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THE IMPORTANCE AND USE OF SOCIAL MEDIA IN BUSINESS AND
SUPPLY CHAIN MANAGEMENT

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Abstract:

The amplified needs of consumers, pressures from suppliers, ever-increasing competition, and escalating complexity of supply chains, leaves companies searching for a cost-effective solution to facilitate their continuous improvement efforts. Visibility, a known issue for supply chain professionals, if improved, can enhance supply chains immensely: improving forecasts, decreasing inventory levels, mitigating and minimizing risks, and overall improving day-to-day operations. In addition to increased visibility into the entire supply chain, with greater communication both internally across functions and externally with suppliers and consumers, a company's supply chain will certainly become more collaborative and much more profitable. The answer to finding a cost-effective solution to drive supply chain efficiencies may lie in the Internet's newest form of technology still currently on the rise. This technology is called social media and its use in the area of supply chain management is the topic of this thesis.

Generally speaking, social media is any form of electronic communication that creates a forum for open dialogue amongst users. Companies today typically leverage social media for marketing and promotions and/or for recruiting and networking. In relation to supply chain management, this Internet-based phenomenon has the potential to enhance value through engaging in internal and external communication, identifying and monitoring risk, managing transportation, and improving overall visibility and efficiency. In its many forms, social media can be used through Twitter to relay instant messages and updates, or even in conjunction with RFID to monitor and track products through the supply chain. By learning from other internal departments currently benefiting from

social media, supply chain professionals can leverage its uses and enhance the company's supply chain management.

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Introduction:

Social media is certainly not turning out to be solely a short-term phenomenon for social interaction and communication. Social interaction has changed throughout the ages with the inventions of the telephone, computer, and now mobile devices, like smartphones and iPads, which greatly facilitate communication between individuals or among many individuals. With this ease in communication, the proliferation of social media took off. When Mark Zuckerberg founded Facebook in 2004, little to his knowledge, he started another online revolution. Other sites such as MySpace had been around for some time, but nothing took off the way Facebook did for its users. Beginning as an internal network for people to communicate with family and friends, Facebook has expanded into the business realm. As an example, it has become a forum for companies to communicate internally among various functions as well as externally i.e., directly with their customers.

Darwin proved to the universe that his theory, “survival of the fittest”, applied to man, and it is safe to say, that his theory is currently proving true for technology. As technology expands, companies must adapt and embrace it or they will fall behind and get lost in the marketplace. Marketing and advertising professionals have adopted this theory, however other businessmen and women are still skeptical. So, what exactly is social media? Why are so many businesses now interested in social media and is there an application in supply chain management? What benefits can be derived from the use of social media in the supply chain context? How have other companies utilized social media within their organizations? This thesis sets out to explore these questions along

with others to determine if and/or how social media can revolutionize companies' supply chains and lead to greater efficiencies.

Social media can be defined in a multitude of ways. In its most basic form, social media is any form of electronic communication that creates a forum for open dialogue amongst users. That being said, Facebook equals social media, but social media definitely does not equal Facebook. Could a forum for open dialogue be beneficial for supply chain professionals? Social Media, in relation to supply chain management, has the potential to enhance value through facilitating internal and external communication, identifying and monitoring risk, managing transportation, and improving overall visibility and efficiency. Easier said than done, true. However, the technology is already available, and typically not costly, so once implemented, the benefits should certainly outweigh the costs.

As a demand planner/allocator/inventory analyst, imagine a world where you are no longer forecasting based on information from previous years, but rather from current information coming in every second from your customers related to where their interests are and where they are headed. Suppose you are in the transportation/warehousing department of your company's supply chain. Then, social media can alert you and everyone in your division of any weather alerts, traffic/accidents nearby, deliveries, delays, etc. Additionally, as a customer service representative, you can have the ability to track and respond to customer issues and concerns in real-time.

Email has changed the world of speedy communication, but social media has revolutionized it. How? By utilizing social media, communication can occur across many interested parties. Instead of one to one information flows like most emails, communication and information through the use of social media can be broadcast in a

multitude of ways: one to one; one to many; and many to many. People can collaborate and share information more than ever before in a variety of different ways. So, if your current marketing department is using social media, talk to them to see how you, as supply chain professionals, can implement social media to enhance your organization in its entirety.

Literature Review:

A literature review was conducted to determine the use and extent of social media in various aspects of business. This will include its avid use in marketing and human resources, the two functional areas that have embraced this new technology faster than other parts of business, and how these uses can be applied to supply chain functions. Next, it will focus on the social media use and advantages in supply chain management, including information sharing and communication within/across the traditional functions such as transportation, warehousing, and customer service. The literature review revealed several themes: First, supply chain professionals *are* interested in learning more about social media, but are skeptical of its value and unsure of where to begin and how to implement. Second, the potential benefits have been identified, but not yet realized, including, but not limited to: increased visibility, enhanced communication and collaboration, risk mitigation, and customer satisfaction. Third, there are a variety of social media tools, other than the standard household names, Facebook and Twitter, which can be used to enhance supply chains.

The following is a discussion on the various literature found in this research. This section will start with the use of social media within the business context, including marketing and human resources, and then, move to specific uses and benefits within a supply chain management context, finishing with some of the social media technology currently available.

Marketing

Social media, beginning as a mere Internet fad, turned into a new realm of business for both marketing and human resource departments within companies. The 2011 Social Media Marketing Industry Report explains some of the greater findings from the use of social media in marketing amongst companies. The report found that ninety percent of marketers believe social media is important for their business, with the top four social media tools used including: Facebook, Twitter, LinkedIn, and blogs. From a marketing standpoint, the greatest advantage (eighty-eight percent) gained from the use of social media is to generate more business exposure, followed by increasing traffic to their sites (seventy-two percent). It was also noted that a greater number of business-to-business companies have been using social media longer (52.6 percent) than standard business-to-consumer companies. This is interesting to point out because many supply chains are more focused on business-to-business relationships, allowing them to benefit from social media as well. Also a positive aspect that could be leveraged from a supply chain perspective is the discovery that seventy-two percent of marketers who have been using social media for three or more years, have reported that it helped them close business deals. In addition, forty-five percent of marketers who have only used social media for one year or less reported that they have begun new partnerships. Based on these two statistics alone, it is clear that social media has helped marketing professionals establish new relationships, enhance old relationships, and gain more business. Supply chain professionals can achieve all of these benefits realized by marketing departments by utilizing similar social media strategies to network and communicate with suppliers and customers. Moving into the future, B2B marketing is aiming toward increasing its

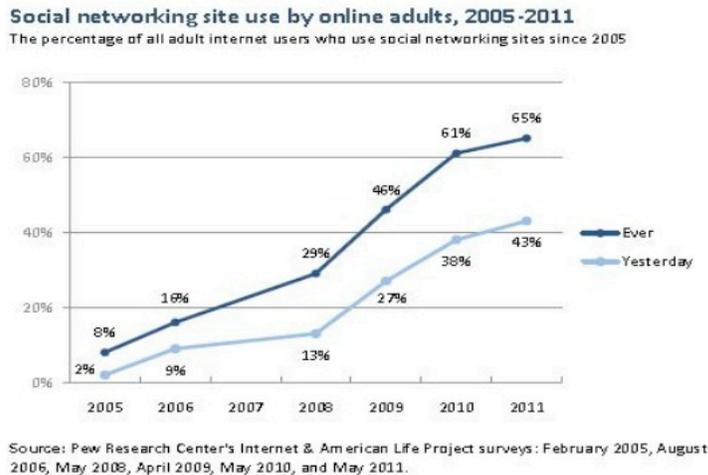
presence on YouTube through webinars and company videos. Additionally, they plan on increasing their forum usage (Stelzner, 2011).

In addition to these statistics detailing the overwhelming acceptance and benefits derived from social media from a marketing standpoint, there are also useful tools that can be taken advantage of more widely. Twitter contains tools such as Tweepi and Twello that “allow you to find users who belong to your target audience and identify the most influential users” (Gallop, 2012). By using these features, you can create a list of people/companies that you think may benefit your company in some way, and they in turn, may decide to “follow” you, thus nurturing a potential relationship. Also surprising to some, on Facebook a user can create a poll. This can then be used to survey employees internally regarding pressing issues, company policies, or even to establish dates for an event. The polls can also be used externally to gain information from customers or suppliers (Gallop, 2012). Facebook, as of recently, has a new social media marketing tool that will assist companies in determining the impact of Facebook marketing traffic from users via their mobile phones. Marketers will be able to visualize six different metrics: “amount of activity business pages gain from the newsfeeds of their Fans, ...clicks content received from Fans viewing brand’s Timeline directly, ...Notifications, Bookmarks, Searches, ...and demographic and country breakdowns” for those who access their content (Facebook Tool, 2012). This is a step in the right direction in helping companies establish metrics and measure value received through the use of social media.

Another social media adopter, Searchmetrics, the world leader in search analytics software, developed its “Searchmetrics Essentials online tool, which allows global marketers to track and measure search and social media campaigns as well as analyze and

compare competitors' strategies” (Searchmetrics, 2011). This tool develops a social visibility score by analyzing the amount of ‘likes’, ‘shares’, ‘tweets’, ‘comments’, etc, the company receives on the social media sites. This score can be managed over time, or used “weekly to measure the impact of active social campaigns and marketers can compare their own performance against competitors” (Searchmetrics, 2011). This tool can potentially be very helpful in assessing the true value derived from social media campaigns.

