



self-service in health care

Health care organizations are increasingly seeking to cut costs, and kiosks are becoming a part of that effort. Learn how kiosks can streamline the patient experience, being used for everything from wayfinding to patient check-in to vendor management.

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About the sponsors



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Kiosk Marketplace, owned and operated by Louisville, Ky.-based Net World Media Group, is the world's largest online provider of information about and for the kiosk and self-service technology industries. The content, which is updated every business day and read by business and industry professionals throughout the world, is free.

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Introduction Controlling costs with self-service

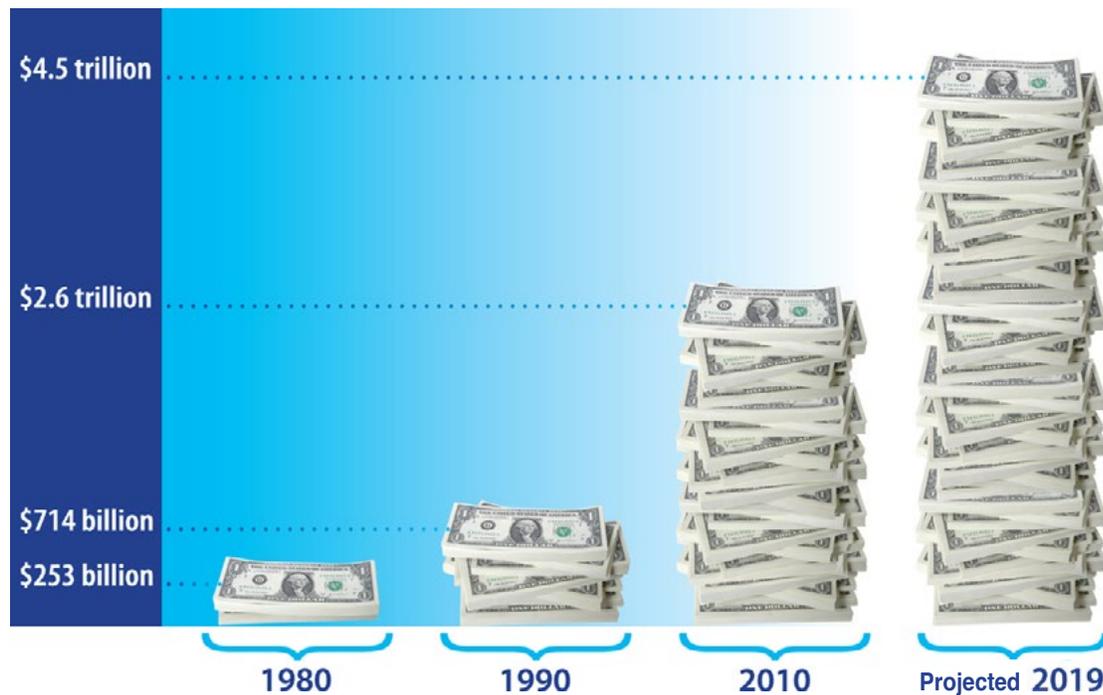
If there's one industry that has been the focus of scrutiny related to spiraling costs, burdensome paperwork and archaic procedures, that industry is health care. The contentious town hall meetings during the debate over the Affordable Care Act were a glaring example of how difficult it is to reform those procedures.

Except in rare cases, long gone are the days of the family doctor, where the office staff knew patients by name and it was possible to call in the morning for an afternoon appointment. Instead, someone calling for an appointment today may be lucky to see a doctor in less than a month, and the first question a patient is likely to be asked is "who is your insurance carrier?"

For new patients, an initial appointment is likely to include at least 30 minutes in the waiting room filling out a variety of forms related to insurance and medical history. And once the patient makes it into the examination room, doctors rarely have time to spend counseling him on wellness and preventative care.

According to the National Health Statistics Group, spending on health care in the United States is expected to total approximately \$2.8 trillion in 2013, more than three times the \$714 billion spent in 1990, and more than 11 times the \$253 billion spent in 1980. U.S. healthcare spending in 2013 is expected to total \$9,214 per resident, nearly 18 percent of the country's gross national product

Growth in health-care spending in the United States



Source: National Health Statistics Group and Centers for Medicare and Medicaid Services

and among the highest spending of any industrialized country around the globe.

And that trend is not expected to change. According to the Centers for Medicare and Medicaid Services, U.S. healthcare spending is projected to top \$4.8 trillion in 2021.

No matter what people think of the government's attempt to reform health care, nearly everyone agrees the system is in desperate need of an overhaul. And in many situations, one of the tools slated to help perform that overhaul may be a self-service kiosk.

