Bracing for the Big One: B2B Systems and Processes That Think for Themselves

By

Jack Shaw, Voted Top 5 Technology Futurist

The changes in B2C commerce are rapidly driving analogous changes in B2B commerce – the consumerization of B2B commerce.

It is the explosion in mobile phones that's driving the growth in omni-channel commerce. Let me share one more statistic with you to make that point.

The first cell phone call was place 40 years ago this spring in April of 1973. Since that time the number of mobile phone in use has grown to 4 Billion out of the 7 billion people on the planet!

By contrast, the toothbrush was invented some 5000 years ago in Egypt. In the past 5000 years the use of the toothbrush has expanded to the point where, now, 3.5 Billion people own toothbrushes.

Now what does this tell you besides the fact that clearly use of mobile phones has grown much fast than use of the toothbrush! It also tells you that, if you were to dial a mobile phone number at random somewhere in the world, the odds are one in eight that the person answering the phone will not own a toothbrush! So, you might be glad you are speaking with them via mobile phone and not in person!

Multi-channel commerce has been with us for well over a century. As for back as the late 19th century, customers of Sears, Roebuck in the U.S. could go to Sears stores to purchase items available from on-hand inventory. Or they could mail order items from a catalog they had received in the mail and have those items delivered directly to their homes.

Now multi-channel commerce embraces not only stores and catalogs, but online web commerce plus mobile commerce. The difference then, between multi-channel commerce and omni-channel commerce is that, with omni-channel commerce, the customer has a seamless experience across all channels of contact with the seller.

This means that physical outlets have new roles. Whether it's a retail store or an over the counter facility at a distribution center for a company like Grainger, the physical outlet is no longer just for sale of goods from on-hand inventory. It also acts as a showroom, a distribution point, and even in support of returned goods.

To support omni-channel commerce B2B sellers, like their B2C cousins, must have clear visibility of inventory, both on hand and available to promise, as well as of product movement.

This means that players in the B2B commerce marketplace must have much deeper collaboration across their supply chains.

- Supply chains that generate increased buyer value are likely to win in the long run. More transparency is likely to speed up this process

- With Omni-channel e-Commerce, competition will increase on many fronts, but so will the opportunities for savvy suppliers and their supply-chain partners to gain competitive advantage.

Both front and back office personnel, processes and systems must be integrated both across the enterprise and up and down the supply chain.

Until recently, social media was the realm of B2C. However, B2B businesses are already embracing Social Media for lead generation. According to the research, 90% of B2B suppliers have a Facebook page, 53% use Twitter, 47% are active as a company in LinkedIn, and 33% blog regularly.

But now, more and more Millennials are entering the workforce, and they are far more fluent in social commerce than their older colleagues. This will profoundly influence the use of social media in B2B e-commerce for two reasons.

The first is that we already see forward-looking sales people using LinkedIn to target prospects and arrange "warm" introductions. We will soon see innovative procurement personnel using social media to check out prospective vendors with their peers in the market. Second, as the power of Big Data and Intelligent Decision Management are unleashed on the limitless quantities of unstructured data available through social media; we'll see progressively more detailed and accurate analyses of that information to make near real time decisions on virtually everything from product designs to marketing campaigns to investment strategies.

All of these social media interactions are driving a quantum leap in data. All too often, this can lead to information overload.

This is where Big Data comes in. The opportunity with Big data is about taking advantage of the exponential growth in data created by utilizing the increasing power and maturity in the tools available to manage it. Such tools as predictive modeling, sentiment analysis, and machine learning will offer deep insights leading to such advanced business practices as mass customization, autonomic supply chain management, and intelligent decision management.

Scientific studies now show that major earthquakes are not only followed by aftershocks. In most cases, they also are preceded by foreshocks. In the terrain of business technology, such developments as Cloud Computing, Mobile Commerce, Social Media, and Big Data are rightly regarded as seismic events. But, as earth-shaking as these technologies appear, they are just the foreshocks.

The Big One is coming, and it's coming soon. So fasten your seatbelts. It's time to rocket into the future!

Of course, to know where we are going, we must understand where we have come from.

Over the past half-century, we have had four major waves of business technology. The First Wave was Mainframe computing in the 1960's and 1970's followed by the Second Wave, Personal Computers, in the 1980's. The 1990's saw the Third Wave, Client/Server computing, Enterprise Application Integration, and the tying together of people, processes and systems within the four walls of the enterprise.

Finally starting in the late 1990's and continuing over the past 10 – 15 years, we've seen the biggest wave yet, the Internet and the World Wide Web – ubiquitous computing which has led directly to such current manifestations as Cloud computing, Mobile Commerce, and Social Media.

Each Wave of Business Technology

- Requires deployment of a critical mass of its predecessor wave to achieve rapid growth and broad acceptance.