Supply chain professionals should definitely consider learning from their marketing departments to take advantage of what they have already accomplished in the realm of social media and working with them moving forward.



(Exhibit A)

Social Media has been on the rise since the Facebook phenomenon beginning in 2004, and has risen from eight percent to sixty-five percent in a mere six years (Exhibit A). The majority of literature regarding social media’s use in business is contained in the marketing, human resources, and advertising departments as a method of business-to-consumer communication. The use of Facebook and Twitter specifically are ideal media

for companies to gain the attention of their customers and interact with them on a daily basis. Best Buy, for example, “engages about 5,000 customer dialogues per week through online forums, and has more than 1.3 million followers on Facebook, with whom it interacts regularly” (Firstbrook, 2011). Companies engage in free advertising, while gaining feedback on current products, promoting new products, and stimulating conversations regarding innovative ideas. Ford Motor Company used Facebook to its advantage by launching its 2011 Explorer crossover on the popular social media site. Statistics show that this Facebook launch gained higher levels of customer interest than a three million dollar Super Bowl commercial (Firstbrook, 2011). JetBlue Airlines and United Airlines are using Twitter to post information detailing fixed availability or last-minute deals on flights to intrigue customers with great deals (Firstbrook, 2011). Websites have become more interactive, linking visitors to their social media sites and encouraging open forums to discuss products and services. Even TV shows, namely talk shows, will encourage their viewers to follow them on Twitter or send in their own stories via social media forums. This encourages collaborative interaction between the business and consumer, involving the consumer and further engaging them with the product or service.

Human Resources

Marketing departments have certainly been the front-runners for using social media; however, human resource departments are increasingly becoming more involved. The most obvious way that human resources can take advantage of social media is for recruiting, as evidenced by the use of approximately eighty-nine percent of employers (Radian6, 2012). Radian6, founded in 2006, is a company dedicated to helping its clients engage in social media monitoring. In addition to standard recruiting, “Radian6 can help you build and maintain long-term professional connections online, raise awareness of your company, and cultivate a corporate culture by engaging in these social media conversations” (Radian6, 2012). As their website explains, “Radian6 provides organizations with a platform to listen, discover, measure and engage in conversations across the social web” (What We Sell, 2012). Because Radian6 is constantly listening and monitoring for discussion surrounding your company, “if anyone tries to take their resentment to social channels, the real-time nature of Radian6 can help you defend your company against critics quickly” (Radian6, 2012). This feature alone has become increasingly important due to the amount of negativity that can spread rapidly on social media, thus harming your company and its brand reputation.

In addition to focusing on external candidates and professionals, human resources can use social media within its own organization to harness increased benefits. In many companies, the human resource department is responsible for implementing and controlling the strategy for employee performance reviews. Rather than only discussing employee performance and goals once a year, Salesforce, along with the newly acquired Rypple, created a new software to better manage employees on a year long basis. John

Wookey, a Salesforce software development executive, described the benefits of this software when he said, “Rypple defines key results and actions, monitors the status of objectives and fosters a dialogue of the goals being set in the organizations, so people understand what’s expected” (Mitroff, 2012). Any member of the organization can access this service to create new goals, invite fellow employees to assist on projects, and to track progress along the way. Positive recognition is awarded through “badges” for any accomplishment, fostering appreciation of employees and a positive working environment (Mitroff, 2012). People naturally enjoy being praised and, therefore, will be encouraged to work harder knowing that others can see their progress and their ultimate success will be noticed.

Because of the “buzz” surrounding the concept of social media, supply chain professionals are eager to understand how and why they should begin using this technology to create similar interactions between trading partners.

Supply Chain

According to Capgemini Consulting's 2011 Global Supply Chain Agenda, company representatives listed the number one project planned for 2011 as improving supply chain visibility. Visibility was noted as "knowing where products and inventories are, being able to monitor order progress and being able to anticipate to unplanned events, like delayed transport or non-conformance quantities in the production process of subcontractor" (Capgemini, 2011). All suggestions provided to improve the visibility issue surrounded the notion of improving communication and coordination both internally across departments and externally with suppliers and customers. Social media's framework, based upon open and extended communication, may make it the perfect tool to solve companies' number one supply chain issue, namely visibility.

Supply chain professionals must begin looking at social media in a broader context in order to discover that they can utilize the benefits of social media without necessarily using common sites such as Facebook. Ultriva, a company that is dedicated to helping companies streamline their supply chains, developed a social media integrated solution that is geared solely for supply chain improvement. Utilizing Software as a Solution (SaaS), Ultriva's Collaborative Supply Portal "provides visibility of demand and supply so your planners, buyers and suppliers see a single version of truth" (Ultriva, 2012). By ensuring that everyone throughout the supply chain has the same, up-to-date information, the bullwhip effect is eliminated, allowing for a more accurate forecast. Additionally, with the Lean Factory Management component, production can be better aligned with customer demand. Ultriva further explains, "Using the Lean Scheduling and Sequencing module, you can send customer orders directly to your shop floor and then

allow the schedule to adjust based on sequencing rules you establish based on the unique characteristics of your business” (Ultriva, 2012). The production facility will greatly benefit from obtaining this information in a timely fashion, allowing them to adjust their schedules accordingly, and increase productivity. Inventory is a constant issue for companies, so the Demand Driven Distribution feature helps control the flow of the inventory through the supply chain. Ultriva suggests benefits such as, “gain visibility, see stock-out risk alerts, and understand material availability at each customer or distribution center” (Ultriva, 2012). Ultriva’s solution is based on a lean manufacturing strategy that combines aspects of social media to enhance collaboration, visibility, and overall supply chain performance.

In 2010, Arberdeen Group, facilitated by Jeff Ashcroft, a Logistics Professional, held a Supply Chain Management Summit, in which they discussed Social Media in the Supply Chain. Ashcroft identified areas where supply chains could benefit from implementing social media, such as: “people engagement, product/extended supply chain management, risk identification, early warning and monitoring, and functional integration” (Ashcroft, 2010). He focused his time on Twitter, suggesting that it is easy to start and implement and has additional benefits: being proactive regarding customer issues, updating shipment status for transportation purposes, and sending notifications regarding delays. Daniel O’Leary expanded upon Ashcroft’s discussion in his academic journal from University of Southern California. He further discusses how Twitter can be used to provide information for supply chain events. It can be used in transportation to issue information such as shipment and delivery status and alert people in the case of events that could influence such statuses (O’Leary, 2011). On a different note, Twitter

can be used to relay information regarding pricing changes that may go into effect immediately.

It is evident that Twitter, commonly mistaken to be used solely to “follow” people of interest, could also be beneficial from a supply chain standpoint, specifically in the transportation area, to increase visibility of shipment status, mitigate risks with delays, and increase communication via instant notifications.

Transportation

Several companies have already begun implementing such social media to improve their supply chains. Third party logistics providers (3PLs) and trucking companies are beginning to work together on Twitter. For example, the 3PLs post loads for carriers to cover and the trucking companies post locations of equipment looking for loads to pick up (eRoutingGuide, 2012). “Total Quality Logistics (TQL), [was] the first third-party logistics firm to release a freight-finding mobile phone application for the trucking industry, [and announced] version 2.0 of its TQL Freight Finder mobile app [in August 2011]” (Total, 2011). “TQL Freight Finder allows carriers to search for available loads by mileage radius [including utilizing one’s SmartPhone GPS Locator’s current location], equipment type, load date, and destination city/state” (Total, 2011). This device, although difficult to use while driving, will be very helpful for 3PLs and trucking companies to find one another more quickly and even while on the go. The data is in real-time, allowing for frequent updates and correct information. By using such technology, transportation costs can decrease by increasing the likelihood of full truckload shipments and filling trucks to avoid empty back hauls.

In addition to this mobile application, MercuryGate International, a market leader in Transportation Management Systems, developed its new product, Freight Friend. On this free website, shippers, brokers, and carriers can post their shipments or equipment on the website, which will then be visible in real-time to their trusted transportation partners, or their “friends”, so they can easily search and match one another’s needs. Monica Wooden, CEO of MercuryGate explained Freight Friend’s main clientele when she said, "It is perfect for trucking companies, shippers, brokers, 3PLs and freight management

companies who are selective about who they work with” (MercuryGate, 2011). By using this new website, trucking companies can provide the real-time data desired to their trusted partners with whom they are already in relationships.

Con-way Multimodal took a similar, but unique approach to matching carriers with available freight by using Twitter as its medium. “Carriers following @ConwayTweetLoad can quickly see the latest available shipments, along with links to further information on the Con-way Multimodal link board where the carriers can place bids on available loads daily.” Tyler Ellison, Con-way’s president, excited about the new launch in June 2010, said, “Twitter is where the carriers are, and Con-way TweetLoad enables us to reach them by pushing shipment information directly and automatically to any carrier who wants it, even on mobile devices” (Con-way, 2010). The transportation industry is certainly beginning to realize the benefits of social media in relation to real-time data and matching capabilities through the utilization of SmartPhone apps, websites, and Twitter.

