

A Holistic Approach to Retail Digital Signage



This White Paper, prepared by Starmount, offers insight into end-to-end solutions for the integrated digital signage and retail services industry providing software solutions and services focused on digital signage, interactive kiosks, and other point-of-service products.

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Introduction

Most digital signage providers are focused on the task of delivering focused content to their customers as they make purchase decisions throughout the store. However, in today's business environment, for an in-store Retail marketing strategy to be successful it is vital to integrate all in-store systems into a multi-tiered framework for deploying applications into various heterogeneous environments, integrating with new and existing business systems, and presenting a unified view to the customer across multiple form factors. By combining the power of Oracle Retail solutions, dynamic Digital Signage and Starmount's Application Framework, an integrated in-store strategy ensures the highest ROI.

Digital signage providers who cater to the Retail industry are focused on creating and delivering relevant content to customers as they walk through the store. Research has shown that approximately 75% of customers who enter a store make purchase decisions as they walk through the store. This reinforces the goal of most digital signage providers to influence the customer by delivering the RIGHT message, to the RIGHT person, at the RIGHT time, at the RIGHT location. This dynamic messaging characteristic is clearly the power that digital signage brings to the Retail industry today.



What most providers overlook, and leave to the expertise of the in-store IT/Marketing organizations, is the integration of their digital signage network into existing in-store systems such as: POS, Inventory Management, Retail Back Office, Retail Central Office, Mobile Point-of-Service and Human Resource Management. These systems and others are integral to the operation of the Retail environment and implement critical functions such as In-Store Marketing Strategies, Promotion Management, Inventory Management, etc. Industry studies have shown that Retailers who make a conscious effort to integrate the content playing on their in-store digital signage network with their overall marketing strategy experience the most success. The result is a better customer experience, which translates into higher revenues for the store.

By integrating their digital signage network with their in-store systems, Retailers can control pricing, plan and deploy promotions, and encourage participation in in-store loyalty programs by delivering relevant messages based on the intended audience at different times of the day – a concept known as day-parting.

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Retail Digital Signage

As most shoppers will agree, there is nothing more satisfying than a great shopping experience where the strategic efforts of the in-store marketing environment combine to deliver exceptional products, competitive prices and exceptional service. As most shoppers will also agree, there is nothing more annoying than a poor shopping experience.

Now, think about the bad times. The stores with poor lighting, disastrous layout and ambient music choice, rude employees and, to top it all off, store shelves that offer few purchase options to the customer all contributing to a bad shopping experience.

Retailers realize that if they present a bad shopping experience, customers will stay away at all costs and shop at a competitor's store resulting in dire effects on the store's revenue. If the shopping experience is pleasant, customers will come back much more often and the Retailer experiences an increase in revenues and nurtures loyal customers. Many Retailers are awakening to the prospect that a digital signage solution that delivers the RIGHT message, to the RIGHT audience, at the RIGHT time, at the RIGHT location increases the potential for customers to attain that great shopping experience. However, digital signage on its own is nothing more than hardware and software. Handled incorrectly, it becomes noise and nuisance. Handled properly and integrated into in-store systems such as Oracle Retail, it takes a good store and makes it a great one, or takes a great one and makes it the best of its breed.

Digital signage is all about communication, and as such has found traction in Retail better than any other industry. That's because Retailers are all about communicating, more than ever before. They are being forced to carry more products, more of which are similar to the ones right next to them in surprising ways, different in others, all of which demands a higher level of consumer engagement.

The Case for Retail Digital Signage

The excitement surrounding digital signage in Retail is electric; you can almost feel it in the air. Retailers around the world are implementing digital signage as a means to differentiate themselves from their competitors, provide a better customer experience and reach a demographic with the ever-increasing demand for digital media. Plummeting prices of LCD and plasma displays, coupled with the proliferation of broadband connectivity and integration with in-store systems, have ushered in the era of digital merchandising at Retail.

Retail Digital Signage arrives together with a shift in consumer appreciation and expectation of technology's larger role in consumers' lives. The world is filled with digital content — at home, at work, at play — so customers are beginning to expect it where they shop.

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"In-store digital media is needed today because most consumers in North America now live with digital media via the Internet and handheld devices at home and at work," said Bill Collins, principal with technology consultancy DecisionPoint Media Insights. "They like it. They interact with it, they search for information on it, and they play games with it. It is such a fundamental part of consumers' lives that they would think it odd if digital media disappeared from their day-to-day experience at the precise moment that they walk into a Retail store."

