimentary classification of social commerce websites addressed by this paper and expand it based on the analysis of a bigger number of social commerce websites. Second, the maturity of social commerce websites also might be an interesting aspect to be analyzed. The beta and alpha versions data provided some insights, but could not be supported by evidence from WM. Third, comparative studies could be carried out to investigate the reasons that lead companies to maintain social activities restricted to internal tools and platforms or to explore third party services as a possible theme to better understand the mechanisms of social commerce.

Our study is one of the few empirical studies on social commerce which depicts some interesting features of social commerce that may be contrary to common wisdom or understanding. The study contributes to the academic literature on social commerce, which is still modest. Furthermore, this research contributes directly to the area of Information Science and Technology due to a common interest in studying the environments and contexts in which people, information and technology interact and interplay.

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