Winter Park, Fla.-based Adventist Health Systems, for example, is using kiosks and other self-service technologies to do the job. In 2006, Adventist Health Systems began investing nearly \$1 million to incorporate self-service procedures in its operation, according to a case study published on ModernHealthcare.com. Among the company's goals were to accelerate and increase collection of patient bills, improve patient satisfaction, streamline workflow and eliminate inefficient paper-based processes.

Adventist Health Systems, the largest Protestant health care organization in the United States, operates 44 hospitals and employs 55,000 people. Adventist Health System hospitals have 7,700 beds and provide care for 4 million patients each year in inpatient, outpatient and emergency room visits.

The driving force behind the project, according to ModernHealthcare.com, was industry statistics showing that, on average, hospitals collect only 35 percent to 65 percent of patient payments. Patient

payments are projected to account for as much as 30 percent of provider revenue by 2012, so anything the hospital can do to increase those collection figures flows directly to the bottom line.

Self-service registration kiosks were a major component of that makeover, along with an online patient portal and the ability to collect payments online.

Since the project was implemented, registration via the self-service kiosks has reduced average patient waiting time by four minutes, resulting in improved patient satisfaction.

From the hospital side, the reduction of inefficient paper-based processes have helped to reduce paper and postage costs — savings that can be passed on to patients. Because patients are handling much of the registration process on their own, admissions staff is able to handle more patients at once, resulting in improved labor costs. Ultimately, the project has resulted in an additional \$11 million in revenue for the company, a return of more than 11 times the initial investment.

Clearly, the use of kiosks in a health care setting can pay big dividends for both patients and health care providers alike.

In this guide, learn some of the uses of kiosks in the health care industry, the potential savings, best practices and the state of the industry, as well as potential concerns and what is on the horizon. Kiosk Marketplace would like to thank Frank Mayer and Associates, Inc., whose sponsorship allows us to bring readers this information at no cost.

Chapter 1 Applications of kiosks in health care

Patient check-in and information retrieval

New patients at nearly any medical facility face an identical situation: arriving a few minutes early at the doctor's office to be handed a pencil, a clipboard and a stack of forms to complete.

And if the doctor's office is part of a medical campus encompassing several buildings and the patient has multiple appointments, that experience could be repeated several times throughout the day.

For the patient, the check-in process is one of the most time-consuming aspects of a visit to a medical office. In many cases, the time spent filling out forms far exceeds that spent talking with a doctor or other health care professional.

For the doctor, it can be one of the most costly and error-prone aspects of treating patients. Once the forms have been completed, a receptionist or other administrative person must then enter that information into the office computer. Deciphering a patient's handwriting often involves a judgment call that can result in incorrect information being included in a patient's file.

Kiosks quickly are becoming a solution to what has traditionally been one of the most inconvenient and uncomfortable aspects of a trip to the doctor.

"You talk to any doctor who has gotten out of private practice, one of the reasons they will give you for having gotten out is the overhead associated with personnel and information," said Ronald Bowers, senior

vice president of business development, Frank Mayer and Associates, Inc.

Grafton, Wis.-based Frank Mayer and Associates, Inc. is a designer of custom interactive kiosk solutions.

"Kiosk technology has completely reshaped the airline industry with regards to passenger check-in," Bowers said. "You take that airline check-in system into a busy clinic and it could solve a lot of problems if the people are early adopters."



Kiosks, such as the one from Frank Mayer and Associates, Inc. (seen above), educates consumers and store personnel regarding the variety of photochromic lens options available.

Benefits of health care kiosks

- Increased efficiency
- Lower labor costs
- More language options
- Faster payment collection
- Better information delivery

The admissions process is replete with opportunities to increase efficiency. When the typical pay is \$12 an hour for an office worker, even shaving 10 minutes off the forms process translates into a savings of \$132 million annually.

“Anything that can be automated makes employee hours more efficient,” Bowers said.

“Another part of that is language,” he said. “A kiosk can easily take you to a screen in another language as opposed to the staff having to find a translator.”

And as employers increasingly begin offering high-deductible insurance plans as a way to manage rising premiums, collecting on patient accounts is becoming more of a concern. Rather than send a bill weeks after the service has been provided, health care facilities can outfit kiosks with card readers, enabling the facility to collect for services rendered immediately.

As important as saving a few dollars, however, is improving the overall patient experience. Health care facilities are discovering that kiosks can deliver a variety of information, resulting in a happier health care customer.

“More and more patients are asking for easier check-ins, automation and enhanced patient experience,” said Craig Keefner, self-service channel manager for Louisville, Colo.-based KIOSK Information Systems, a kiosk manufacturer. “The technology also allows for the provider to quickly capture data, and depending on the type of kiosk used, the provider can check eligibility, do payment processing, correct inaccurate or missing data and provide specific messaging to the patient.”

