

## *What is the Retail Pricing Strategy Series?*

Retailers face mounting pressure to compete effectively with Amazon and eBay and their contemporaries in an environment where shoppers are more sophisticated and informed. This paper is part of a thought leadership series dedicated to addressing the most current pricing strategy concerns posed by retailers; providing honest commentary and challenging the status quo.

## *Volume #2: Big Data Converges with Omni-Channel Retailing for Competitive Advantage*

In this paper we discuss the convergence of two timely retail technology concepts, big data and omni-channel retailing and the opportunity these present to retailers. The abundance of materials on the subjects can be complex. Therefore, the focus of this paper is to translate the subject matter into guidance for merchants to drive business and compete more effectively. McKinsey suggests that “a retailer using big data to the fullest can increase its operating margins by more than 60 percent.” *What technology is available to make that possible?* That is our focus. In this paper, we will first introduce [big data](#); present an [omni-channel retailing primer](#); discuss the [business value](#) when the two converge; and finally propose an [omni-channel pricing architecture](#) to realize this business value.

## *Executive Summary. Understanding Inter-Connections is Key*

Big data is a game-changer because of its connection to omni-channel retailing. Today, omni-channel shoppers use catalogs, blogs, review websites, comparison shopping engines and then shop in-store, at kiosks, on your website; and use multiple devices including computers, tablets and smart phones – often within the same shopping transaction. This interaction of devices and channels has expanded the customer data available and data management challenge and yet holds the key to *creating an interconnected shopping experience which drives loyalty and sales*.

In isolation, big data is not the solution. The solution requires tools and analytics which interpret these big data inter-connections and generate *actionable intelligence* for merchants. Clear Demand proposes to shift the focus from “more data” to “more business information” delivered “at the point of decision”; and then challenge conventional thinking with a new generation of omni-channel pricing architecture which, when combined with big data, will neutralize some competitive advantage enjoyed by Amazon, eBay and their Internet contemporaries. This technology is more accessible today based on recent advances and will answer omni-channel retailing questions such as:

1. How can you better understand your customer through big data analytics?
2. How do your prices compare with competitors and when should they?
3. How do you interpret pricing rules and strategy from your data?
4. How can an understanding of omni-channel data drive incremental sales?
5. How do you support an interconnected customer experience through your pricing?

McKinsey goes further with its claims (see [recommended reading list](#)) suggesting big data is a Top 10 corporate priority and will become a key basis of competition. We agree but like most technology, it must be consumable and complementary, not disruptive, to the art of retailing.



## *Omni-Channel Retailing Primer*

Omni-channel retailing is the next evolution of “multi-channel retailing”. Whereas multi-channel retailing treated online and stores as separate channels, omni-channel retailing connects all channels and leverages information across channels to create a consistent brand and shopping experience that drives purchases and loyalty. Some refer to it as creating an “interconnected customer experience”.

*"45% of in-store visitors pay a visit to homedepot.com first." Hal Lawton, President, Home Depot Online. Internet Retailer, February, 2011*

Omni-channel and big data converge because omni-channel shoppers produce more unstructured data than ever before for retailers to interpret. Consider that omni-channel shoppers cross channels including catalogs, website, store, shopping sites, in-store kiosks; from multiple devices including computers, tablets, smart-phones – often within the same shopping transaction. In this new order, merchandise and promotions become more relevant, personalized and consistent across channels. Anywhere a potential customer can interact with your retail brand is now considered part of the omni-channel portfolio.

The omni-channel movement is being driven today by access to information through mobile computing together with a proliferation of technology to provide such information. Social media, rating sites, custom delivery of information to mobile devices and so on have raised the expectation for customer service, context awareness and personalization. Shoppers expect instant gratification and today they can get it. Think about applications such as RedLaser which provides shoppers instant price and product comparisons for bar codes scanned from a smart phone at the shelf.

*"We are melding together our stores, the Internet and mobile devices so we can surround our customer at every turn... The bottom line is that you can expect Macy's to be a technology leader in helping to improve the shopping experience in-store, online and via mobile." Terry Lundgren, CEO Macy's. 2012 Macy's Shareholder Meeting*

Changes in shopping behavior are abundant. “Showrooming”, for example is the process of checking out items in-store before purchasing them online. MultiChannelMerchant.com estimates that as much as 40% of online purchases are influenced by “showrooming”. Other data exists to suggest that ecommerce growth rates are

device-specific and that tablets are growing more quickly than other devices. According to research from Oracle, “consumers are almost twice-as-likely to make a purchase on a tablet device than on a smartphone”. Another report from Shop.org found that retailers on average experienced a 129% lift in year-over-year sales (2011 – 2012) from smartphones and a 178% lift from tablets.

