

THE FOLLOWING IS AN EXECUTIVE WHITE PAPER ON:

SELF-SERVICE SOLUTIONS: THE PRACTICAL GROWTH PLATFORM

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THE PRACTICAL GROWTH PLATFORM

The best self-service solutions enable stakeholders to do more than simply transact business; they provide stakeholders with choices, empowering them with relevant information and alternatives.

In a time where 'business as usual' no longer applies, the most successful retailers and service organizations are not focusing on 'managing' their customers, associates and partners, but 'empowering' them. These companies are continuing to place added emphasis on their ability to appropriately meet the basic needs of all stakeholder communities quickly, completely, and cost-effectively.

Self-service solutions are increasingly being used to meet these enterprise objectives. The best self-service solutions enable stakeholders to do more than simply transact business; they provide stakeholders with choices, empowering them with relevant information and alternatives. Presenting only the most relevant information to stakeholders requires constant updating of the information, a task best accomplished through a centralized Internet strategy.

Companies deploying these solutions reap the benefits: increased customer loyalty and a strong brand connection that is consistent, experiential and logical. What's more, these companies are leveraging these solutions to aid in their ability to capture and aggregate unprecedented amounts of information regarding stakeholder preferences and behavior, not through discreet market research events, but in real time. This information, much of it obtained through well thought-out deployments of self-service applications, has become a valued source of differentiation for these companies.

What does this mean for the suppliers of these solutions and their integration partners? It means that companies will be demanding a stable platform for solution design, testing and deployment. A platform that is easily scalable to address an ever-expanding installed base of self-service solutions and applications.

But what are the core capabilities of a self-service solutions integration platform? Given the wide variety of use requirements for these solutions, how much standardization is really possible? Ultimately beneficial?

In this white paper, we discuss those factors that are driving the proliferation of self-service solutions and the need for a stable kiosk integration platform. We discuss the benefits these integration platforms can and are providing. Last, we will identify and quantify those benefits that accrue to companies deploying their self-service solutions using a common integration platform.

NOW AND THEN

Over the past decade, we have all seen the first-hand benefits that transaction automation technologies¹ offer enterprises when deployed effectively. These technologies, ranging in functionality, have all played a significant role in the redefinition of operating standards and procedures. Given the current recession, and its impact on retail automation spending at large, one might expect to see stalled investment in emerging self-service solutions. After all, these solutions represent incremental investment above and beyond those made to support ongoing operations. Still, the automation supplier community continues to tout self-service applications as a bright spot in an otherwise challenging economic environment. Why?

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Enterprises will continue to embrace new solutions that offer a compelling return on investment (ROI). In general, enterprise investment in automation technology will focus on improving operational efficiencies, enhancing the customer experience, eliminating costs, generating additional revenue streams, and developing competitive capabilities.

Based on those criteria, the value propositions associated with self-service technologies (i.e., self-service kiosks) will appropriately position these solutions as a center of convergence for an enterprise's transaction automation, branding, and customer support over the next five years. As these solutions continue to be deployed and integrated, their supporting infrastructure will become even more vital to the solutions success and development than ever before.

THE EMERGENCE AND PROLIFERATION OF SELF-SERVICE

Over the past several years, customer acceptance and preference associated with self-service solutions has undergone a drastic transformation. Once viewed as obtrusive and problematic replacements to manned stations, self-service solutions are now a key criterion for the consumer's decision-making process. In fact, comfort and preference levels have matured so dramatically that several consumer segments have begun altering their shopping habits based on the availability of self-service options.

As stakeholder demand for self-service options increases, so too must enterprise investment in these solutions. As they continued to strive toward finding an appropriate balance between manned and self-service solutions, enterprises were quick to contact kiosk solution suppliers and independent software vendors in attempts to streamline their organization's core processes and procedures. Once concepts were proven via beta and pilot testing, enterprises have taken advantage of their ability to place additional reliance on these solutions as one of, if not the core component of, the enterprise's ever-expanding customer interaction management platform.

¹ Transaction Automation Technologies include, but are not limited to: POS terminals/workstations, payment/transaction terminals, POS receipt printers, bar code scanning solutions, mobile computing devices, etc.

