



Sensitel Inc.

Social Networks for Supply Chains:

New Frontiers in Software for Logistics



*Changing behavior by connecting
People, Places and Things*

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Executive Summary

Thinking about some of the technologies proliferated over the past decade alone can be mind-numbing. GPS, PDA, IM, iPod, iPhone, texting, blogging, eBay, Google, Wikipedia, YouTube, LinkedIn, Facebook and Twitter—to name a few—have impacted our daily lives in virtually countless ways. Blog search engine Technorati was tracking more than 112 million blogs alone.

While the majority of these new technologies were designed with the consumer in mind—and that's where the greatest impact has been to date—more and more companies have started evaluating and incorporating mobile solutions, content aggregation, peer networking and other emerging consumer (ostensibly) technologies into their business plans. But we've only begun to scratch the surface.

So how will companies capitalize on the vast potential that lies here? To answer that, we must examine the common threads that link personal and potential business solutions for some of these technologies. Those three key functional threads may be best defined as: **connection, collaboration and community**.

The Technology Trifecta

The varied points of convergence for leveraging many of these new technologies in the business world, represents both interesting, and varied, challenges and opportunities. The questions to be answered are how, where and when. In the area of logistics, significant promise seems to lie in developing/deploying new technologies to respond to the continually increasing drumbeat of sustainability.

Technology innovation in logistics and sustainability is addressed within the context of the three aforementioned functional threads, which are depicted in Figure 1. While this illustration, by design, portrays a hierarchical nature, it's important to note that each thread remains uniquely relevant, and continues to be developed on its own evolutionary path.

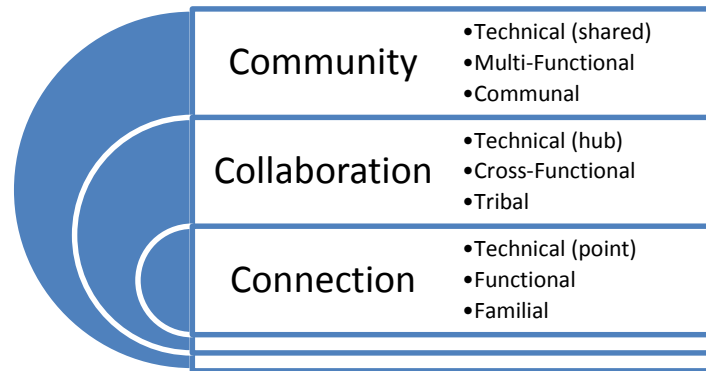


Figure 1: 3XTech

Connection

When many logisticians hear the word connection, they tend to think of “**connectivity**” in a more traditional sense: EDI, event messaging, trading partners, etc. And while EDI was certainly a connective step forward from phones and faxes (likewise GPS, RFID, et al) the connection concept here means much more.

The actual method by which users connect to solutions is just one example of innovation. With the availability of web-based solutions, your PDA-based browser may now be enough to get you started. And as analyst Adrian Gonzalez of ARC pointed out in May 2009 ([‘A TMS is too expensive’ and other excuses](#)) many companies have not even taken the essential first step of investing in basic TMS functionality. For some companies, browser-based, on-demand solutions could represent the key *connective* innovation (both technically and financially) that finally enables them to take this leap. Perhaps the most illustrative example, however, of connective solutions driving both integration and process-driven innovation, has been the emergence and adoption of platform technology based on service oriented architecture (SOA). This key advancement now enables companies to get all the benefits of best-of-breed enterprise software, while also being able to make it “uniquely their own” by creating customer-specific integrated workflows, extending data models, and customizing/personalizing user interfaces. You can click [here](#) to see precisely how Kimberly-Clark is doing just that.

Collaboration

The more commonly held notion of business-to-business collaboration is explored further in the final section. Collaboration for the purpose of this discussion focuses on solution-to-solution collaboration, and more specifically, how it can benefit business users.

For transportation procurement specialists, collaborative technology might best be represented as an on-demand, on-line procurement solution that enables systematic entry, retrieval, optimization, analysis and awarding of carrier bids. For logistics data analysts, it could mean delivering those same final awarded carrier lanes and rates (with



no “friction”) directly and systematically from that same on-demand, on-line procurement solution to their own hosted (perhaps multi-tenant) TMS solution.

For transportation or logistics engineers, solution-to-solution collaboration could mean being able to access that same TMS carrier rate database (plus business rules, constraints, etc.) directly from a best-in-class supply chain design or transportation modeling solution. For inbound transportation planners it might be a web portal that shares relevant purchase order details with their suppliers, and further enables those suppliers to submit completed routing requests online, directly into the shipper’s hosted (or not) TMS.