Retail in Real-Time

After realizing the great benefits that retailers have gained through the use of social media in marketing and advertising, supply chain departments began leveraging the successes to benefit their needs as well. According to a report by the Aberdeen Group, “Social media tools like online portals and instant messaging are helping retailers more effectively share with their suppliers such information as consumer demand and on-time delivery performance, resulting in happier customers, fewer out-of-stock products and lower fulfillment costs” (Demery, 2012). The report also points out that out of eighty-nine retailers and consumer market suppliers, forty-four percent are already using social networking and another thirty-seven percent are planning to begin using the tools within one to two years. These statistics are not surprising because consumers are becoming increasingly more demanding, always wanting to make purchases at their convenience, regardless of location or means. In addition to the traditional in-store purchases, consumers are now interested in e-commerce, m-commerce (mobile), f-commerce (Facebook), s-commerce (social) and v-commerce (video-enabled)” (Retail, 2012). This makes visibility into the supply chain and having real-time information more important than ever before. “By utilizing social media to improve availability of information and collaboration throughout the supply chain, retailers will have the luxury of taking action quicker: “ordering more of the popular products, alerting warehouses when orders are not getting fulfilled and delivered to customers on time” (Demery, 2012). In addition, retailers using social media saw improvements in financial metrics compared to those who were not yet utilizing the tools, to include: complete and on-time

shipments, stock-out rate, and year-over-year increase in fulfillment costs (Demery, 2012).

Companies are beginning to see the value potential from using social media to enhance retail operations. Two companies in particular, Reflexis, a pioneer in workforce management/task execution solutions, and Impetus, offering innovation based software R&D and engineering services, combined their expertise to provide a social media based solution for retailers to improve supply chain operations and store execution. The Chief Technology Officer of Reflexis, Sundar Ranganathan, explains, “The partnership between Reflexis and Impetus is a recognition by both companies of the need to enhance workforce management applications with real-time adaptive action driven by real-time intelligence harvested by increasingly important social media sites” (Reflexis, 2012). With their combined solution, retailers can: “monitor product and customer reviews and comments and assign best-practice action...in response to positive and negative feedback, identify early best sellers and ensure sufficient in-store inventory levels, and take cues from customer opinions to fine-tune merchandising and promotional offerings” (Reflexis, 2012). Social media and its real-time will allow retail companies to improve best practices and their overall supply chain strategy.

Customer Service

A supply chain cannot be deemed effective unless its end customers are satisfied. Customer service is a very important aspect of supply chain management and most companies set goals to reach near perfect service levels. Social media is an increasingly popular way for companies to listen to, respond, and correct customer issues. The use of social media in this function is increasing, as evident by the following statistics: “In 2011, 52% of organizations used Facebook for reacting to customer issues and inquiries compared to only 29% the year before. Similarly, 50% of companies now use Twitter for customer service, compared to only 35% in 2010, while 51% also use Facebook for gathering customer feedback, compared to 37% the previous year” (Retail, 2012). It is certainly beneficial for companies to continue to engage because according to research firm Altimeter Group, “each time a fan comments on a brand's Facebook page, that interaction is shared with an average of 130 friends” (Topper, 2011). Dominick Keenaghan, president of event organizers INSIGHTS, further proved these statistics when he said, "Organisations must recognize that they cannot afford to ignore the impact that social media is having on customers, and thus their brands and revenues. Although it's new territory for most companies, the innovative approaches being implemented are literally transforming businesses and corporate culture” (Revolutionalize Customer, 2011).

Because social media is in real-time, customer are feeling “newly empowered in their relationships with companies”, expecting better than ever customer service (Solomon, 2012). Jo Causon, chief executive at the Institute of Customer Services, explained that, “as consumers, we have become far more demanding, far more

immediate, and far more vocal [adding that despite the] years we [as businesses] have spent building our brands they could be easily damaged overnight by customers using social media” (Customer Expectations, 2011). Now that customers are well aware that companies have the ability to respond to their inquiries very quickly, it is important for companies to ensure that they are making themselves available and delivering meaningful responses. This may feel like a curse to some companies, forcing them to get involved when they don’t yet understand the value or simply believe the risk is greater than the reward. Instead of wasting time in fear, companies should embrace the “opportunity to provide customers with a rich interactive experience that can increase loyalty by responding to complaints in a timely and honest manner, [realizing that] "positive sentiments" by customers can snowball and have a lasting revenue-generating effect” (Topper, 2011).

The curse aspect will only arise if the company is slacking in its responsiveness, namely when negative comments are posted and need to be addressed. Because of the viral nature of the Internet, and especially social media, it is imperative to address negative comments right away in order to correct the issue and retain the customer. If negative posts do not get resolved in a timely manner, social media can potentially harm the company’s reputation, so it is extremely important to ensure someone, or some technology, is monitoring posts on a consistent basis. In other words, “the magnitude of a social media uproar increases disproportionately with the length of your response time” (Solomon, 2012). One way to avoid the public outcry of frustration is to offer “chime in” forms on the company’s website and other additional sites, allowing customers to chat directly with customer service representatives rather than divulging their built up anger

on public social media outlets (Solomon, 2012). By making the chats so widely available and easily accessible, companies can increase their chances of containing negative feelings, thus maintaining the integrity of their brand. Also, sometimes an initial response is to try to get the person who wrote the negative post to take it down, and then attempt to resolve the issue in a more private conversation (Solomon, 2012). This is a poor strategy because it will only further anger the customer, most likely leading to more problems. By being the “bigger person”, and sometimes even swallowing your pride, you can make things right with the customer and possibly even increase customer satisfaction. The comments posted on social media sites are much less important to the public than the responses given by the companies. By handling situations professionally and promptly, even the most offensive comment can be turned into a positive customer service situation for a company. Companies, like people, make mistakes, so by making things right with the disgruntled customer, others will notice, and at the very least, appreciate the effort.

Social media is forcing standard advertising to take a back seat when it comes to companies gaining the trust of their consumers. Based on a study conducted, “while only 18% of respondents said they trusted advertising, 78% said they trusted something a total stranger has told them about the organization through social media” (Customer Expectations, 2011). These statistics are vital for companies to understand. Rather than spending such large amounts of money on advertising campaigns, they should be focused on gaining support from customers via public forums. We as a society tend to trust the opinions of our peers, hoping that they will be honest and steer us in the right direction. Therefore, customer service representatives can take advantage of this and engage in these online conversations. When positive feedback is given, companies can prolong the

dialogue by suggesting similar products or services that the consumer may also like, or dig deeper into what specifically was so great about the product/service discussed. When negative comments are posted, companies can openly apologize, asking why the customer was unsatisfied and making a suggestion for a product/service that may better suit their needs. By being a part of the online discussions, companies will be aware of how they are being marketed by their customers and can use the information to provide the appropriate customer service in order to build the company's brand and reputation.

Technology for Customer Service

Corporate America is busier than ever before. Therefore, many companies are hesitant to dive into using technology that requires a whole new level of speed and responsiveness. The idea of monitoring social media twenty-four hours a day, seven days a week, seems unrealistic. Companies may be using anything from Facebook and Twitter, to blogs and forums, and simply cannot monitor every single comment on each individual site. As discussed, if negative comments are not addressed quickly, the message can turn viral and damage the company's reputation. Companies, such as Working Solutions, a customer service and sales agency, are aware of this issue and have developed technology to aid their clients.

PostQ, Working Solution's social media monitoring and response tool "captures posts from more than 180 million blogs and sites, filters the data for relevancy using natural language speech recognition, queues them up to your representatives in real time using intelligent routing, and allows you to handle social media mentions the same way you treat calls and emails within your contact center" (PostQ, 2012). Tim Houlne, CEO of Working Solutions, explains, "Companies need to find the conversations most important to the brand- and engage. Ignorance is just not an option" (Service Linked, 2011). By using PostQ, or related technology, customer service teams will become aware of conversations occurring on millions of blogs and sites without ever having to visit the site itself. Representatives can then filter through the incoming alerts, responding to the potentially harmful concerns first, and engaging with the encouraging comments thereafter.

Not only does this approach save a significant amount of time, but also ensures that companies are made aware of conversations occurring on sites other than their own. Giving representatives the opportunity to engage with social media savvy consumers, who may be utilizing their own blogs to discuss their feelings and/or concerns, expands the scope of the company's customer service. The further customer service reaches, the more companies can engage with their customers: encouraging positive discussions and repressing the negative, thus improving overall customer satisfaction and the company's image. This technology can be used in-house as part of customer service operations, or even outsourced to Working Solutions. By outsourcing, however, the company will lose the ability to truly interact with its consumers, thus decreasing the value derived from social media.

Another company providing customer service technology, Jive, prides itself on being the first to bring the innovation of the consumer web to the enterprise. Jive's Customer Service Solution also monitors conversations on social media sites, but adds another level of sophistication, by "allow[ing] customer service employees to collaborate internally on how to respond to questions, requests, and complaints on the external community" (Carr, 2012). By combining real-time monitoring of information with internal collaboration, companies will be able to develop the best possible solutions to solve customers' issues. In addition, Jive's solution provides mobile customer service, allowing both customers and company representatives to engage in conversation from their mobile devices (Carr, 2012).

Integrated Technology

Social Media does not have to be implemented on its own; rather it can be integrated into existing technology to further enhance supply chain capabilities. O’Leary suggests using the already understood RFID technology as a basis to create new Twitter messages to gain more visibility into products’ locations. This has been tested previously using RFID-marked cows and generating Twitter messages automatically after the cows are robotically milked (O’Dell, 2010). If the technology can work for milking cows, it could also work for the flow of products through the supply chain, thus increasing visibility with instant notifications generated from RFID.