Below are two examples of successful kiosk deployments that illustrate some of the 'best in breed' self-service solutions:

Continental Airlines: Taking Self-Service to New Heights

For an industry that serves close to 70 million clients on a yearly basis, integration of self-service solutions within the airline industry has simply revolutionized the service interaction model between travelers and airlines. One airline that has taken their service offering to new heights by investing in such solutions is Continental Airlines. Similar to other airlines, Continental's first foray into self-service was in the mid 1990's when they installed several self check-in kiosks. These were placed out of customers' direct line of sight and were part of small pilot and beta tests at major airports. It was not until the early 2000's when these solutions started to make their way out of the 'corner' and into areas of major customer traffic.

Continental's integration and push toward self-service solutions was an immediate improvement to operational practices and procedures. Customer turnover was improved, services were enhanced, resources were reallocated, and revenues soared. These solutions garnered so much attention and praise that in 2003, Continental extended their self-service offerings to their Web site, adding online check-in. This and other updates/improvements to the company's Web site quickly allowed Continental to achieve a level of multi-channel synchronization many enterprises dream of, but few ever accomplish.

Since then, Continental extended their self-service offering to include new mobile check-in via 2D bar codes sent directly to a passenger's mobile device. Developing this IATA paperless check-in is another vital step in Continental's goal toward empowering their passengers. By enhancing the lines of communication and access to real-time information, Continental has drastically improved their ability to offer a much higher level of service, and to reduce wait times. Most importantly, this next-generation application and approach leverages Continental's current self-service kiosks as an interaction management platform.

Continental has successfully used self-service kiosks as an expandable platform – starting as a pilot with a limited and specific application (i.e., domestic check-in)

This example clearly shows how Continental has successfully used self-service kiosks as an expandable platform – starting as a pilot with a limited and specific application (i.e., domestic check-in) and expanded to a more comprehensive use of kiosks with multiple applications and uses (i.e., seat upgrades, flight changes, mobile check-in). In the future, Continental has stated it plans to expand the platform to other digital technologies, such as digital signage.

Stop and Shop: Offering a Complete Self-Service Experience

Although enterprises operating in the grocery and supermarket segments have been less affected by the economic downturn, they recognize the need to differentiate and improve operations. In a segment characterized by razor thin margins, many grocers have not been able to successfully adapt and survive. One that has is Stop and Shop.

In order to sustain and grow within this challenging market segment, Stop and Shop has undertaken two significant initiatives. First, adapt typical store structures to include banks, pharmacies and small retail chains. Second, continue to invest and rely on self-service solutions throughout their locations.

A regional leader in the Northeast, Stop and Shop currently operates more than 375 locations. In order to sustain and grow within this challenging market segment, Stop and Shop has undertaken two significant initiatives. First, adapt typical store structures to include banks, pharmacies and small retail chains. Second, continue to invest and rely on self-service solutions throughout their locations.

As the complexity of daily operations increased, Stop and Shop has become more reliant on self-service solutions to simplify and centralize processes. Similar to other enterprises in the grocery and supermarket segment, Stop and Shop invested heavily in both self-checkout solutions and self-service kiosks. Despite the solutions varying form factors and applications, Stop and Shop is using these devices as interfaces through which they can gather, manage, maintain and react to detailed customer information in real time. Leveraging these solutions, Stop and Shop is striving toward improving revenue through cross-promotional techniques and improved customer interactivity. Simply stated, these self-service solutions are touch points through which Stop and Shop is enhancing each individual interaction with the consumer.

Similar to Continental Airlines, the self-service solutions that Stop and Shop has invested in are being leveraged as expandable platforms for their customer interaction management programs. Over the past 18 months, Stop and Shop has taken their self-service offering to the next level with the reintroduction of mobile shopping solutions (i.e., personal shopping devices). A kiosk placed at the entrance of each store provides every customer with a loyalty card the option of obtaining a self-service device. The device allows the customer to scan products and obtain information on the product, including targeted marketing messages. Integration with the store's loyalty program allows messages to be highly targeted to each customer and delivered at the point of decision (POD), instead of the point of sale (POS). Not only do these solutions enrich the customer experience, they expedite checkout by simply docking the device into the self-checkout station or kiosk.

Self-service will continue to play an intricate role in Stop and Shop's operational strategy as they continue to redefine the shopping experience.

THE PROLIFERATION CHALLENGE: KIOSK DEVELOPMENT AND DEPLOYMENT

In the absence of a common platform for designing, deploying and managing self-service solutions, the complexity associated with managing disparate systems and aggregating the information obtained from these systems increases exponentially.