If the measure of collaboration’s success is sharing information and arriving at an agreeable outcome, or **SVOT** (single version of truth...for IMers, texters and tweeters), I believe it could be argued that each of these scenarios would represent a successful solution-to-solution collaboration.

Community

In the *Connection* section above, the focus is technical and based on creating a sense of “**connectivity**.” The notion of *Community*, however, might be better described as creating a sense of “**connectedness**.” It’s the recognition of symbiosis, synergy and synchronicity. (**syn** – from the Greek prefix meaning “with” or “together”) It’s that sense of connectedness, I would argue, that has been the compelling force behind many of the technology innovations discussed at the outset of this article; e.g., Twitter was the primary media recently, for connecting the actual news in Iran to the world outside Iran. I believe it’s also that sense of connectedness that is driving much of the innovation in logistics technology, particularly in support of sustainability efforts.



Analytics & Reporting: Synchronizing SVOT

“What gets measured gets managed.” - Peter Drucker

A critical first step in attacking the sustainability challenge is establishing a systematic framework of standard measures for analysis and reporting. Various governmental agencies and NGO's around the world have been compiling raw data and establishing protocols in support of this effort for some time. And while IT providers like [CarbonView](#) and others are tackling the challenge of representing much of this data systemically, considerable work remains, and unique variances by fuel formulation, industry, geography, etc., will continue to make it a large and complex undertaking. So, will a 'wiki-like' solution ultimately emerge and become an open repository for key sustainability standards and metrics, where anyone can access and contribute? PepsiCo represents a growing contingent of shippers who aren't waiting around to find out. They are already pushing their asset-based carriers to provide specific fleet metrics with regard to CO2 emissions per mile, and intend to apply those factors in the near future as part of a broader transportation planning and reporting process. Click [here](#) to hear more. **Track & Trace** will take on an entirely new meaning in the logistics and business world when you add '**Trade**' to that equation and start applying it toward carbon credits. And what will be the technology framework for reporting and trading those carbon credits when that day arrives? Will there be an app for your iPhone? Or iPad with barcode scanner and Google GPS?



Design & Planning: Creating Highly

Sustainable Networks

Many leading companies have been utilizing optimization-driven network design and/or supply chain planning solutions for a decade or longer. These solutions were specifically designed and deployed to drive greater efficiencies across the enterprise, or minimally within a targeted supply chain function. While these efficiencies had not historically been targeted at carbon footprint reductions, in many cases it was an ancillary benefit. But that paradigm is undergoing some change.

To the extent that organizations are able to capture and represent environmental data as inputs to or outputs from a given process, they can now be modeled as costs and/or constraints within an optimized supply chain design and planning process. (Click [here](#) to hear more about this work at WWL and Tata Motors.) And this can include fuel consumption, utilities (power, water) packaging, and a host of other sustainability factors. But beyond establishing optimal network models for your own enterprise, are you willing and/or able to extend your ecosystem and consider a view of your network overlaid across multiple shippers' networks? If not, what do you believe is the magnitude of that opportunity cost, both financially AND environmentally?



Collaboration, Coopetition & Compliance:

Delivering Shipper Consortiums

The noted writer, Michael Crichton, is among those who helped to popularize the concept of 'Swarm Intelligence' in one of his recent books. According to Wikipedia the phrase is said to, "Describe the collective behavior of decentralized, self-organized systems, natural or artificial." The phrase itself was first introduced in the context of cellular robotic systems in 1989, however, examples of '**SI**' in nature include bee (naturally) and ant colonies, bird flocking, animal herding and fish schooling.

The more interesting theoretical discussion and connection to this article comes in the second paragraph from Wikipedia.

"SI systems are typically made up of a population of simple agents or boids, interacting locally with one another and with their environment. The agents follow very simple rules, and although there is no centralized control structure dictating how individual agents should behave, local, and to a certain degree random, interactions between such agents lead to the emergence of "intelligent" global behavior, unknown to the individual agents." Sound a little like Facebook?

So how will "interactions between such agents lead to the emergence of 'intelligent' global behavior (perhaps) unknown to the individual agents?" Technology may help to answer that question, but in the animal community it's a matter of adaptation and survival, precisely like the sustainability challenge we find ourselves confronting today.

Contact Us

Sensitel is headquartered in Fremont, CA with development offices in Vancouver, Canada and Bangalore, India. Sensitel has partnered with leading hardware and software providers to bring the 'Whole Solution' for Traceability, Sustainability and Supply Chain Monitoring to our clients. Additional information is available on the web at www.sensitel.com

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