Wayfinding

Along with patient check-in, one of the most common uses of a kiosk in the health care industry is wayfinding. According to the white paper “Touchscreen Check-in: Kiosks Speed Hospital Registration,” 13 percent of U.S. hospitals use kiosks for wayfinding, compared with just 5 percent of the hospitals that use kiosks for patient check-in.

Thirteen percent of U.S. hospitals use kiosks for wayfinding.

“Wayfinding is a fairly simple application, but a very popular one,” said Jared Rhoads, senior analyst with Falls Church, Va.-based CSC, a global provider of technology-enabled business solutions and services. Rhoads coauthored the Touchscreen Check-In white paper with CSC managing partner Erica Brazen for the California Healthcare Foundation.

“Patients walk into a big medical center and they have no idea where to go,” Rhoads said. “Using the kiosk, they can type in the

name of the person they are there to see, and it will print out a map for them.”

Combine wayfinding and patient check-in with the massive health care campus/multiple appointment scenarios mentioned in the previous section, and the wayfinding application becomes even more beneficial.

“A patient can simply swipe their insurance card at the kiosk, confirm that their contact information is accurate, pull up the appointments they are scheduled for and the system would then provide them with a map of where they need to go,” Bowers said.

Wellness information

One of the fastest-growing uses of kiosks in health care is as an educational tool, offering wellness information.

“There is a groundswell of interest on the part of major retailers, national drugstore chains, large national grocery store chains and big box retailers, who are looking at ways to bring consumers into their stores on a regular basis, in essence creating a loyalty situation,” Bowers said. “They are doing that by offering information.”

Retailers and drugstore chains have long recognized the benefits of placing health care-related kiosks in their stores to help drive customer traffic. Nearly everyone has, at least once, checked their blood pressure on a drugstore kiosk or kept track of their diet on the scale at the local grocery store.

In some areas, kiosks are being sponsored by trade groups representing produce



When compared with a control group of stores where kiosks were not deployed, stores with kiosks experienced a 1.8 percent greater increase in overall sales in the measured categories, and had a 16 percent greater likelihood of outperforming non-kiosk stores.

Source: Aisle7

growers. The kiosks offer information about the nutritional content of certain fruits and vegetables, extending that to incorporate information about how exercise and diet work together.

And in the event of a localized issue of concern, informational kiosks can offer treatment and prevention information.

“So, for example, if St. Louis had an outbreak of swine flu, kiosks in pharmacies or retail stores could offer medical alerts about best practices and what you should do to protect yourself,” Bowers said.

Portland, Ore.-based Aisle7, a provider of wellness-driven shopper marketing programs, recently worked with a major retailer that was looking to boost sales by deploying kiosks in its stores that offered health and wellness information. The

CHAPTER 1 Applications of kiosks in health care

company deployed informational kiosks in 67 locations, after which it measured year-to-year changes in the sale of health-related items, including over-the-counter medications, vitamins, supplements and other nutritional products.

According to a case study compiled by Aisle7, when compared with a control group of stores where kiosks were not deployed, stores with kiosks experienced a 1.8 percent greater increase in overall sales in the measured categories, and had a 16 percent greater likelihood of outperforming non-kiosk stores.

And Baptist Hospital in Nashville, Tenn., is using a kiosk to provide health information to patients.

As an ongoing community outreach project, the hospital developed a pictorial touchscreen kiosk and website featuring MedlinePlus health tutorials and placed them in a clinic that serves many uninsured patients. MedlinePlus is a service of the U.S. National Library of Medicine and the National Institutes of Health.

“The availability of a health information kiosk at the University of Tennessee/ Baptist Hospital primary care clinic significantly increases health literacy for patients by providing reliable, physician-recommended information in an appropriate format; information these patients did not previously find readily available,” said Kristi Gooden, public relations director with Baptist Hospital. “Participants report they have a greater understanding of their health issues, and the project is introducing hundreds of patients to MedlinePlus.”



Patients educating themselves is an important part of modern health care. Kiosks can help.

Visitor access

A less well-known kiosk application is the ability to check in vendors, salespeople or other visitors for appointments and print access badges.

The Health Insurance Portability and Accountability Act (HIPAA), passed by Congress in 1996, provides stiff penalties for medical facilities in cases of unauthorized access to medical records. With literally hundreds of patients, vendors and staff visiting a facility on a daily basis, failing to properly control access could have costly ramifications.

Although those may be the obvious concerns, some of the not-so-obvious ones include inadvertently letting visitors know who else has been at the facility.

In cases where a lobby attendant is in charge of tracking visitors, the primary

Kiosks serve as miniature pharmacies

Minneapolis-based InstyMeds has designed an ATM-style kiosk that allows a patient to receive her prescription at her doctor's office and avoid traveling to a pharmacy and waiting to get her prescription filled.