Despite numerous successful implementations and installations such as those outlined above, enterprises developing and deploying self-service solutions continue to face a serious set of issues and challenges. Commonly experienced across all vertical markets, application segments, and regions, these challenges remain rooted in the enterprise's core strategic, operational, and financial objectives for their projects. These challenges are compounded when deploying corporations seek to integrate these solutions on a broad scale. In the absence of a common platform for designing, deploying and managing self-service solutions, the complexity associated with managing disparate systems and aggregating the information obtained from these systems increases exponentially.

Prior to concept or pilot testing, the first deployment challenge facing enterprises is the definition and planning associated with the core application(s) offered by the self-service solution. Key among the challenges is creating a thoughtfully crafted and focused experience that is capable of improving every aspect of an interaction between end user and enterprise. In order to be successful, this experience must enable logical, needs-based connections with customers. Additionally, these service(s) have to be compelling enough to entice and promote repeated use.

Another common challenge associated with kiosk development is the requirement for customization of both the software and hardware. In spite of obvious similarities across application segments or vertical markets, each enterprise and the application it is planning on servicing will demand at least some, if not complete, customization. In order to cater to these continuously altering enterprise specifications and preferences, suppliers of complete kiosk solutions rely on customizable off-shelf offerings as the foundation for their projects.

Self-service solutions are dependent on the selection or development of kiosk software. Comprised of multiple dimensions, kiosk software has to be continuously catered to fit all use requirements. First, kiosk integrators or independent software vendors must work with enterprises to create the desired application(s) for the end-user environment. Second, the application software must be integrated with the enterprise's existing back-end operating system. Finally, a clean, intuitive user interface has to be developed to ensure optimal end-user interaction.

Kiosk software continues to be the cornerstone of each solution and is responsible for executing a number of tasks, including the interfacing with the kiosk hardware and its peripherals.

Built off that underlying principle, it is clear that kiosk software and the application(s) serviced dictates the hardware (i.e., input and output devices) integrated with the final solution. Unfortunately, these devices come equipped with their own challenges. When we dissect a kiosk deployment, the majority of time spent on application software development is associated with the incorporation of input/output device driver libraries. Each hardware component comes equipped with its own classifications (i.e., error combinations, maintenance requirements, etc.) that must be accounted for and adequately addressed prior to it being integrated; not a simple task for any programmer. In addition, the software programmer must develop a complete logic flow of all possible out-of-bound conditions. Thus, if a peripheral is malfunctioning, the application should take a prescribed set of actions. This complex logic flow is difficult, time-consuming, and requires high-level programming skills.

Once the kiosk hardware is appropriately addressed in the software, integrators must now ensure that the hardware is capable of withstanding a certain level of abuse or is rugged enough for the solution. Just like any other automation technology, the hardware components must be required to pass multiple industrial quality tests and proof of performance in the market. In addition, integrators must be certain that numerous peripherals will work seamlessly together when they are installed in the unit. All peripherals must be compatible with the motherboard, kiosk software stack, and other peripherals.

Characterized by extremely high learning curves, an enormous level of customization, and the typical demand for significant piloting or beta tests preceding rollout, deployment schedules remain complex and shrouded in the ambiguity of soft return on investment (ROI) timeframes.

With fundamental challenges such as those previously discussed, it comes as no surprise that the average kiosk deployment is a rather arduous task. Characterized by extremely high learning curves, an enormous level of customization, and the typical demand for significant piloting or beta tests preceding rollout, deployment schedules remain complex and shrouded in the ambiguity of soft return on investment (ROI) timeframes. Complete interactive kiosk solution suppliers continue to cite the following timeline for self-service solution deployment:

- Pilot test (6-12 months)
- Second-generation deployment (12 -24 months)
- Full deployment (>24 months)

In evaluating such a deployment schedule, the outlined stages or milestones are commonly not communicated or measured appropriately to determine the project's true progress. Enterprises must recognize and allocate the necessary time to process and react to lessons they have learned during the first two stages if the total deployment has any real chance at success.

One of the most important lessons learned during the initial stages is that the original concept for a self-service solution is likely to adapt and change based on customer behavior and preferences. Whether it is adding new applications, changing content, adding new capabilities or substituting input and output components, enterprises must ensure the self-service solution provides the appropriate performance, scalability and architecture. These solutions must be 'future-proofed' and be easily expandable to meet additional requirements.

Self-service solution up time and longevity requires excellent real-time maintenance and monitoring capabilities. Local and remote monitoring, diagnostics, and repair services have become an absolute staple for any kiosk deployment. Kiosk solution providers and their partners must offer more robust and complete middleware that can carefully monitor hardware status with greater precision. An intelligent middleware can alert enterprise maintenance personnel before a part breaks and recommend appropriate maintenance actions be taken. These monitoring capabilities help minimize maintenance costs by altering the necessary service groups and identifying and addressing potential problems before they result in a part malfunction.