Cognizant, a leading provider of IT, consulting, and business-process outsourcing services, took a very different approach to integration. Their new development, Cognizant 2.0, allows users to have access to a wide array of documents, wikis, etc to increase their knowledge base. It also has the ability to provide routes to the knowledge and information needed. If sufficient information is not found, the system guides the user to make inquiries of others through social media embedded software (O’Leary, 2011). The value derived from this service includes: “its out-of-the box process workflows & project management capabilities, real-time task tracking, reports, and metrics dashboard help manage client projects in real time, giving both clients and teams more visibility and control over service delivery” (Cognizant, 2011). SAP has also responded to the need for social media by acquiring Crossgate. When used together, companies can connect with trading partners by joining the network, which allows for greater B2B communication and interaction. SAP StreamWork is used to “get everyone on the same page” and allow people in different locations and departments to collaborate in a structured setting with

added tools for brainstorming, and ultimately, decision making (Howell, 2011). Microsoft has developed Microsoft SharePoint utilizing a similar strategy to increase collaboration and visibility of information, which will be discussed in more detail.

One Network, a company dedicated to providing community based supply chain solutions in the cloud, also has software products from which supply chain professional could benefit. By obtaining real-time visibility of transactions and changes made within the supply chain network, One Network helps customers automate responses based on the changes throughout all necessary networks. By enabling collaboration between customers, partners, carriers, and suppliers, while constantly updating information, One Network can help companies increase profitability by optimizing their supply chains (Increasing, 2011).

Manhattan Associates has taken another approach to creating a social media based software solution for supply chain professionals, a product called Extended Enterprise Management. This new product “includes a Web portal for collecting data from partners, and a visibility tool that uses the data to create a picture of supply chain activity” (Douglas, 2011). Because so many companies are now global, it is extremely important to ensure that everyone has the same information and can “picture” the supply chain. By having this visibility throughout the supply chain, all partners will be able to monitor the information, allowing for a proper distribution of materials and capacity to the different facilities. Also, this allows companies to become more flexible and continue to make changes for further distribution while products are already in transit. Bob Heaney, a senior research analyst at Aberdeen Group, explains, “When a shipment arrives at the port, logistics managers can assign, reallocate, or postpone the inventory as supply and

demand fluctuations dictate” (Douglas, 2011). In addition to being flexible, these systems can also provide efficiencies by determining how to load the products, and onto which mode of transportation, thus reducing freight costs (Douglas, 2011).

As evident from the literature review, there is tremendous promise in using social media to improve supply chain management practices. Application of Cognizant 2.0, SAP StreamWork, and Microsoft SharePoint can help drive better relationship management. Application of RFID in conjunction with automated Twitter messages can improve product and inventory visibility. These are just a few basic ways that companies can use social media to enhance value and improve their supply chains.

As marketers have learned, social media is essential for building and maintaining strong relationships. With the increasing complexity of supply chains, technological processes have grown and relationships with individual people have faded. Now, more than ever, there is a need for more information detailing how supply chain professionals can use the available social media tools to improve supply chain visibility, collaboration, and overall performance.

Research Methodology:

This thesis conducted research on the general context application of social media in the business world. It focused on social media's use in the marketing and recruiting functions, and more importantly, how it can be used to enhance supply chain management. Particular attention was paid to the potential benefits that social media can provide supply chains and the various options of platforms that can be leveraged.

In addition to conducting a literature review detailing current research and inserting personal knowledge, the next step was to conduct a survey to interview business executives about their use of social media for business. A list of basic questions was developed to begin discussions with executives at a variety of established companies, in order to discover how they are currently using social media within their organizations. The purpose of this survey is to determine if the benefits discussed in this research have been applied in business. If not, why not and are there plans in the future to begin taking advantage of social media? If yes, what social media platforms have been the most beneficial and how is the value obtained from social media measured?

Interview Questions:

- Is your company utilizing social media in a business context?
 - When did you begin using it?
- What types of social media are you using?
 - Facebook, Twitter, etc?
 - Integrated social media technology: SAP Crossgate and StreamWork, Cognizant 2.0, etc?

- How are you using them?
 - Internally vs. externally?
 - Suppliers vs. customers
 - In what supply chain function?—planning, transportation, distribution, customer service, etc?
- How long did it take to implement and use properly?
 - Was another department/function using it first? If so, how?
 - Were consultants hired to assist?
- Which form of social media do you feel has been the most valuable to your company? How so?
- What is your value proposition for its use?
 - Quantifiable benefits?
 - Qualitative benefits?
- Have you established any metrics to determine if its use is increasing value for your company?
 - How would you prove to an outsider that it is a useful tool for supply chain professionals?
 - What benefits have you noticed?
- What has the reaction been of fellow employees, trading partners?
 - Are people accepting it?
 - Are any specific issues arising?
 - Learning curve or rate of adoption?

Discussion:

Following the literature review, surveys were conducted with companies to discover how social media has been used thus far in business. By analyzing the responses from companies via phone and e-mail, information was collected and separated into specific categories based on how each company utilizes social media. Similar to the literature review, this discussion begins with the use in marketing and human resources and then focuses on opportunities within supply chain management.

Use in Marketing and Human Resources

Marketing departments are well ahead of the game when it comes to social media, thus leaving the door open for supply chain executives to take advantage of their discoveries and leverage social media to their benefit as well. Much of social media marketing is focused on business-consumer strategies; however, business-to-business approaches are becoming increasingly important as well. Marketing professionals are likely not focused on increasing supply chain performance through their efforts, but through enhanced organizational collaboration, these efforts could potentially provide benefits for other departments. Potential benefits realized could include: better communication through networking and collaboration, more accurate demand forecasts based on consumer preferences, and efficient production scheduling incorporating the latest promotional tactics.

According to the 2011 Social Media Marketing Industry Report as discussed in the literature review, business-to-business marketing is aimed toward increasing its presence on YouTube moving forward. PPG, the world's leading coatings and specialty products and services company, has already begun utilizing YouTube to increase excitement surrounding their products. From their website, there is a link to YouTube, where they display videos regarding color trends, corporate culture, and community service. This is an easy way to gain the attention of consumers and stimulate discussions surrounding product offerings and the company as a whole.

From a human resources standpoint, displaying videos showing the company's headquarters and daily work environment is a great way to get potential candidates interested in the company. This helps put a face to the company and allows a candidate to

envision his/her life working there without ever having to step foot inside the building itself. Companies can also utilize YouTube internally to create videos for their employees. Videos are a great way to assist with on boarding and can be used as a means of explaining company policies in a different medium. YouTube is free of charge, easy to use, and very helpful in allowing a company to stand out in the online world or to improve operations internally.

In addition to using YouTube, a corporate communications associate from PPG explained that they utilize social media mainly for its search engine optimization benefit (SEO). Search engine optimization refers to a process for increasing the visibility and frequency of appearance of a particular website on a search engine result list. By participating on Facebook and Twitter more frequently and actively, more Internet activity is driven to their company name, thus providing an SEO lift. Increasing SEO is extremely important in getting consumers to become familiar with a company name and its product offerings. The more visible and accessible the products are to the consumer, the more likely they will purchase them, thus increasing sales revenue.

National Freight Inc. (NFI), a top logistics company in North America, has found LinkedIn to be very advantageous when utilizing social media for human resources and recruiting purposes. As discussed with NFI, the company finds that the quality of people on LinkedIn are more geared toward whom they are trying to reach. In addition, NFI's Marketing Strategist explains that they are able to estimate the value derived from their social media use based on "the growth we've experienced in our social communities, visits to our website, and how many people are applying for jobs or using our Contact Form to begin a conversation" (Solomon J, 2012). Additional metrics can include:

number of visits, applications received, number of leads generated, and number of visits to their site. By having a presence on social media, NFI has been able to transform their recruiting procedures and more easily target the type of candidate they wish to hire.

Increasing Collaboration

Current supply chains must not only communicate, but also collaborate in order to run effectively and efficiently. Collaboration at its finest can only occur when everyone has access to all of the information available and can make suggestions and updates at any time. It is important for companies to work cross-functionally within their organization to ensure that the appropriate end goals are the same and met properly.

When each department looks out for themselves and reaching their own targets, without keeping the end goal in mind, a silo effect occurs and supply chains can collapse.

One particular Fortune 500 Company, let's call them Company A, recently began using Microsoft SharePoint 2010 as their form of internal communication. In addition, GlaxoSmithKline (GSK), a science-led global healthcare company, uses this software throughout their entire organization. Microsoft SharePoint promotes their product on having six core capabilities: sites, communities, content, search, insights, and composites.

The first capability, sites, can be in the form of an Internet customer-facing website, as well as internal sites where the other capabilities can reside within one medium. Company A takes advantage of the customer-facing website for recruiting purposes, allowing for an open forum with questions from potential applicants, followed by responses from actual recruiters.

The communities capability “provides great collaboration tools that anyone can use to share ideas, find people and expertise, and locate business information” (Microsoft, 2010). Company A discussed that SharePoint includes elements of other familiar social media sites such as Facebook and Twitter, specifically, one can be-friend and/or follow someone within the company. By doing this, one can post messages that

their “friends” can read and can follow projects and research on which they are currently working. This improves networking within the company and helps executives find the right people for projects based on their strengths and previous experience. It also allows people the opportunity to provide their input on specific projects if they believe they possess skills that would be beneficial.