A mother of two takes both children to the doctor because one child has an ear infection. The doctor confirms that the child does have an ear infection and needs a prescription for antibiotics. Consider the following scenarios.

Scenario 1

The mother bundles up her fussy children, puts them in the car and drives to a retail pharmacy. Once at the pharmacy, the mother turns in the prescription, and waits with one crying, sick child and the other begging for every toy and piece of candy on display in the aisles. Thirty minutes later, she gets the prescription, puts her now even fussier children in the car and finally gets to drive home.

Scenario 2

The doctor hands the mother a voucher with a unique security code along with information about the prescribed drug, and asks if she has any questions. The mother goes to the InstyMeds Prescription Medication Dispenser in the waiting area and enters in the unique security code and patient's birth date. She inserts a credit card to cover the insurance copay. Ninety seconds later, the prescription container is dispensed. The mother can take her children and go directly home.

Devices such as this can benefit patients needing to find an open pharmacy late at night, patients in rural areas where the closest pharmacy could be 30 miles away, patients from out of town who don't know the area and any person who is sick and wants nothing more than to get back home in bed as soon as possible.

control mechanism is a spiral notebook where visitors sign in and out. A vendor, who also might be working with a competitor, can simply look at that spiral notebook while signing in to see who else has been visiting that facility.

Along with preventing someone from knowing who else has visited a particular facility, a visitor management kiosk can be programmed to have visitors electronically sign a nondisclosure agreement or read

safety information prior to being granted access to a facility.

Still, experts admit that visitor access is an infrequently used application, at least at present.

"It is kind of small potatoes," Rhoads said. "Because that is something that requires a little more integration with existing systems, it is generally not the first feature that places roll out."

Chapter 2 Best practices

Design considerations

Health care kiosks are incorporating a number of features designed to ensure compliance with HIPAA, which in part addresses privacy and security of patient records. Side panels and polarized screens prevent prying eyes from viewing patient information, and a number of companies are incorporating biometric security features such as fingerprint and palm scanners.

For those concerned with the spread of germs at the kiosk, antimicrobial paints and screens that can be manipulated with a pen, key or other object are becoming standard features.

As tends to be the case with most changes, the increasing use of kiosks can carry effects that may not be immediately apparent. The first effect this has is on compliance with the Americans with Disabilities Act, the 1990 law that prohibits discrimination on the basis of disability.

There are currently no laws regulating kiosk design regarding the Americans with Disabilities Act. Those in the kiosk industry, however, have chosen to be proactive regarding kiosk design.

ADA laws are meant to ensure the device owner will provide equal access for persons with disabilities. This means hearing-impaired and visually-impaired individuals and persons with physical disabilities must have access in the same manner as an individual with no physical disability. Applied to kiosks, this not only includes accessibility to the device itself, but also to the touchscreen and other peripherals, such as a keyboard, card reader or printer.

ADA definitions for front and side-reach access

While no requirements currently exist for kiosk deployers to comply with ADA requirements, industry experts recommend that kiosks be accessible to all. When installing a kiosk, consider the following definitions:

- **Front-reach unobstructed access:** Minimum height of 15 inches, maximum height of 48 inches.
- **Front-reach obstructed access:** Setback zero to 20 inches, maximum height of 48 inches. The law allows a setback of 25 inches, but the maximum height drops to 44 inches.
- **Side-reach unobstructed access:** Maximum height of 48 inches.
- **Side-reach obstructed access:** Setback zero to 10 inches, maximum height of 48 inches. If the setback is 10 to 24 inches, the maximum height drops to 44 inches.

Source: Digital Screenmedia Association

ADA regulations state any user device must be no higher than 54 inches off the ground, so kiosk designers find it necessary to strike a balance when placing the machines to ensure that everything remains below the 54 inches. Sometimes that might require special handicap screens that lower all of the options below 54 inches to remain compliant.

“Reach issues and the area you need for a wheelchair, whether for front or side access, are things that we need to take into consideration when designing a kiosk,” Frank Mayer and Associates, Bowers said.

Software security

A major component of HIPAA was a set of standards governing the security and

privacy of health care records. Those standards were meant to improve the efficiency and effectiveness of the nation's health care system by encouraging the use of electronic medical records.

Around the time HIPAA was passed, the future of medical recordkeeping was predicted to reside on a smartcard. A paper from 1997, "Electronic Patient Medical Records: The Digital Economy Comes to Healthcare," made the standard predictions: storing patient records in an Internet database accessible via a smartcard would transform the industry, offering millions of dollars in cost savings and dramatically speeding up the process of delivering health care.

In one particularly bold assertion, the authors predicted that by the year 2000, more than 25 percent of Internet transactions would be conducted using a smartcard.