As the number of kiosk installations and applications served per store grows, enterprises must ensure they are capable of appropriately managing, maintaining, and enhancing their solution(s). But how?

THE ANSWER: KIOSK INTEGRATION AND SERVICE PLATFORMS

The development and incorporation of such platforms will allow kiosk suppliers and their partners to adequately address the complexities associated with self-service kiosk solutions, their software, their hardware (both input and output components) and the maintenance or management services required.

In order to ensure that every kiosk development and deployment plan will be as successful as possible, enterprises must demand that kiosk suppliers evaluate and incorporate an integrated kiosk platform. The development and incorporation of such platforms will allow kiosk suppliers and their partners to adequately address the complexities associated with self-service kiosk solutions, their software, their hardware (both input and output components) and the maintenance or management services required.

When evaluating the current kiosk landscape, it is clear that a best-in-breed integration and service platform would have to be characterized as a robust, scalable, Web-based solution. The hosting of such a solution will grant all communities involved from the proof-of-concept to full-deployment extensive access, visibility, and control of the creation of the self-service solution. These platforms have the ability to standardize and streamline everything from application creation, hardware selection, solution maintenance and multi-channel synchronization.

VDC believes that these integrated kiosk platforms are the logical approach to designing, deploying, safeguarding, and 'future-proofing' any self-service kiosk solution. Additionally, incorporation of such platforms offers an extensive line of benefits to all communities associated with self-service solutions. Below, are the core benefits each community can look forward to attaining:

Benefits to Integrators and Complete Kiosk Suppliers

Based on the kiosk industry's convoluted value chain, the community poised to experience the greatest benefits from the incorporation of such platforms is easily the integrators or complete kiosk suppliers.

First and foremost, these platforms offer integrators increased access to Web-based developers. In an open environment such as this, an integrator's potential partner-base will grow exponentially as they obtain access to hundreds of free-lance developers capable of supporting the creation of application software. Additionally, such integration platforms allow developers to reduce the time associated with the application software development by centralizing all encompassing device driver libraries. No longer are developers tasked with the coding or incorporation of every type and model of peripheral. Specific peripherals are now vigorously tested, certified, and coded by the platform providers.

These solutions serve as complete hardware platforms. Offering seamless integration capabilities of certified hardware, integrators will be able to streamline their product portfolios and focus their offerings to address specific markets and applications. Streamlining of these portfolios will give integrators a greater level of visibility and insight into the specifications of each peripheral, while improving their ability to access, manage, and maintain more information regarding these peripherals. This increased visibility and understanding will allow integrators to offer their clients a more complete monitoring capability.

Another benefit that integrators will be receiving from incorporation of kiosks integration platforms is an enhanced ability to monitor, manage, and troubleshoot issues associated with kiosk hardware and software. As diagnostic requirements continue to redefine themselves in each deployment, automatic monitoring of hardware devices and software such as maintenance scheduling or content upgrades become absolutely vital. Integrators now require the ability to detect and solve terminal or input/output device failure, as well as obtain real-time updates or upgrades for application software (i.e., content) and the platform itself. With sophisticated maintenance capabilities, solution management will be simplified and uptime will be maximized.

Finally, these platforms bring forward Web-based techniques that integrators can leverage to aid in the creation of their client's multi-channel synchronization strategy. Web-based techniques allow any/all kiosk applications to be easily integrated with the enterprise's current and future internet strategy. As enterprises continue to emphasize cross-channel synchronization, this capability is a must have for integrators.

Benefits to Companies Deploying Self-Service Solutions

The benefits that kiosk integrators will obtain from a kiosk integration platform will quickly be filtered down to the enterprises collaborating with them on their self-service projects.

The first place where this impact will be visible is in the total cost of the solution. Since application software will be developed more efficiently and kiosk hardware portfolios will be streamlined to include only those peripherals already approved and coded, integrators will have the ability to pass direct cost savings onto their clients. This cost-saving capability will be embraced by most enterprises as every investment in automation technologies will continue to be heavily scrutinized over the next few years.