Wayne Ruttle, vice president of sales for ADFLOW Networks, sees it going a step further. He believes

customers are so used to digital media, they no longer see static point-of-purchase messages like they once did. Their eyes literally gloss over them. If this is true, it is a point of no return, a breaking point that raises the bar for all Retailers that wish to remain successful.

Plus, it just works better, experts say, particularly in a world where buying habits have changed so drastically. “The increasingly fragmented nature of broadcast television and the advent of the DVR have made the traditional mass medium of television less efficient and often a crap shoot,” said Ken Goldberg, chief executive of digital signage company Real Digital Media. “Digital signage offers a very efficient means of bringing the message to the ‘last mile’ of the consumer cycle. The message is delivered to the consumer while in the store, with merchandise in arm’s reach and a cash register nearby. Compare that with a message delivered to a consumer who is lying in bed, distracted, with a TiVo remote in their hand.”

The most compelling and easiest to measure considerations for Retail Digital Signage are Customer Education and In-Store Promotions. These characteristics, along with Brand Reinforcement and Building, have been identified by the industry as the most important contributions to Retail Digital Signage.

Customer Education

It is in people’s nature to love to buy things, but they don’t like being sold to. Buying products in a store is a combination of entertainment, pleasure, instant gratification and fulfillment. However, to attain this pleasurable state they want information, but they want to receive it in a way that feels empowering to them. To this end, digital signage is a natural way to deliver information about product differentiation, in a manner that people are accustomed to receiving.

“Consumers like to make informed buying decisions,” said Jeff Hemingway, co-owner of digital signage software company Storming Images. “Digital signage creates a wonderful opportunity for a Retailer to inform the customer of product features and benefits. How many times have you asked a customer if they need help and you heard ‘No, thank you’? Utilizing this technology within the Retail setting allows the consumer the opportunity to become educated on the available products without feeling the perceived pressure from a sales person.”

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In-Store Promotions

Retailers have long used end-caps and other static in-store signage to generate excitement for special offers. Issues arise when the distribution of the signage is not compliant with the demands of the corporate marketing department and promotions are ineffective because the supporting signage were never displayed in the store. In-store digital signage gives the Retailer much more power and flexibility with these campaigns, driven by three key capabilities: Campaigns can be centrally managed and distributed, campaigns can be localized to a specific stores or regions within the store, and campaigns can be targeted based on time-of-day and day-of-week.

For instance, suppose a C-Store is trying to improve sales of soft drinks. In-store and pump-top digital signage would enable the company to run special promotions on soft drinks elsewhere in the store

or at the gas pump, driving traffic there. Those promotions can include time-sensitive details (“Hurry! Offer ends at noon today!”), a password-type system (“Tell the cashier you saw this message to get 15 percent off Coke® products!”), or a mobile coupon system that transmits a digital coupon to the customer’s mobile device as they interact with the digital signage system. Furthermore, by integrating the digital promotion with the store’s inventory management system the promotion can be dynamically changed from Coke® to Sprite® as inventory hit a defined threshold.

More timely messages can also educate customers about products or services of interest, if only they knew about them. If a Retailer has a food court or coffee shop, it makes sense to let shoppers know that a fresh batch of coffee was just brewed or the rolls just came out of the oven. Remember the excitement created by Krispy Kreme® bakeries when they advertised a new batch of fresh donuts were being delivered to customers. That kind of time-sensitive delivery is simply not possible with static signage; if anything, it replaces the intrusive and annoying habit of the loudspeaker announcement.

Brand Reinforcement and Building

Companies spend a lot of money building and maintaining their brand – the sum total of how they are represented to their audience on a visual, emotional and tactile level – and smart companies understand how important it is to keep their messaging lively, appealing and, perhaps most importantly, relevant and consistent.

Bill Collins, principal with research consultancy DecisionPoint Media Insights, said companies need to understand that their audiences are growing increasingly adapted to digital media at home and at the office; as a result, they’re expecting it elsewhere.

And that means companies that want to protect and nurture their brands need to work on delivering messages in a similar fashion in-store. “Digital media in Retail is needed today because most consumers in North America now live with digital media via the Internet and hand held devices at home and at work,” he said. “They like it. They interact with it. They search for information on it. They play games with it. It is such a fundamental part of consumers’ lives that they would think it odd if digital media disappeared from their day-to-day experience at the precise moment that they walk into a Retail store.”