Clearly, those things haven't occurred. Although the technology is still in use, it hasn't had the impact many had hoped.

"There was a significant possibility of someone's health care information getting into the wrong hands if someone lost their cards, so it really hasn't panned out," Bowers said. "What stopped it wasn't a problem with the technology; it was the concern about confidentiality."

For kiosk technology to be successful in the health care industry, those same issues must be taken into consideration when it comes to the software running those applications.

"Just like with Payment Card Industry compliance related to credit card



Thanks to HIPAA rules, more medical offices are turning away from paper records, which pose a privacy risk. However, when incorporating medical records onto a kiosk, it's important to provide high-quality security precautions.

transactions, you want to make sure that data is off the local device and you want to make sure any point of access is protected," Bowers said. "A hacker can connect something to a USB port or they can access it through the network connection where the information is going out."

HIPAA provides for fines of up to \$25,000 in cases of data breaches related to medical records, up to a maximum of \$250,000.

"If someone hacks into a freestanding kiosk and gets 10 names and addresses and health information, that could be 10 times \$25,000," Bowers said. "It's not something to be treated lightly."

Chapter 3 State of the industry

According to the white paper “Touchscreen Check-in: Kiosks Speed Hospital Registration,” in 2009, fewer than 10 percent of health care delivery organizations had implemented kiosks. Clearly, the market for kiosks in health care is still in its infancy. Although the economic turmoil of the past several years may have served to tamp down growth in the segment, it hasn’t stopped it.

“It’s just been a healthy growth pattern,” said CSC’s Rhoads. “The technology hasn’t been dealt any blows and no big obstacles have arisen. Probably the biggest thing that might hinder growth is that a lot of hospitals have a lot on their plate right now.”

Specifically, the 2010 health care reform bill requires health care providers to convert most medical records to electronic form.

“So something like a patient kiosk, which may give you some operational efficiency and improves the accuracy of the data in your system but may not be considered a core necessity, is losing out in terms of not being able to draw away the attention of people,” Rhoads said.

Rockville, Md.-based Summit Research Associates, a kiosk industry research firm, predicts that the use of kiosks in health care is likely to continue to grow. Each year, the company issues its “Kiosks and Interactive Technology,” an 800-page report that includes a list of the interactive kiosk installed base, background on 700



companies and a plethora of charts and tables, along with an examination of leading trends and significant projects.

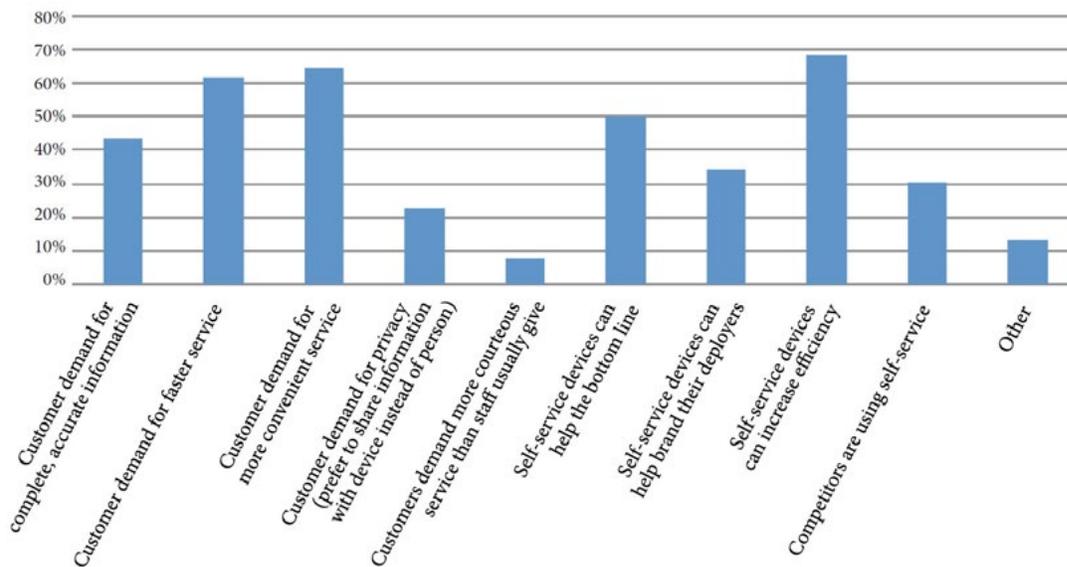
“It would be great to see patients using a kiosk to check in at their doctor’s office,” said Summit founder Francie Mendelsohn. “(Managed care provider) Kaiser Permanente has begun to roll this out in some offices. The patient swipes a card distributed by Kaiser and (the kiosk) brings up her information. It signs in for you.”