The main use of SharePoint for Company A has been for document sharing, or what Microsoft calls its content capability. GSK refers to this as its “virtual repository for documents”, containing all important company documents and files in an organized matter, while being sustainable by eliminating the need to print anything (Edwards, 2012). When adding documents to SharePoint, one can either make the document open to anyone or set privacy restrictions depending on the nature and use of the document. Company A has found that the system is very flexible regarding both its use and management. Being a Microsoft product, it works smoothly in conjunction with the rest of the Microsoft Office programs and has been beneficial to those taking advantage of the software. In addition to documents, it can also be used to sort records and web content and to set up compliance policies. This allows companies to maintain better control and organization of their projects and important documents.

The search capability saves time by allowing people to find exactly what they want, people or information, efficiently and effectively. Especially in a large organization where information tends to become overloaded, utilizing a search tool can have incredible benefits when all of the company information is searchable within one medium.

Using the insight capability, “with powerful features like interactive dashboards

and scorecards, people can use the information in databases, reports, and business applications to address specific needs” (Microsoft, 2010). GSK uses this feature heavily by means of their leadership teams. When a project is established for a team, the manager will use SharePoint to populate the list of people working on the project, to include a photo, which is automatically populated from within the site. By being a member on the list, one can access all information regarding the project, to include final goals, assigned actions, etc (Edwards, 2012). This is an easy way for groups to monitor their progress and remain accountable for their tasks.

Lastly, the composites capability allows companies to work seamlessly with Visio and Access to create new business solutions customized to fulfill the companies’ specific needs.

By using one product, Microsoft SharePoint 2010, Company A, GlaxoSmithKline, and many others, are communicating with customers externally, working more efficiently internally, and learning that the value received from collaboration is both quality and cost effective.

The convenience of e-mail, and especially e-mail chains, has helped businesses everywhere communicate more effectively with groups of people. Social media uses the concept of e-mail chains and simplifies and speeds up this communication even more. Whether on Facebook, Twitter, or another social media outlet, companies can share specific needs or requirements once, allowing all pre-determined recipients to view and comment on the information. This can be used, for example, when a company with a network of suppliers has a material/equipment need and posts the specs or quantity needed and any relevant pictures or other information. This type of social media can also

be used for providing information surrounding request for proposals and auctions, including, start and end dates, information requested, etc. This enables a stream of communication to take place, making it easier to find the information, rather than searching through hundreds, even thousands, of emails (Casemore, 2012).

In addition to internal collaboration, executives must maintain relationships with their suppliers. In a world of increasing technology, suppliers are feeling far removed from companies. Transactions and orders are becoming automatic rather than through communication, thus reducing any e-mail, telephone, or face-to-face interaction. The new technologies, including EDI, VMI, etc, have certainly been positive in creating more automation and accuracy; however, the unfortunate result has been a diminishing perceived need for strong relationships with suppliers.

Some companies are realizing this issue and are engaging in strategic sourcing. Strategic sourcing has become a major cost driver for companies by spending a great deal of time and resources finding the perfect suppliers in the perfect locations and establishing trusting, lasting relationships. When such relationships are formed, the suppliers will work with the company to make processes more efficient and sustain a mutually beneficial relationship. Yes, the technology exists to automate requests to suppliers; however, the technology now also exists to collaborate proficiently.

If software like Microsoft SharePoint can be used so effectively internally, it can certainly be modified in order to work externally as well. Suppliers can voice their opinions, if not in person due to time and cost, on open forums via social media. All conversations can take place within a private, secure medium, so any arising issues can be resolved between the supplier and the company before negative external publicity

results. By listening to suppliers' problems, concerns, and requests, and responding in an appropriate, timely manner, companies can regain the trust and respect of their suppliers. Relationships will once again be restored, and even improved, by using social media to collaborate.

Another collaboration tool worth noting is Salesforce's Chatter. Carestream Health, a worldwide provider of dental and medical imaging systems and healthcare IT solutions, began utilizing Chatter in their sales and marketing department. Currently, it is being used mainly internally for real time collaboration. However, the use is expanding into targeting customers such as radiologists and CIO's (Marean, 2012). Jon Bovit, CMO at CVM Solutions, which provides supplier information and risk management solutions, described additional benefits of using Chatter. He points out that procurement can take advantage of this technology by obtaining real time updates from suppliers. Bovit explains, "Supplier managers can choose to 'follow' ... any supplier information stored and be notified as data changes automatically" (Reese, 2011). Additionally, Chatter can be used to communicate directly with suppliers via the messenger feature or by providing additional comments to the current discussions. Through the Chatter feeds, you can monitor projects of importance, gaining real time updates on their status. Another interesting feature is its workflow approvals, where you can approve business decisions, such as sales discounts and hiring decisions, from within the Chatter Feed. Companies utilizing Microsoft SharePoint should consider trying Chatter because the two softwares are formatted to work together to further improve collaboration (Chatter, 2012).

Increasing Visibility

As discussed previously, increasing overall supply chain visibility was deemed the number one project of importance for 2011. By obtaining more accurate and up-to-date point-of-sale information, forecasts will be significantly improved, thus reducing inventories and increasing supply chain efficiencies.

At GlaxoSmithKline, visibility is especially important when the company is developing a drug for a clinical trial before going to mass production. GSK utilizes a visual Kanban-like system, constantly updating information regarding the status of the completion of each drug. When making the drug, it must go through the primary stage, mixing the drug into powder form, and secondary stage, putting the powder into pill form, syringe, etc. The production plant has LCD televisions throughout the plants, which display production schedules and timing information regarding campaigns so everyone in the facility knows what is in process so they can be better prepared. It is extremely important for the secondary stage to have real-time visibility into the primary stage so they are aware of the drug's progress during production and understand the proper procedures for handling the powder once received. By ensuring that the production lines are ready for secondary manufacturing, the speed of production is significantly increased, thus increasing efficiencies (Edwards, 2012).

While in a grocery store doing my normal shopping, I noticed a man walking up and down each aisle, looking at every product on each shelf, and scanning the associated code for a product that appeared to be low in quantity. By scanning, the man could then place an order for the product directly from his hand-held device. This technology seems impressive; however it also appeared to be very tedious and time consuming, considering

he had to check each individual product all throughout the store. If the grocery store could obtain better point-of-sale data at their registers, detailing the number of each product sold, number of remaining product on the shelf, and the order requirement, if necessary, this task would become seamless and routine. All of this information could be consolidated at a specified time and generated in Twitter messages, or another social media format, so the purchaser can collect the information and place the necessary orders.

Closed-Loop Supply Chain

As companies grow more concerned with environmental sustainability and product end of life cycle, they must determine strategies to get their products back into the company's supply chain. Dell, rather than disposing of returned and/or damaged products, utilizes its website, DellOutlet, as a means of selling such items. When consumers damage their Dell products and send them back to the manufacturer, Dell refurbishes and sells them to other customers through their Outlet site. In order to enhance this process, Dell has chosen to use social media, Twitter specifically, to increase customers' awareness of this online store. Currently, Dell's Twitter account, @DellOutlet, has over 1.5 million followers interested in learning more about their product offerings. On its Twitter feed, @DellOutlet posts updates announcing the new products that are available and current promotions being offered. In addition, customers post questions and concerns, which @DellOutlet is able to respond to promptly, thus increasing customer satisfaction and sales.

Summary

This thesis mentioned a variety of social media sites and technologies that can be leveraged by business units to increase efficiencies. The chart below contains fourteen different forms of social media and designates which business functions can directly benefit from their use. This is not to say, however, that other functions could not benefit indirectly from the company's use of any specific type of social media. Also, there are a variety of other useful social media technologies available in addition to those included in this chart.

Function	<i>Face Book / You Tube</i>	<i>Twitter</i>	<i>Linked In</i>	<i>Microsoft SharePoint / Cognizant 2.0/SAP Streamwork</i>	<i>Freight Finder/ Freight Friend</i>	<i>Ultriva</i>	<i>PostQ</i>	<i>Jive</i>	<i>Extended Enterprise Mgmt</i>	<i>Radian 6</i>
Marketing	√	√		√			√	√		√
Human Resources	√	√	√	√			√	√		√
SC: General		√	√	√		√			√	
SC: Trans		√		√	√				√	
SC: Customer Service	√	√		√			√	√	√	√
SC: Retail		√		√		√			√	

Issues and Concerns

Although there are certainly benefits associated with social media, some companies still have some legitimate concerns.

Specifically, in the health care industry, the FDA requires that complaints be filed with them when issues arise. Carestream Health, a medical device company, worries that this FDA requirement will add challenges to their use of social media. The question arises, is a comment on a social media site considered a complaint that requires the attention of the FDA? The FDA has said that they will issue guidelines detailing social media usage at some point in the future, but until then, the policy remains unclear. Also, due to the considerable amount of complex technology already implemented in many large companies' supply chains, they fear that adding social media will simply cause more confusion.

Another issue revolves around the control that the company has over its social media. Without an established social media policy, employees may be unaware of what they should and should not be writing on these sites. In addition, if the site is public such as Twitter, Facebook, and blogs, the company cannot control anything that a third party decides to post. Although much good can come of posts and comments on social media sites, it is almost guaranteed that not all will be positive. This becomes an interesting tradeoff for companies: using social media and losing some control over the company's image, or losing the benefits gained from social media and retaining control. Companies, therefore, must choose the social media platforms that they plan to utilize carefully based on how much control they are willing to lose.

Also, some companies remain fearful of the backlash that can result from customers when using social media. By neglecting sites such as Twitter or Facebook and, in turn, ignoring customer questions and concerns, companies are worsening their customer service and angering their customers.