If understanding where the commerce is originating isn't daunting enough, consider that according to a new study released by Forrester Research entitled *Assess The Impact Of Touchpoints Along The Consumer Path-To-Purchase*, “the answer may have more to do with product category than the platforms themselves”. According to Forrester:

“People shopping for consumer electronics purchases are most influenced by professional review websites, visiting a store, or talking with a customer service rep. But for footwear, store visits,

information inside the store and brand websites matter most. And each channel has a different impact on the consumers' willingness to pay more. Grocery shoppers are most willing to buy premium items after reading about them in social media, yet only 4% of food shoppers say they use social to make buying decisions."

In the omni-channel retailing discussion, it is useful to consider statements made and steps taken by some of the more visible change agents, Walmart.com, Amazon, eBay and Google.

**Walmart.com:** According to President and CEO of Walmart.com, Joel Anderson, "mobile is changing the way this retailer interacts with customers and advises retailers to embrace these changes to provide anytime, anywhere access." "That's what the customer is demanding."

**Amazon.com:** The man responsible for Amazon's mobile shopping strategy, Sam Hall, has a mantra that people should go from "wanting to buying in 30 seconds" and is taking steps to enable that strategy. Analysts believe that approximately 8 percent of the company's \$61 billion in annual sales come from phones and tablets.

**eBay:** eBay's CEO, John Donahoe, explained that "the revolutionary change in retailing focuses on four battlegrounds: mobile, local shopping, global opportunities and retailers' use of data". He exclaims further that "integrating shoppers' mobile experience with their store experience represents a very exciting period in retail". eBay attributes \$13 billion of its \$70 billion in global sales last year to commerce from mobile devices.

**Google.com:** In January, 2013, Google launched **Google Shopping for Suppliers** to sell industrial goods indirectly through suppliers. It is an important directional signal from Google and is portrayed in recent articles as a competitive response to Amazon.com. According to Doug Alexander who sold e-commerce consulting firm Channel Intelligence to Google, "everybody wants to be that initiation point of commerce, and Amazon is winning".

"They're [Omni-channel retailers] employing a bevy of technologies, revamping enterprise processes across marketing, ecommerce, stores, supply chain, and fulfillment, managing reams and streams of digital content and big data, and re-skilling their associates with a single intent-embrace and enhance their customers' online inside experience as an integral lane in their Omni channel path to purchase." Greg Girard, IDC Research

intelligence to fully leverage the data now available". The data challenge has persisted for decades. However, the urgency today of addressing this challenge and interpreting the big data inter-connections never been greater!

**The omni-channel retailing shift that has taken place!** In an NRF 2013 presentation, Oliver Walsh, Founder of Wednesday, the digital creative agency behind luxury fashion brands Armani, H&M and others, stated that "where traditionally retailers would see online and offline, customers today only see you". Walsh explains further that, "customers have already changed how they behave and retailers need to adapt their systems and business

### *What is Available to Retailers when Omni-Retailing and Big Data Converge?*

In a word, profit. According to McKinsey, “a retailer using big data to the fullest could increase its operating margin by more than 60 percent” and references Tesco in the United Kingdom to substantiate their claim. IDC Research discovered through their work that multi-channel customers spend 15 to 30 percent more than single-channel customers and omni-channel customers spend over 20 percent more than multi-channel customers – while being more loyal and evangelistic.

So what is a retailer to do? Clear Demand proposes five (5) specific business use cases for consideration in utilizing big data in an omni-channel context. Impossible five years ago – absolutely. Achievable today - we certainly think so! **Access to and utilization of data** is the merchandising and marketing key to unlocking the value of increasingly more granular customer data.

- **How can you better understand your customer through big data analytics?**

- **Omni-Channel Shopping Analytics.**
- The unstructured data generated today from online merchandising and shopping behavior represents a new frontier for marketing effectiveness. Today, retailers can utilize Google Adwords and Analytics to follow trends for keyword search by frequency, originating network and geography and then compare that with online metrics for conversion, abandonment, duration and page visits. The resulting unstructured data, properly analyzed, can drive traffic, improve online pricing & promotions, enhance retail marketing effectiveness and increase conversions! Online shopping behavior can be correlated with in-store shopping behavior and online conversions in response to merchandising strategies – in closer to real-time. Related analysis can reveal product affinity across channel and expose new opportunities to drive basket size and web conversions. Tie this information to loyalty programs and avoid the need to guess at customer preferences. **The difference is access to and utilization of data.**