Shifting to the electronic storing of patient information would reduce paperwork and eliminate many human input errors, said Mendelsohn. These factors, along with offering greater convenience to their patients, should convince health care providers to invest in kiosk check-in systems, she said.

A sampling of self-service future trends

The following questions were included in the Self-Service Future Trends 2011 report, produced by the Digital Screenmedia Association:

What are your reasons for deploying self-service or considering self-service deployments for the future? (Check all that apply.)



The answer in brief is that respondents consider self-service faster, better and possibly cheaper. Nearly two-thirds of those responding said they offered self-service programs because they offered customers better or more convenient service, and nearly 70 percent called kiosks more efficient. Air travelers and DVD renters in 2010 would probably agree with those conclusions as check-in/checkout

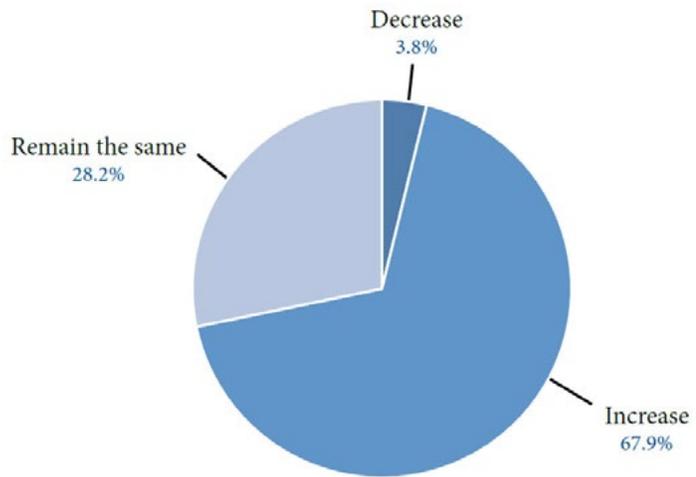
lines have evaporated as providers switched to self-service kiosks.

Competition also drives the deployment of self-service programs, but as a secondary reason. Half of the respondents offered self-service because it helped their bottom line, while less than one third felt they had to respond to the competition's self-service program.

Over the next 12 MONTHS, will your spending on self-service technology increase, decrease or remain the same?

More than 96 percent of respondents say they will spend the same amount or more on this technology in the next 12 months, a positive indicator of the strength of the self-service business model in the midst of a tough economic downturn. Taking the answers separately, more than two-thirds of respondents plan to spend more in the next 12 months, while 28 percent will keep their technology spending steady.

This may correspond with reports of firms across many industries choosing to



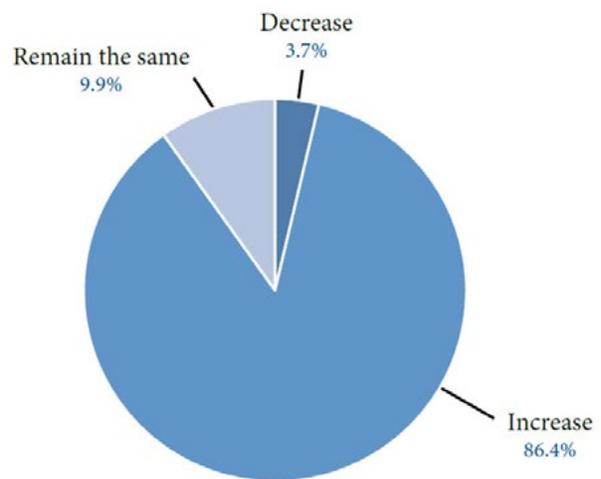
invest in infrastructure and technology rather than personnel, as the United States emerges from a recession.

Over the next 5 YEARS, will your spending on self-service technology increase, decrease or remain the same?

More than 86 percent of firms believe they will be spending more on self-service technology in the next five years, an extraordinary “yes” vote for the future of the industry. About 10 percent of respondents say they will spend the same moving forward.

This optimism is interesting in light of the expected growth of smartphones, a technology that some see as a negative for two of the top self-service sectors of recent years — airline check-in and DVD rental.

However, several leading executives say they see smartphones as a complement, not a competitor, to kiosks. Perhaps the