Retail Business Models

Retail digital signage networks have implications for both the Retailer and the consumer package goods company (CPG). In certain instances, the considerations will be similar for both. For example, digital signage networks represent a new advertising medium available to Retailers and the CPG industry. Digital signage networks impact upon the consumer shopping experience, the Retailer’s brand in-store, shopper loyalty, etc., on the other hand, represents issues that are mainly confronted by Retailers. The following are issues faced by both groups as advertisers as well as those considerations mainly of importance to Retailers, as gatekeepers of the store. As it is the Retailer who ultimately adopts or foregoes installation of digital signage networks in its stores, an understanding of the three business models being adopted by Retailers is instructive.

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Three different business models of digital signage networks are currently being embraced. Each has advantages and disadvantages to a Retailer. These include the following:

1. **Advertising Network Model:** The generation of ad revenues is a major motivating factor for this system deployment. An incremental lift in Retail sales is, of course, important as well. In this case, the system's cost, advertising sales and content creation are generally managed by a third-party on behalf of the Retailer. Ad revenue and airtime are divided between the Retailer and the third-party provider. Variants on this model reflect the Retailer bearing the digital signage network's infrastructure cost, while working with third-party providers to sell advertising and produce content.

2. **Captive Network Model:** In this instance, the Retail digital signage network is purchased

and managed by a Retailer without accepting third-party ads. A slight variant on this model, finds merchandising vendors assisting the Retailer in the production of content, such as a segment on "how to," which is paid for by the CPG and can also contain brand promotional content. The generation of additional sales, control of the customer experience and of the messages delivered in-store are primary motivational factors for adopting this model of digital signage networks deployment.

3. **Outsource Network Model:** Generation of advertising sales is not a primary motivator for Retailers adopting this business model. This business model is characterized by portions of the system being controlled or managed by third-party vendors on behalf of a Retailer. In this instance the third-party company owns the hardware and software and manages ad sales and content on behalf of the Retailer.



In-Store Retail Systems (Oracle Retail)

Oracle offers the industry's most complete and integrated suite of software applications for insight-driven Retailing. Oracle provides all the key components—database, middleware, and applications—to transform your Retail business.

Oracle Retail is the result of Oracle's strategic acquisition of best-of-breed applications, as well as the realization of its long-term vision for the Retail sector. These applications provide Retailers in key vertical segments—including fashion, grocery and hardlines—with more insight, further integration, and greater value to drive customer relationships.

Oracle provides a powerful platform—based on industry standards—that enable Retailers to leverage existing IT investments and accelerate business performance with agility, flexibility, and cost effectiveness. This flexibility helps you create short-term value, while pursuing long-term growth and renewal.

Components of Oracle Retail

- **Human Resource Management:** Oracle's E-Business Suite HRMS unlocks the full value of your organization's workforce. E-Business Suite HRMS enables you to put the right people in the right jobs, develop and reward top performers, retain key talent for the long term, and increase efficiency and operating performance throughout your organization.
- **Retail Back Office:** Oracle Retail Back Office offers a flexible and efficient way to manage critical store operations, while improving customer service and enhancing profits. Store management and reporting functionality are accessible from various devices throughout the store, from front registers to back-office PCs. Real-time access to accurate information across stores, coupled with the ability to analyze in-store data, enables managers to react quickly to business needs and trends and to more effectively meet customer demands.

- **Retail Central Office:** Oracle Retail Central Office is a scalable all-in-one application that enables you to effectively oversee operations and better manage stores to ensure excellent customer service. Based on industry standards, this flexible solution provides the ability to manage data movement and access real-time information and reports across channels. Key features include parameter management to improve store policy consistency, sophisticated data management capabilities to leverage built-in workflow technologies, and the ability to manage cross-channel transactions and access electronic journal details, including customer signatures for audit and loss-prevention activities.

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- **Mobile Point-of Service:** Oracle Retail Mobile Point-of-Service can reduce costs, improve customer service and increase profits by offering innovative ways to bring point-of-sale functionality right to customers. Taking advantage of wireless technology available in Oracle Retail Mobile Point-of-Service means that customers can spend less time in checkout lines during busy shopping times, and there is no need to build additional lanes to manage peak loads. This also frees up costly floor space for additional merchandising—leading to increased sales per square foot for your store.
- **Retail Point-of-Service:** Oracle Retail Point-of-Service provides the flexibility, responsiveness, and scalability to meet even the largest Retailer's point-of-sale requirements, leading to improved customer service and higher sales. Access to real-time customer, product, and market

information means more opportunities to turn occasional shoppers into lifetime customers. In addition, Oracle Retail Point-of-Service offers next-generation features that improve customer service and reduce costs, including the ability to process returns for items purchased on the Web, access Retail Web sites, fulfill Web-generated orders, and look up cross-store inventory.