- **How do your prices compare with competitors and when should they?**

- **Omni-Channel Competitive Surveillance.**
- Online competitive intelligence solutions used for *scraping* sites for competitive prices are more prolific and accessible today. Their value however occurs only when retailers can *monitor* competitive prices; *compare* those with internal prices and rules and; *alert* merchants when there are deviations (violations) from intended pricing rules and strategy. The same opportunity exists with physical in-store retail price shops - although less dynamic than online. Related analysis can measure the sales response for your products at a variety of price points when compared with the competition – decidedly more relevant online. This notion of competitive cross-price elasticity was not achievable before big data and the engines available to analyze. Surveillance with notification now puts actionable business intelligence, not just data, in merchants’ hands. **The difference is access to and utilization of data.**

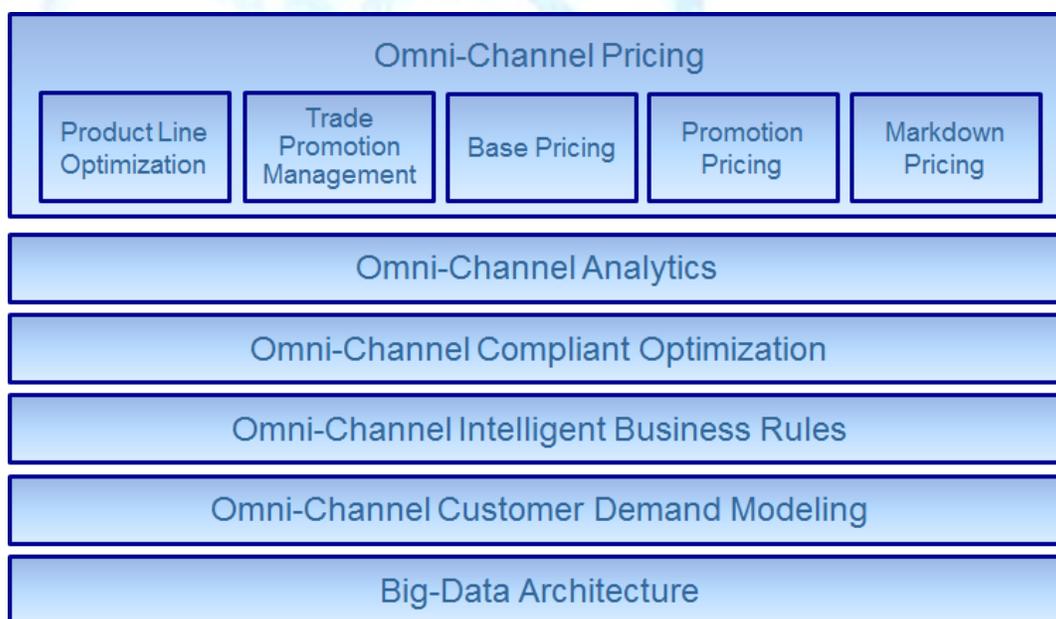
- **How do you interpret pricing rules and strategy from your data?**
  - **Omni-Channel Intelligent Rules.**
  - National Brand/Private label changes, product line extensions, price families, multi-packs are constantly being modified by vendors. This dynamic environment is compounded by unit of measure (UOM) inconsistencies (1 lb. versus 16 oz.). Normalizing product line parity and price line relationships represents yet another data challenge that must be monitored so shoppers are presented with legitimate price trade-off relationships which reinforce the retailer's intended price objectives. These relationships can be reverse-engineered from your data. **The difference is access to and utilization of data.**
- **How can an understanding of omni-channel data drive incremental sales?**
  - **Omni-Channel Shopper Segmentation**
  - Define narrower and more relevant customer segments. Structure appropriate and "congruent" promotions and prices which drive consumer behavior across online and offline channels. Online, use unstructured metrics such as abandonment, duration and page visits to predict shopping behavior. For example, what happens to online conversion rates with price changes? Do conversion percentages change with duration (time onsite) and pages per visit? Now tie that information to loyalty identifiers online and in-store occurring from any device, and retailers can realize the full promise of consumer-centric retailing. **The difference is access to and utilization of data.**
- **How do you support an interconnected customer experience through your pricing?**
  - **Omni-Channel Pricing**
  - With information on 1) shopping behavior, 2) competitive price points, 3) pricing rule insights from your data and 4) more granular shopper segmentation, pricing, promotions and markdowns can be administered with more precision and consistency. Data has been unlocked, extracted from disparate silos, analyzed and converted into actionable intelligence for merchants. Underpinning the analyses are rich demand models which reveal relationships between shopping behavior and unit movement and inform strategies for driving margin and revenue. Online; consider coupling this analysis with another data element – available inventory - and it becomes possible to structure pricing which incorporates units available for sale. Finally, take this new "big data-informed" supply chain and drive more intelligent vendor marketing support and deal funds. **The difference is access to and utilization of data.**