- Introduces new:

    - Concepts
    - Terminology
    - Opportunities
    - Concerns

- Has an exponentially greater impact on business and society than its predecessor.

Improved decision making is the linchpin to success in business and in life. To accomplish anything, people, and organizations, must act. But, we can't act until we decide what action to take, when, and how. Through decision management, intelligent systems help us make better decisions, and can do so faster, more accurately, more consistently, more flexibly, and at lower cost than traditional systems.

This means moving beyond "Big Data." There are several critical difference sbetween Big Data and Decision Management:

- "Big Data" is retrospective.

    - Looking at historical data for trends

    - Big Data systems designed for:

        - Occasional
        - Low volume
        - Manual use
        - Trained experts

- Decision Management is forward looking.

        - Continuous
        - Real-time
        - High Volume
        - Operational decisions
        - Existing staff

Implementing DM means automating (some) decisions, but gaining the full benefits of DM means automating many decisions. While some decisions can be automated using just simple, "If, Then, Else" program logic, many more decisions can be automated by using intelligent systems technologies.

Intelligent systems come into play when your business infrastructure generates sufficient data to require their capabilities. Big data technologies come into play first to do the initial number crunching. Intelligent capabilities such as Natural Language Processing transform unstructured data, such as that in social media, into usable input.

The intelligent systems then leverage such faculties as associative memory for pattern recognition and machine learning to enable them to actually think more like a person does rather than simply compute the way traditional software algorithms do. These systems can then decide, and to the extent allowed, act as needed to address the requirements of the business process and to provide feedback which continually improves the process.

Here is an extraordinary example of this already in place today. [Sidebar]

Mobile Commerce Advertising Placement – On the Fly

AdTheorent's Real Time Learning Machine (RTLM)

When a person uses an app or visits a mobile site, an 'ad request', or opportunity to show an ad impression, is sent to the AdTheorent platform. AdTheorent processes over a billion of these ad requests every day.

Each request is enriched by both user and 3rd party data to better understand this specific user and to search for connections that are meaningful and actionable to advertisers.

Users are matched with a brand and a creative impression that they are most likely to have a connection with. RTLM calculates the % likelihood of conversion and determines an optimal bid price for each potential ad to be presented to each user by applying it's real-time predictive scoring engine.

The result of the brand interaction, or lack thereof, provides RTLM feedback in real time creating instant intelligence for each additional ad request.

The system continually learns in real time from the central database to better predict advertising outcomes. The result is unmatched accuracy in identifying the best impression in any given marketing situation.

All of this, from the capture of the ad request to determining the optimal ad impression and offer price to presenting the ad is done between the time the user clicks their smartphone and the screen is refreshed with the ad in place – in an average of less than 50 milliseconds! In addition, the systems continually gets smarter with each ad request it processes – and it processes a billion a day.

This is the kind of real-time intelligent decision management technology which will be driving ALL B2B e-Commerce within a few short years.

So how should businesses prepare for the imminent emergence of intelligent decision management technology? One place to start is by optimizing sourcing, procurement, and supplier interactions. Then, companies must look within their supply chain processes in order to identify what impact this has on:

- Managing raw materials

- Planning & managing supplier networks and inventory needs

- Planning and managing all logistics, both inbound and outbound

- Managing orders throughout the process

- Measuring performance across the supply chain to ensure customer satisfaction

- Analyzing customers and responding to their demands.

In a well-designed intelligent supply & demand chain, information enters the ERP system. Logistics and cost data is passed to the intelligent decision management system which determines optimal flows, actions, timing and measures. It then passes instructions back into the ERP system(s) for operational execution.

The intelligent supply chain provides the visibility, traceability, adaptability, and predictability needed to optimize your supply chain's performance. It becomes a largely self-managing, or autonomic business process.

Looking not much farther out, autonomic processes will spread throughout the enterprise and across enterprise boundaries where autonomous supply chains will enable parts and materials, products and services, information and funds to flow between organizations without any unnecessary human intervention, but all according to goals and objectives established by each business and rules agreed upon between trading partners.

We are already seeing movement in this direction with work done in the Australian and Southeast Asian non-alcoholic beverage market. With self-configuring business ecosystems, businesses can find and engage trading partners in real time whether either they or their prospective trading partner is a manufacturer, a distributor, a retailer, a logistics provider, or plays some other role in the ecosystem.

Imagine a combination of Amazon.com, Facebook, LinkedIn, and Match.com – all driven by Intelligent Real-Time Decision Management Technologies

If you are going to be ready for the intelligent systems of the second half of this decade, it is crucial that you move immediately to ensure that your existing systems and processes are fully digitized and integrated across your customer channels and your back office. This is what you must do just to get to the starting line for the intelligent economy. You can't delay.