- **Retail Store Inventory Management:** Oracle Retail Store Inventory Management allows store personnel to quickly and easily perform an array of in-store operations using a high-speed Internet connection and portable, handheld wireless devices, such as Symbol Palm Pilots or radio frequency (RF) scanning guns, to receive merchandise, manage physical inventories, conduct stock counts, order stock, or transfer stock.

These are the key components of Oracle Retail that manage critical in-store operations. By integrating

your digital signage network with these in-store management systems, a Retailer can be more effective in delivering the correct content to the intended audience.

By integrating with the Human Resources component of the system, Retailers can effectively train their employees and management. This improves the network's ROI because it now doubles as a training solution for critical salespeople in the store environment.

By integrating your network to Back Office services, the Retailer can effectively use the tools and reports inherent in the system to manage promotions and make dynamic changes to the content based on defined business rules.

Integrating your digital signage network with your Point of Sale system ensures the RIGHT message reaches the RIGHT person, at the RIGHT time, at the RIGHT location.



Starmount Application Framework

The Starmount Product Framework is a multi-tiered functional structure for deploying Retail applications into various heterogeneous environments, integrating with new and existing business systems, and presenting a unified view to the user across multiple form factors. Its component-based architecture provides a clean separation of functional layers allowing for simple modification, expansion, and reconfiguration. The Starmount design philosophy is based on the premise that business environments change rapidly and software should be engineered with the assumption that change will need to be incorporated efficiently, without major rework or redeployment.

The Starmount Framework achieves this flexibility by extracting and isolating business functionality into data-driven formats, such as XML and databases, allowing changes to be incorporated without modification to the code base. This occurs at every level of the Framework—data persistence, service integration, business logic navigation, and screen presentation. Changes from simple interface look and feel modifications to the incorporation of entire new applications can be accomplished by distributing new configuration data.

Framework Logical Components

The core of the Starmount Application Framework is a set of loosely coupled components called the Application Controller. These controller objects manage the flow of data, the execution of business functionality, and the presentation of information to the user.

Process Flow Controller

The Process Flow Controller is based on a finite state machine, driven by XML-based node maps, or scripts. Each script describes a series of steps that execute a set of business functionality. At each

step, the Process Flow Controller can trigger a call to the Service Controller or request a screen to be displayed to the user. The Flow Controller moves through the node map to the next appropriate step based on the results of the service call or the user interaction.

Service Controller

The Service Controller works as an interface to local and remote business services, existing external services, and application services such as logging, messaging, or device interaction. The pluggable nature of service definition allows new service modules to easily be deployed and integrated into an existing framework application. Standard interface protocols such as SOAP, XML-RPC, JPOS, and JMS are supported, and custom connectors can be quickly implemented for interaction with legacy systems.

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View Controller

The View Controller manages data entry and presentation to the user across multiple technologies and form factors. The abstraction of screen definition allows the same view to display in common formats such as Adobe Flex, Java Swing, and Java Server Pages. This gives the Starmount Framework the ability to deploy as a digital signage player, a self-service kiosk, a web-based application, a stand-alone client application, or as a mobile application on a myriad of mobile communication devices.

In-Store Digital Media Networks: Current and Future

Below is a list of in-store digital media network technologies that are now deployed in Retail locations. The most developed and prominent of these technologies are for Digital Signage Networks. During the next few years, as these in-store technologies become more sophisticated and integrated into in-store systems, Retailers will be integrating these and other technologies into their stores to enhance the shopping experience.

Digital Signage Networks

Current Technology Deployed: Digital Signage Networks are the most common in-store digital media network technology being deployed in stores today. They are comprised of sound-and-motion content that is visible to shoppers on electronic screens (typically LCD or plasma), both large and small. The most powerful capability of Digital Signage Networks is their ability to target messages to shoppers at exact locations in the store (aisle by aisle, department by department) and at exact times of the day.

Future Deployment Promises: Interactivity with Digital Signage Networks will allow shoppers to gather information of their choosing. Measuring Real-time results will track shoppers' engagement with the screens and collate those results with electronic point-of-sale (EPOS) data. This will empower Retailers to know what Digital Signage content works best to stimulate sales. Digital Signage Networks will contain digital intelligence to recognize individual shoppers. This will allow the networks to deliver customized promotions and information to individual shoppers based on their stated preferences and/or buying patterns.