Even if the information received from customers is all positive, with real-time information and communication comes the need for a real-time response. Companies are enjoying the benefits of obtaining information so easily from customers via social media platforms, but this also requires the companies to respond to their customers in a timely fashion in order to achieve customer satisfaction. Also it is crucial to tackle the negative comments and reviews before the information goes viral in order to avoid worsening customer service and angering customers. Because these medias are so public, the negative reactions of the customers are mushroomed, causing brands to suffer and companies to remain wary. Some are also concerned with the time costs associated with undertaking this task since the benefits have not yet been properly quantified. By implementing one of the previously mentioned new technologies, companies can save on time, but will incur additional costs. Based on the social media strategy of choice, companies must weigh their options and determine the best solution that will satisfy their needs.

Limitations in Research

As the literature review has revealed, many professionals and executives are also researching the social media phenomenon and attempting to determine the most beneficial uses within supply chain management. Although some benefits have been mentioned and discussed, without having quantitative benefits, companies are hesitant to invest time, energy, and money into the technology.

As discovered in both the research and company surveys, implementing social media in companies is still in the grassroots level, and until companies are noticing substantial benefits, they will not begin to branch out and extend their social media strategies into other departments. Most have begun utilizing social media in some capacity, mainly for marketing or human resources, namely advertising and recruiting purposes. Supply Chain, since its benefits are not as obvious and quick to realize, is slow to adopt social media. Companies are focused on implementing SAP, CPFR, WMS, etc, and have less time to focus on what they see as “extra” technology, namely social media. Based on the companies interviewed, the only forms that have been implemented thus far are company-wide collaboration tools. This research had hoped to discover interesting and innovative ways that companies were utilizing social media to enhance their supply chains’ performance, but it appears that the technology is still too new and has not yet been widely adopted.

Next Steps

Although the majority of companies have not yet begun utilizing social media to enhance their supply chains, the few who have, or those who believe so strongly in its benefits, are speaking out and sharing their ideas. There are a variety of conferences in different locations where those educated in social media will speak to company leaders to share their insight. These are ideal platforms to learn from key executives and companies who have harnessed the use of social media and have evaluated its benefits. Because the growth of this exciting technology is still in its beginning stages, it is important for companies to attend such events to learn more about how they can begin using social media to obtain benefits.

Additionally, as the Baby Boomers reach retirement, the Millennials will continue to enter the workforce, becoming potential assets in the social media realm. Because this age group has grown up with technology and is therefore already so far immersed, the idea of utilizing it in the workplace is almost common nature. The Millennial generation is more willing to share information and knowledge freely, less consumed by the silo effect, and more determined to gain recognition by utilizing Web 2.0 tools to display their strengths (Reese 2.0, 2008). Therefore, once given the opportunity, this generation will embrace social media and its many uses in the business world.

Companies should consider adding statements such as “experience using social media” to job requirements in order to encourage future employees to begin thinking about how social media could be used in business. Then, once on the job, they will be more prepared to discuss social media rather than being caught off guard. Because of their strong understanding and previous use, they can be helpful in rolling out the social

media strategy and getting others on board. Also, if implementing one of the previously mentioned technologies to enhance the company's use of social media, these employees may be able to comprehend the software much faster than the more senior members of the organization, increasing the rate of adoption and acceptance.

As the technology becomes more mainstream and better accepted, and a new generation enters the workforce, social media will become more frequently used in supply chain management.

Conclusion

Social media revolutionized peer-to-peer communication with Facebook in 2004, marketing and human resources departments soon thereafter, but has not yet been embraced wholly by supply chain management.

Based on this research, it is evident that there are at least some benefits that can certainly be derived from using social media within a company. Social media has taken speedy communication and collaboration to new heights for businesses, breaking the silo mentality and encouraging constant interaction across the internal organization.

Companies will realize improvements on projects and the increased speed at which tasks are completed. External collaboration with suppliers can be re-established and reach greater levels than ever before, improving trusting relationships and creating increased visibility throughout the supply chain. Customer service will benefit from real-time conversations with customers and suppliers, gaining insight into issues early on and maintaining a positive company reputation. Transportation can improve by gaining real-time visibility into potential issues and reducing costs by filling trucks on the back-haul.

Supply chain executives focus on creating efficiencies whenever possible and rely on the balance sheet and income statement to determine effectiveness. Because social media benefits are complicated to quantify from a financial perspective, it is difficult to encourage supply chain professionals to believe in the potential value of the technology. As more companies begin to implement the current technology and discuss the value and benefits obtained, others will quickly join, causing a social media-supply chain revolution.

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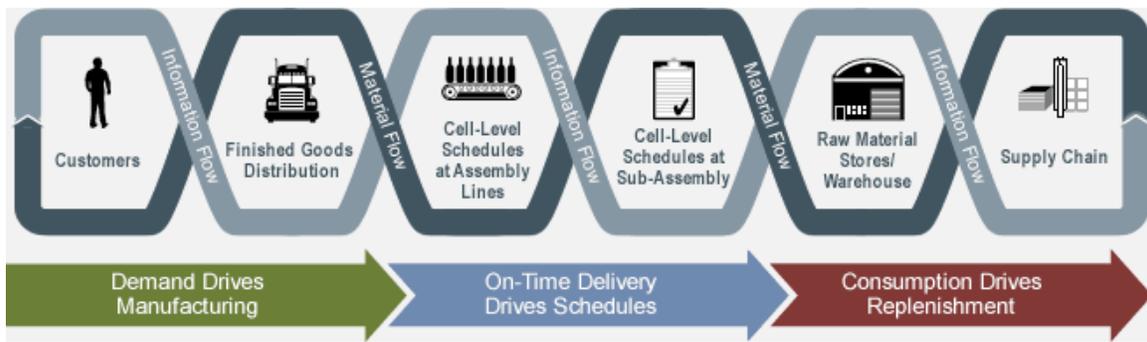
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Appendix:

The appendix allows readers to gain a visual understanding of some of the technologies mentioned throughout this thesis. Some images are actual screenshots from the technology itself and others are graphic displays of the products' use and benefits.

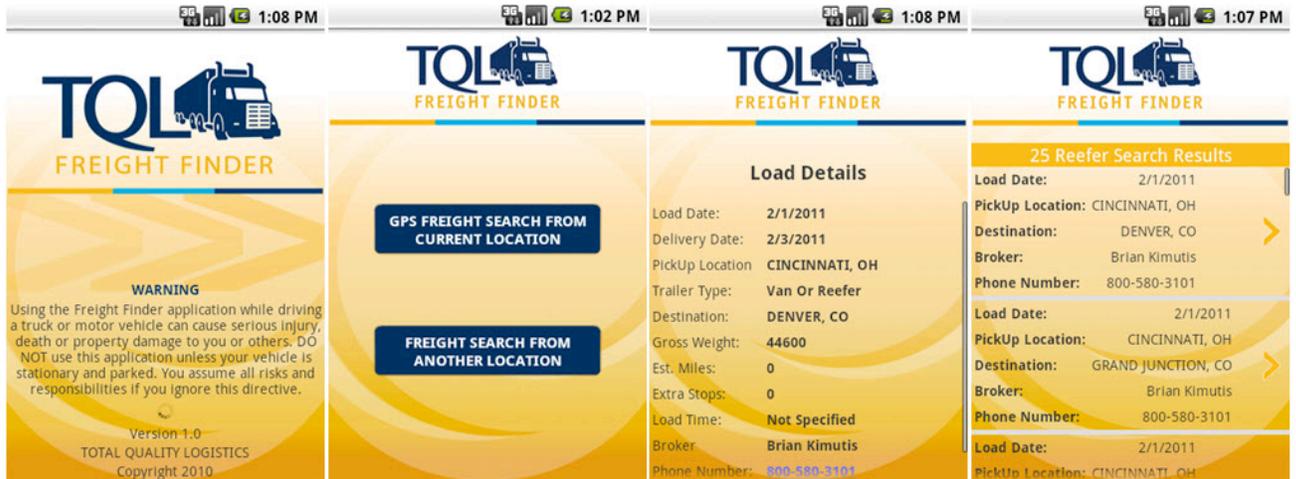
Ultriva Business Process Design: (Ultriva, 2012)

The process flow below describes how Ultriva uses real-time data and social media to combine with its Kanban System to drive supply chain optimization. The software's use of demand driven distribution, lean factory management, and collaborative supply portal reduces costs and increases supply chain efficiencies.