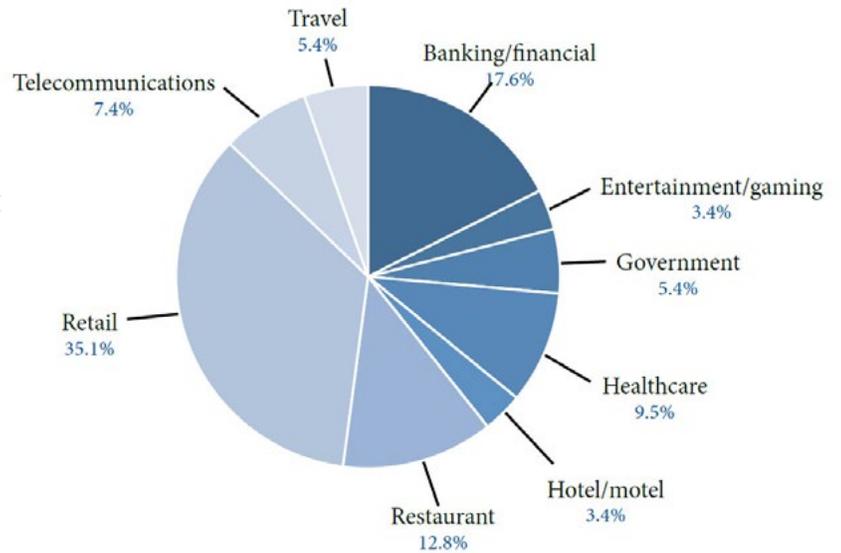
lesson here is that the all-encompassing self-service industry will continue to grow, but that some of the technology providing it may change.

Which industry will benefit the most from self-service in 5 years?

Retail is seen as the primary beneficiary of self-service efforts in the next five years, with 35 percent of respondents considering such applications as loyalty, couponing and discounts, wayfinding and self-checkout at the supermarket.

Nearly 18 percent cited banking as a major beneficiary going forward, while about 13 percent think restaurants will see more self-service, as more quick service restaurants launch self-ordering options.

Health care saw some growth, with approximately 10 percent of respondents thinking an increase is in the works. That's up from 7 percent in the 2007 survey, and



may reflect the federal health care reform legislation that could add as many as 30 million citizens to the patient rolls.

Chapter 4 Case study - The cutting edge

Kiosks have actually been used in health care for many years, first in the form of scales and later in the form of the ubiquitous blood pressure monitoring stations located in pharmacies and supermarkets around the country. Advances in digital technology, however, have transformed those services into an experience akin to what takes place in the doctor's office.

Atlanta-based SoloHealth®, founded in 2007 by CEO Bart Foster, worked with Frank Mayer and Associates, Inc. to develop the SoloHealth Station®, an interactive health and wellness kiosk. The kiosks, located in high-traffic retail locations, help consumers to stay informed about their health leading to prevention of illness and lower health care costs.

SoloHealth was awarded a \$1.2 million grant from the National Institutes of Health in 2011 to create the SoloHealth Station, a self-service kiosk offering free vision, blood pressure, weight and body mass index screenings, as well as an overall health assessment and access to a database of local doctors. The HIPAA-compliant SoloHealth Station received FDA approval in June 2012.

The SoloHealth Station uses a touch screen with helpful videos to walk the consumer through the tests. The screens display advertising while the test results are tabulated. Consumers receive a customized report of their results and scores, an overall health assessment and additional health information. Results can be displayed on the station's screen, or consumers can elect to have those scores sent via text message to their mobile phones or via email. The



The SoloHealth Station is an interactive self-service kiosk that provides free vision, blood pressure, weight and body mass index screenings, as well as overall health assessments and access to a database of local doctors.

bilingual kiosks also offer recommendations for follow-up care.

The company generates revenue via advertising and sponsorships, retail/location fees and doctor/professional listings displayed on the kiosks.

The company rolled out thousands of SoloHealth Stations in retail locations beginning in 2012, including in more than 2,500 Walmart and Sam's Club stores. As of mid-December 2012, 5 million consumers have interacted with the kiosk, up from 2.5 million in late August. Daily consumer usage more than tripled over the

same period, going from 10,000 per day at the end of August to approximately 35,000 at the end of the year.

“If you think about the millions who don’t get regular healthcare exams due to numerous issues, including lack of insurance, location, time and socioeconomic issues, those are people who are simply unaware of many potentially chronic issues that are completely preventable if they only knew and took action,” Foster said.

“We want to be an access platform that helps to empower people to take control of their healthcare,” he said. “Once they become aware, they can take action. And we know that awareness and prevention are the best ways to cut healthcare costs and make a healthier America.”

Along with the more than 5 million consumer visits SoloHealth kiosks have received since their initial rollout, other statistics include:

- Consumers spend an average of 4.5 minutes per session with the kiosk.
- 25% of consumers are returning users.
- The most widely used test is blood pressure, with 57% of users opting for that test.
- Approximately 33% of users took more than one test; blood pressure and BMI are the most popular combination.

- Saturdays are the most popular day for usage, with 19% more users than other days.
- 65% of male and female users are 35 and older. (55% male, 45% female)
- 71% of SoloHealth Station users are at medium to high risk of hypertension.
- 51% of SoloHealth Station users are overweight to obese.