## *Vision for Omni-Channel Retail (Big Data) Technology*

So if access to and utilization of big data is the key, what is the state-of-the-art in retail technology necessary to convert big data into timely and meaningful business information? After all, that is the point of this whole paper – turning data into information. Fundamentally, the convergence of omni-channel retailing and big data requires a new generation of retail technology architecture which can:

- 1) integrate with legacy IT without limitation, so retailers can fully leverage the data they create and still modernize IT without large scale system replacement;
- 2) blend relational structured databases (e.g. inventory, store POS) together with unstructured (big) databases for increased merchandising effectiveness;
- 3) scale (up and down) processing capacity on-demand as requirements dictate, taking full advantage of cloud computing;
- 4) provide a “transparent science” engine which interacts with data and reveals outputs at any point in the data-stream; and
- 5) deliver “high availability” solution access, corresponding with a Software-as-a Service (SaaS) model.

Although Clear Demand takes an “omni-view” of the retail supply chain, we are fiercely practical about the innovation that individual companies can provide, reliably. Therefore, based on a declared specialization in pricing, promotions and markdowns, we also propose a vision for omni-channel pricing architecture which fully leverages big data.



In this practical vision for omni-channel pricing technology, big data and the engines required to analyze big data, facilitate a tighter alignment between customer demand, pricing strategy and evolved pricing tools. Omni-channel analytics which utilize among other things, online metrics and online competitive prices, enhance customer demand models. Omni-channel customer demand – properly analyzed – has become more transparent, creating a greater opportunity to “dial in” pricing strategy and rules. And finally, pricing strategy and rules now have more complexity; requiring more intelligence in administering pricing rules and increased compliance for utilizing optimization science. Pricing, like the balance of the merchandising toolkit, has been forced to evolve, and evolve it has.

## *Conclusion*

Omni-channel retailing has galvanized an industry and its leaders, created a new energy and spawned a plethora of innovation all designed to provide a meaningful shopping experience. One of the fundamental building blocks for retail success in omni-channel retailing is big data. In isolation, however, big data is not the solution. The solution requires tools and analytics which leverage information across channels, generate actionable intelligence for merchants and ultimately create a consistent brand and shopping experience that drives loyalty and sales. Some refer to it as an “interconnected customer experience”.

Peter Drucker wrote of the future stating “the thing that got us here will not get us there”. Technology has evolved to meet this new retail future defined in part by Amazon, eBay and others; providing retailers with new levels of agility for competing effectively.

## ***About our Authors***

Dr. Adam Rosenberg and Dr. Jim Sills, co-founders in Clear Demand, are committed practitioners of retail pricing and optimization technology. With more than 20 years of combined practical experience with early generation solutions, their commitment is to elevate the awareness for the ***practical*** role of science in retail technology.

## ***About Clear Demand***

Clear Demand is an innovative software company committed to answering today’s complex retail business issues with consumable technology. Not technology for the sake of technology but technology for the speed of business: where science complements the art of retailing. Clear Demand is the first company to introduce an Omni-Channel Pricing solution for retail.

## ***Recommended Reading List***

There are abundant readings on the subject matter of Big Data and Omni-Channel Retailing. Although numerous were used in the creation of this paper, below are a few of our favorites:

1. McKinsey. June 2011. “*Big Data: The Next Frontier for Innovation, Competition and Productivity*”. [http://www.mckinsey.com/insights/business\\_technology/big\\_data\\_the\\_next\\_frontier\\_for\\_innovation](http://www.mckinsey.com/insights/business_technology/big_data_the_next_frontier_for_innovation)
2. RSR Group. November 2012. “*The Multi-Channel Retailer’s Reality in a Post-Amazon World: Benchmark Report 2012*”. <http://www.rsrresearch.com/2012/11/14/the-multi-channel-retailers-reality-in-a-post-amazon-world-benchmark-report-2012/>
3. IDC. March, 2013. “The Renaissance of the Store”. <https://idc-insights-community.com/retail/retailomnichannelstrategies/therenaissanceofthestore>