Along those same lines, the planning process associated with these self-service solutions should be easily expedited. Once the enterprise and integrator have agreed on an application and solution type, integrators will be able to quickly reach out to or select from a broader base of software developers for support. The current screening process associated with the selection of a software partner will be shortened and truncated. No longer will programmers of kiosks need to be as knowledgeable of device control requirements nor of the logic flow necessary to handle hardware or software malfunctions. Additionally, integrators will have a more comprehensive and focused database of best-in-breed kiosk hardware components to be integrated into solutions. Leveraging these core benefits will simplify the decision-making process and allow enterprises to refocus their time and attention on enhancing their stakeholders' complete experience.

Another benefit that will positively impact enterprises will be the enhanced visibility into their solutions. As briefly mentioned above, these platforms allow enterprises to obtain a real-time view into their solution and its supporting hardware and software. These platforms allow the integrators and their clients to receive clear instructions in the face of solution failure. The ability to service their solutions quickly and efficiently will reduce or eliminate downtime and drive the solutions overall productivity.

Benefits to End Users

These kiosk integration platforms allow integrators and their clients to more appropriately address the most important community of all, the end users. Since self-service solutions are developed and deployed to enhance end user (i.e., customers, employees, and partners) interaction, it is the end user that is poised to gain significant benefits from the incorporation of such platforms.

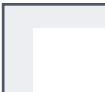
The benefits to end users are enhanced core application(s) and increased uptime. Working with Web-based developers on a standardized and monitored platform, integrators can create solutions that will be able to provide end users with increased access to multiple applications in the future. These platforms allow enterprises to build solutions around a proven primary application with the potential of easily adding complementary applications, perhaps through the Internet. VDC believes these 'hybrid' solutions will experience explosive growth across multiple vertical markets. These solutions are expected to generate strong additional revenue streams based on their ability to continuously cross promote and up-sell a diversity of application segments. Despite the continued advancement of such solutions, deployment will only be successful if the solution remains operational. That said, the remote-monitoring capabilities discussed above will have a direct impact on end-user ability to optimize their overall experience.

By simply offering such benefits, enterprises will be able to provide experiences that end users enjoy. It is those interactions and those feelings that build customer loyalty and improve operations, especially during such troubling economic times.

THE FUTURE OF SELF-SERVICE AND CUSTOMER INTERACTION MANAGEMENT SOLUTIONS

As the current economic conditions continue to redefine global business and all of the players actively participating in it, every operational, strategic and financial objective is falling victim to heavy scrutiny. At the forefront of these objectives are an enterprise's customer acquisition and retention strategies. In order to remain competitive on this front, enterprises continue to evaluate and invest in automation technologies that will cater toward the improvement of the customer experience. Of these automation technologies, self-service solutions, in particular kiosks, are continuing to position themselves as one of, if not the most attractive options.

Self-service solutions are continuing to prove their value in extensive pilots and are paving the way for increased investment in select segments and accounts. The appropriate solution deployment lends itself to the achievement of near-term opportunities including cost management, revenue enhancement, and multi-channel synchronization. Despite multiple success stories, self-service solutions continue to be plagued by a diverse group of challenges ranging from solution concept development to monitoring and maintenance.



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As we outlined above, the incorporation of such Web-based platforms enable deploying customers to design, test, deploy and manage their self-service solutions in a consistent manner. Design and development times can be cut significantly. Integration can be streamlined with prioritized or qualified product portfolios. Maintenance and monitoring will be brought to another level. Multi-channel synchronization will be easily achieved. Last, the increased uptime afforded by these systems will help to ensure that the self-service solutions deployed by companies meet their promise of accessibility and ease of use, improve customer acquisition and retention strategies, while reducing costs and improving existing/creating new revenue streams.

ABOUT VDC RESEARCH GROUP

VDC Research Group (VDC) is a technology market research and strategy consulting firm that advises clients in a number of technology markets including: Automatic Identification and Data Collection, Embedded Hardware and Systems, Embedded Software and Tools, Industrial Automation and Control, Mobile and Wireless, and Power Conversion and Control. Using rigorous primary research and analysis techniques, the firm helps its clients identify, plan for, and capitalize on current and emerging market opportunities. We strive to deliver exceptional value to our clients by leveraging the considerable technical, operational, educational and professional experience of our research and consulting staff. During our nearly four decades of ongoing operation, we have had the pleasure of serving most of the world's leading technology companies, many high-profile start-ups, and numerous blue-chip early and later stage investors. Our products and services consist of research reports, annual research programs, and custom research and consulting services. Founded in 1971, the firm is located in the Boston area. Please visit our Web site at www.vdcresearch.com to learn more.

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