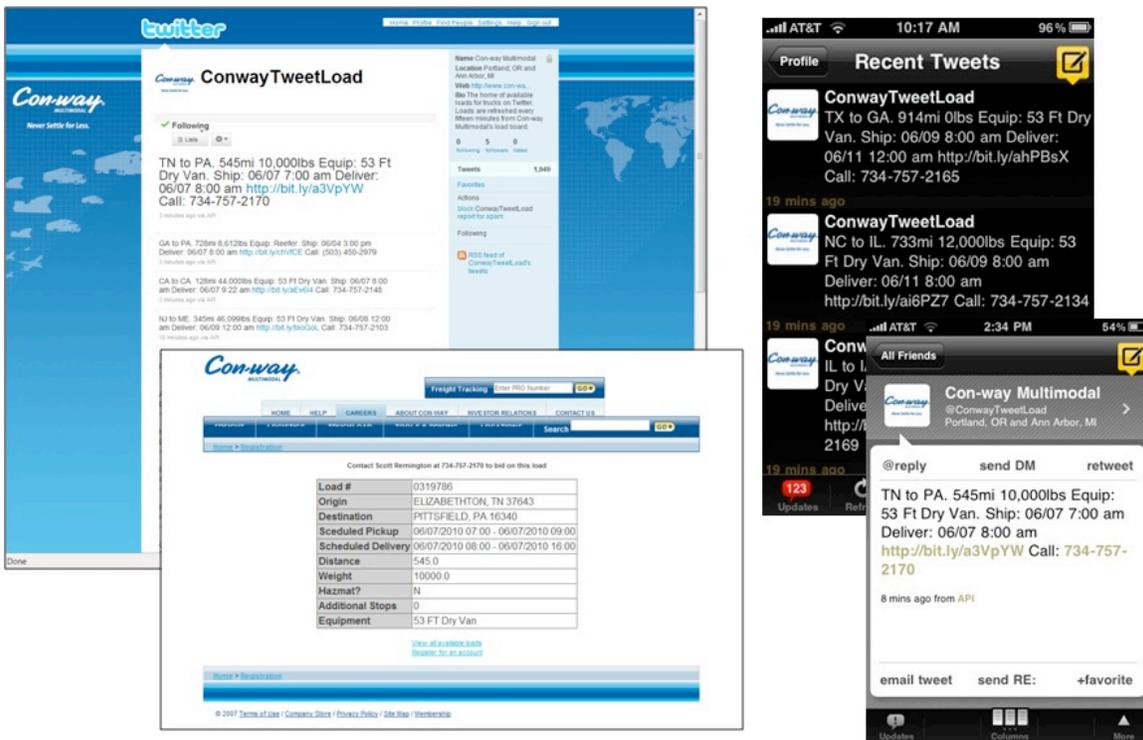
Total Quality Logistics Freight Finder Mobile Application: (Total, 2011)

The images below represent screenshots taken of the mobile application at various stages. Most importantly, one can insert the information necessary about their load details, and after submitting, a list of search results will appear with the freight matching your requirements.



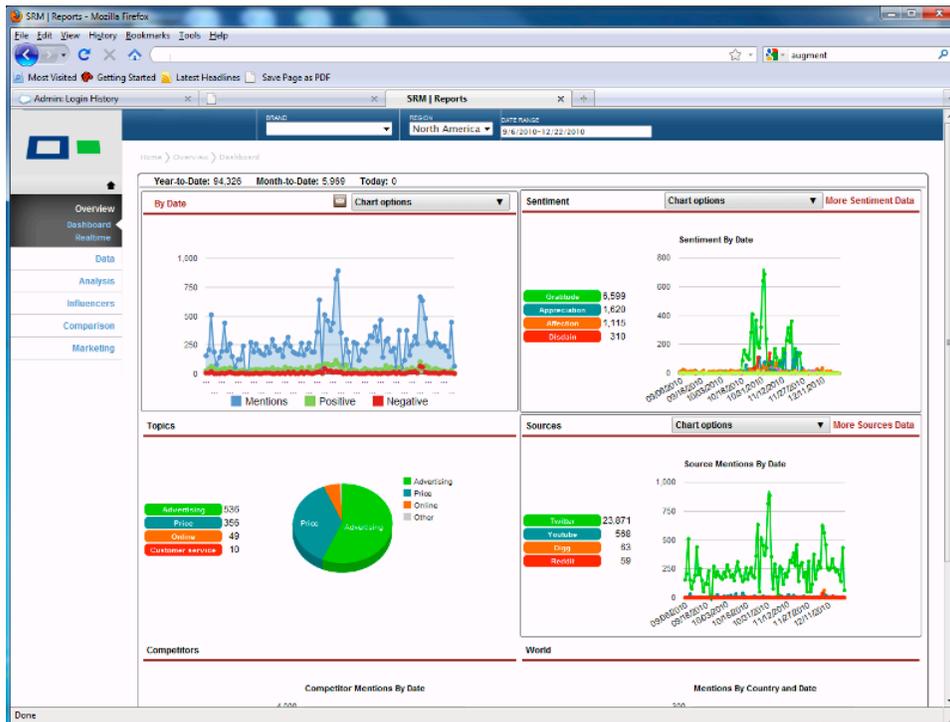
Con-way Multimodal TweetLoad Screenshot: (Con-way, 2010)

The various images below represent Con-way's use of Twitter to provide real-time alerts and updates for its followers. This allows its users to successfully pair available freight with loads in order to increase efficiencies.



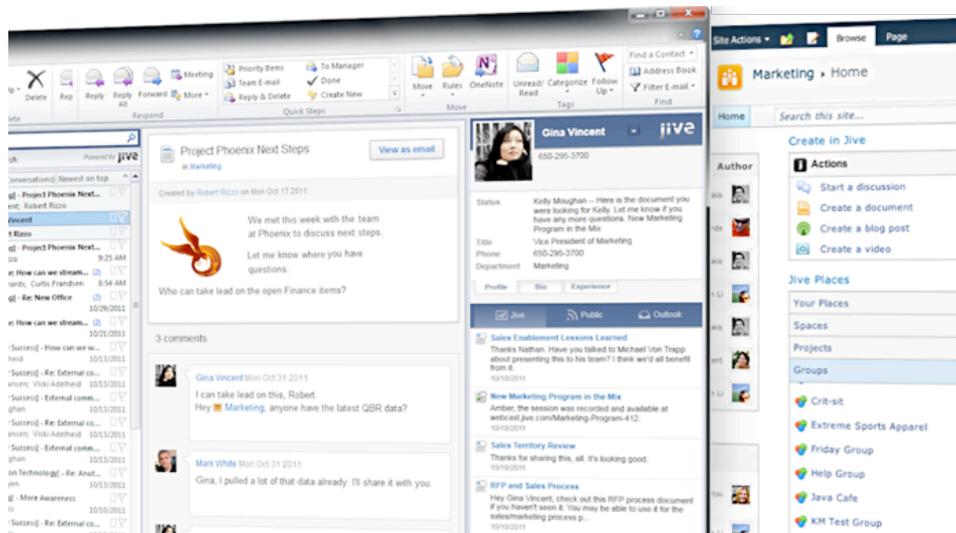
Working Solutions PostQ Screen Shot: (PostQ, 2012)

This Dashboard screenshot (displayed below) shows, in real-time, the current posts concerning the specific company. The top left quadrant allows the customer service team to identify the number of mentions, positive comments, and negative comments. The bottom left quadrant allows the team to analyze the topics most commonly discussed. Identifying key topics helps determine the areas where the company is doing well and/or where they need to improve. The top right quadrant discusses overall sentiment by date, allowing the representatives to track the progress of its customer service and overall brand. The bottom right quadrant allows the company to learn where most of the conversations about their company are taking place. The information mentioned, along with the other benefits of the technology, can significantly improve the company's ability to perform excellent customer service, as well as aid the rest of its internal departments in making future decisions.



Jive's Customer Service Solution: (Carr, 2012)

Jive's solution monitors conversations on social media sites and allows customer service employees to collaborate internally on how to respond to questions, requests, and complaints on the external community. In addition, as shown in the image below, Jive works flawlessly with Microsoft products, allowing for an easy integration into your company's current practices.



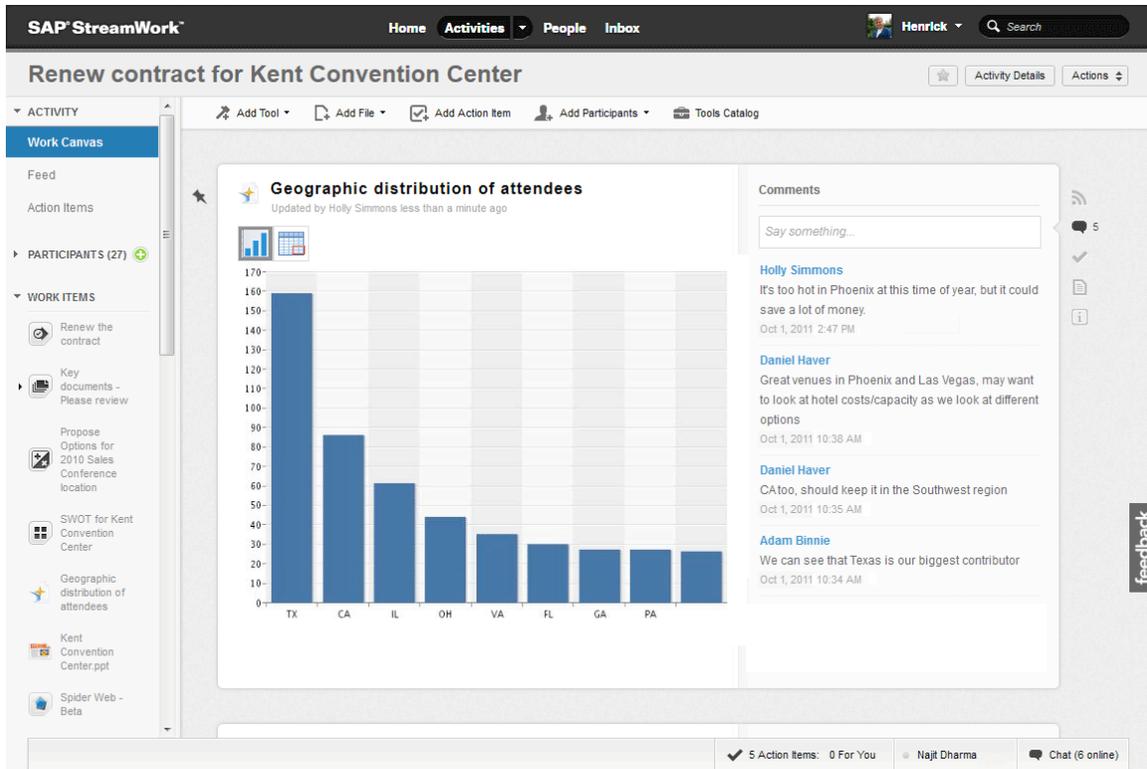
Cognizant 2.0: (Cognizant, 2011)

The image displayed below may look semi-familiar, as it is a Facebook-like page created by Cognizant to increase collaboration amongst business professionals.