Interactive Suggestive Selling on Networked Kiosks

Current Technology Deployed: Interactive Suggestive Selling is particularly effective for grocery, home furnishings and other product/

service sectors where shoppers buy multiple products that complement one another. To date, the best examples of Interactive Suggestive Selling are at supermarkets where a shopper can, for example, scan a turkey at a kiosk station and receive on-screen info. Then the shopper can print a recipe showing how to cook that turkey, along with a grocery list of other products and supplies needed to cook with that recipe.

Future Deployment Promises: As Retailers integrate databases for their various in-store digital-media technologies, Interactive Suggestive Selling may occur via Digital Signage Networks, via Personal Interactive Devices, via Mobile Phones, etc., depending on the preferences expressed to the Retailer by individual shoppers.

Personal Interactive Devices Attached to Shopping Carts

Current Technology Deployed: Personal Interactive Devices, which are provided to shoppers as they enter the store, attach to shopping carts, displaying on screen a shopper's personal savings coupons and shopping history aisle by aisle. This makes it easy for a shopper to locate products and navigate the store efficiently. It also allows a shopper to keep a running total of purchases, and scan and bag items during a quick checkout

Future Deployment Promises: This Personal Interactive Device technology will be tied in with Digital Signage Networks to facilitate personal content on the Digital Signage screens. This interface with Digital Signage technology will happen as/when the Digital Signage and other in-store devices are equipped with wireless intelligence that recognizes the Personal Interactive Device and thus, the shopper.

Virtual Sales Associates

Current Technology Deployed: Similar in concept to videoconferencing, a Virtual Sales Associate is a product expert who resides off-site, but assists shoppers in real time as the shopper shops the store. A shopper accesses a Virtual Sales Associate by approaching an interactive kiosk that connects her, via a teleconference screen, to that Virtual Sales Associate. Because virtual associates specialize in particular product types, Retailers will employ different virtual associates to serve different parts of their stores. The Virtual Sales Associate can present product information, photos, or other graphical or text information to the shopper to assist her as she makes product/services selections in the store.

Future Deployment Promises: This technology allows a Retailer to develop sales experts off-site who can service many stores. It promises to improve customer service, enabling Retailers to provide shoppers with the same depth of information on products and services that they have come to expect online. In the future, data from a shopper's interactions with the Virtual Sales Associates will become part of the digital-media database that allows Digital Signage and other in-store networks to offer shoppers content that is customized for them.

Interactivity via Mobile Phones: Payment, Search, and Control of other In-Store Media

Current Technology Deployed: Today, a swipe of a shopper's Mobile Phone can be used in some Retail locations to pay for goods (a virtual credit card, if you will). Also, technology is now being deployed which allows shoppers to dial a local number and take direct control of a Digital Signage screen. In this situation, a shopper punches options on a mobile phone – similar to corporate voice mail systems – to select among various content options that are presented on the screen.

Future Deployment Promises: In their book on in-store digital media, *Lighting Up the Aisle*, consultants Laura Davis-Taylor and Adrian Weidmann write, "Not only can mobile ... be used to quickly follow through on promotional calls-to-action, but ... [also] for virtual rain checks, instant coupons [and] social networking ... One of the more exciting applications is ... 'local search,' where a shopper can text in a [mobile phone text message] to download promotional offers. . . . Even better, users can dig into the product promos [using mobile phones] to check price and store availability."

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Conclusion

Most digital signage providers are focused on the task of delivering focused content to their customers as they make purchase decisions throughout the store. However, in today's business environment, for an in-store Retail marketing strategy to be successful, it is vital to integrate all in-store systems into a multi-tiered framework for deploying applications into various heterogeneous environments, integrating with new and existing business systems, and presenting a unified view to the customer across multiple form factors. By combining the power of Oracle Retail solutions, dynamic Digital Signage and Starmount's Application Framework an integrated in-store strategy ensures the highest ROI.

For more information on Starmount products and services visit www.starmountsystems.com.

About the Author



Dick Trask
VP of Marketing
Starmount

With over 5 years experience in the Digital Signage industry and over 20 years experience in the software industry, Mr. Trask brings his experience and skills to Starmount to deliver a uniquely integrated Digital Signage/Oracle

Retail solution to the in-store Retail industry.

Prior to Starmount, Mr. Trask was the Director of Marketing/PR at Scala Inc. where he successfully contributed to Scala's recognized industry leadership throughout the world. While at Scala, Mr. Trask was elected to the executive board of the Digital Signage Association and was an active member of the Digital Signage Association Advisory Board.