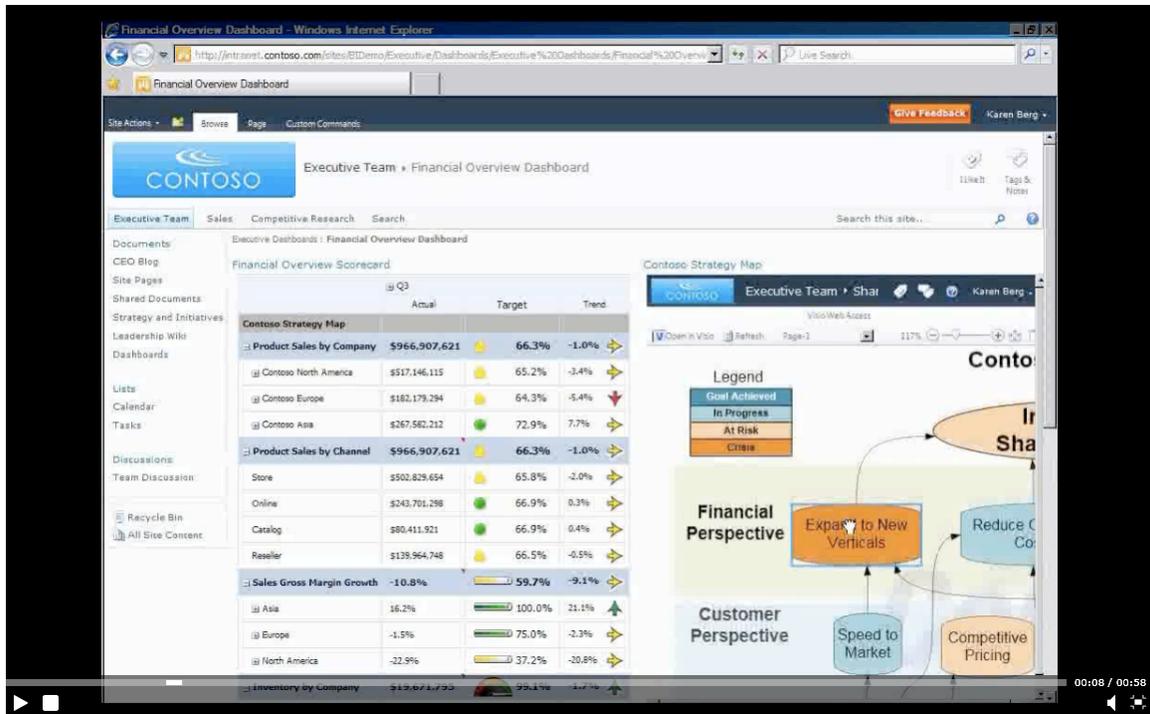
SAP StreamWork: (SAP, 2012)

The image shown below describes a specific event taking place, the Kent Convention Center. While using StreamWork, anyone planning to attend the convention has access to the information, allowing the attendees to view related documents, view/renew contracts, participate in polls/surveys, and communicate to others about the event. The poll in the image is regarding the geographics of the attendees and potential location for the event. To the right of the graph, employees can comment and make suggestions that everyone can see.



Microsoft SharePoint: (Microsoft, 2010)

A screenshot of part of the insight capability is displayed below. The insight capability is important because it allows employees to access financial information and details from reports, and utilize the interactive dashboards and scorecards to use the information as needed.

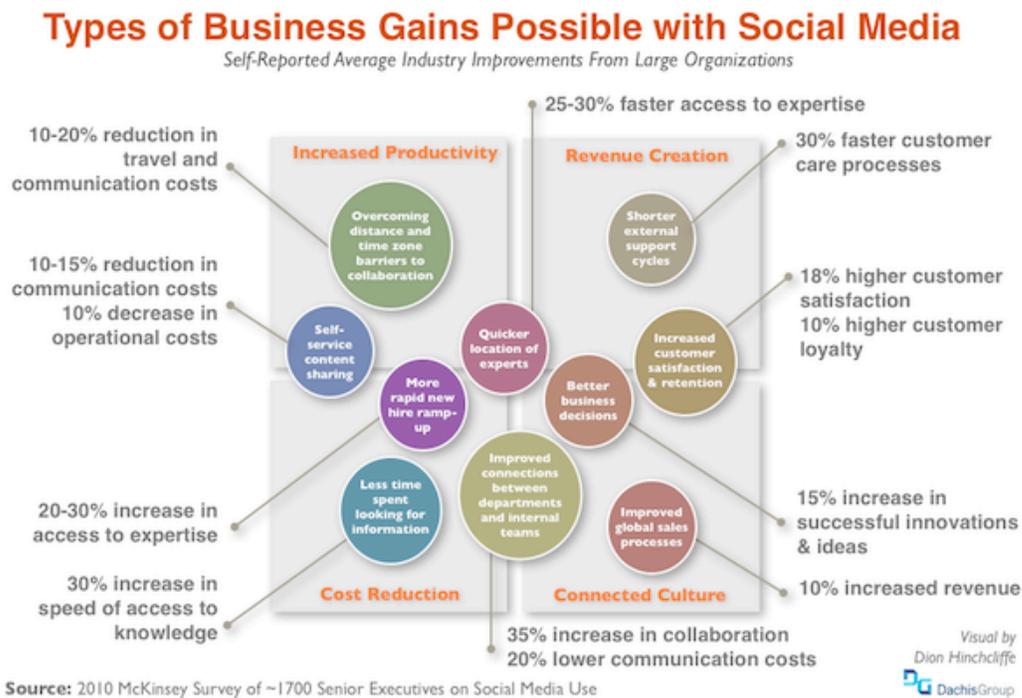


Salesforce's Chatter: (Wylie, 2010)

Chatter is a great tool for collaboration, namely on an important project or presentation. As shown in the image below, you can establish a group on Chatter with your team members where everyone can share documents, receive updates on the progress of the project, and make comments. This feature, along with many others, makes it a great tool for business.



According to the 2010 McKinsey Survey on social media use, the following benefits were discussed:



Lauren Licht

EDUCATION

The Pennsylvania State University, Schreyer Honors College
Smeal College of Business

University Park, PA
Expected Graduation: May 2012

Bachelor of Science in Supply Chain & Information Systems
Minor in Business Law
Focus in Marketing
Studied Abroad at CEA Florence Campus

Spring 2011

EXPERIENCE

Pricewaterhouse Coopers

New York, NY

Advisory Customer Strategy & Operations Intern

Summer 2011

- Assisted with a cost reduction project for a client by performing extensive analysis using Excel on Accounts Payable data; negotiated with vendors in order to leverage the client's spend
- Developed detailed presentation materials that were utilized to present findings and status updates to the client's executives
- Established guidelines for a Meetings Management Project which, when implemented, will provide savings for the client, as well as *\$2.3 million for PwC*
- Executed request for proposals and worked with vendors to choose the proper suppliers and allocate supply accordingly

Pepsi Beverage Distribution Center

Pennsauken, NJ

Supply Chain Intern

Summer 2010

- Completed various projects for the VP of Purchasing and VP of Logistics such as assisting with a *\$725 thousand natural gas contract* while completing research in the economics of solar power for the company's potential future use
- Analyzed product pricing and communicated with suppliers to obtain Telecommunication *savings of about \$15 thousand per year* in addition to other cost-saving projects
- Formulated purchase orders as well as created production line schedules based on customer orders

Affinity Connections

University Park, PA

Greek Community Representative

Spring 2009

- Conducted market research to analyze Greek involvement at the Big 10 Schools
- Determined lack of alumni involvement and need for organized programming

LEADERSHIP/ACTIVITIES/HONORS

Alpha Sigma Alpha Sorority, Executive Board

University Park, PA

Vice President of Alumni and Heritage

2010

- Built and maintained relationships with alumni from the 1970's-2010 as the liaison for 90 active members
- Organized and ran 5 large-scale events during the academic year
- Collaborated with the 7 other members of the Executive Board on important issues

Penn State IFC/Panhellenic Dance MaraTHON

University Park, PA

Rules and Regulation Committee Secretary

2010

- Raised \$200,414.76 as an organization, which contributed to the grand total of \$7,838,054.36 for pediatric cancer

Pine Forest Camp

Greeley, PA

Color Days Sponsor and Counselor

Summers 2008, 2009

- Received the Color Days Sponsor award, the highest honor given to a counselor for displaying qualities of a leader and role model
- Led a team of approximately 200 campers in special activities and events

Beta Gamma Sigma Honor Society

Fall 2009-Present

Dean's List

7/7 Semesters

Women In Business

2008-present