The company estimates the SoloHealth Station will be in 4,000 locations by 2014. Along with Walmart and Sam’s Club locations, the kiosks are currently in use in select Safeway, Publix, CVS and Schnuck’s Markets around the country.

“Although retail is our primary outlet, we are definitely in talks and exploring other options,” Foster said. “If you think about it, the Station extends itself to corporate campuses, healthcare providers/insurers and more.”

In addition to the vision, blood pressure, weight and body mass index screenings currently offered via the SoloHealth Station, the company is expanding services to include a pain management module and a gastrointestinal module.

“Our technology allows us to seamlessly update and improve the variety of services we offer,” Foster said. “We continue to explore options that make sense for consumers and our sponsors.”

Chapter 5 On the horizon

As kiosks, digital signage and mobile technology become more commonplace, the lines that separate them are becoming increasingly blurred.

That blurring has been given a name: convergence. And it's becoming more of a factor when considering kiosk design.

"It used to be that you'd integrate two monitors on a kiosk and that was the 'convergence' point for digital signage," said Frank Olea, CEO of Artesia, Calif.-based kiosk design firm Olea Kiosks Inc.

"While that is still a prevalent design, today we're seeing it shift to kiosks that use a single display but much larger than the typical 19-inch monitor," he said. "We're designing kiosks often with 22-inch, 32-inch and 42-inch touchscreens in both wall mount and freestanding form factors."

The convergence of interactivity with large-format screens combines the best of digital signage with self-service kiosks to create a more immersive and engaging consumer experience, said Dusty Lutz, general manager of kiosk solutions provider NCR Netkey, based in Easthaven, Conn.

"The digital signage helps drive the visual merchandising marketing messages while the kiosk provides the ability for the consumer to view product and services information and, if necessary, order and purchase from the device," Lutz said.

Kiosk design is increasingly incorporating features that consumers have become accustomed to via their smartphones. Products such as the iPhone, iPod and other handheld digital devices are inspiring companies to rethink what a kiosk might look and act like in the future.

"Lately, we've been asked to come up with flush-mounted touchscreens like you have with the iPhone and many of the Droid-based phones on the market," Olea said. "We're working closely with our vendors to develop touchscreen technology for kiosks that can be flush-mounted and eliminate the typical bezel you see on kiosks today."

"The future of kiosks and table tops is substantial," said KIOSK Information Systems' Keefner. "There are many more unexplored applications that will certainly be implemented as time goes by and the industry begins to see success in adoption."

Smartphones

One of the key indicators of the direction of kiosk and digital signage technology is the airport.

Check-in kiosks for air travelers are nearly ubiquitous, and it's difficult to remember the days when they weren't being used. Television monitors and digital screens have long been the standard way of informing travelers that their flight has been delayed.

Kiosk design is increasingly incorporating features that consumers have become accustomed to via their smartphones. Products such as the iPhone, iPod and other hand-held digital devices are inspiring companies to rethink what a kiosk might look and act like in the future.



As smartphones become more ubiquitous, people will want to use them to schedule appointments or remotely check in for a doctor's visit.

Despite the popularity of those technologies, however, they're undergoing a change.

At many airports, travelers can simply download their boarding pass to a smartphone, passing the device under a barcode reader as they enter the gate. And when purchasing a ticket, most airlines offer the option of receiving text message alerts in the case of a delayed or cancelled flight.

Those applications, experts say, are likely to make their way to the waiting room.

"If I can schedule an appointment from the privacy of home from my computer, or check in from the parking lot of the doctor's office using my mobile phone, I'm going to do that," Frank Mayer and Associates' Bowers said. "Or comparing it to the airline example, I might be able to

check to see how late the doctor's running on his appointments. I can see a time where a person's mobile device is going to be a portal to all types of remote monitoring solutions."

Digital screens

According to the Bureau of Labor Statistics, there are at least 1.5 million doctor's offices in the United States. Add to that the number of dental clinics, chiropractors' offices, hospital waiting rooms and other medical facilities around the country, and that number could easily approach 5 million or more.

And each one of those locations is a potential site for a digital screen.

"Digital signage is considered one of the most effective communications tools due to the dynamic nature of the screen content changing from image to image, versus the use of static signage," said Mike Zmuda, director of business development for Itasca, Ill.-based NEC Display Solutions, a provider of digital signage solutions. "Simply put, good digital signage content is relevant for the audience and the environment and offers context based on what is going on at that particular time, in that particular health care facility."

Anyone who has ever sat in a doctor's office lobby or hospital emergency room knows that time slows down when one is waiting for an appointment or an update on a loved one.

"Health care is notorious for having you sit in different waiting rooms and look at six-month-old magazines," said Ryan Cahoy, vice president of sales and marketing

for Shawnee, Kan.-based digital signage provider Rise Vision. “Digital signage can provide something that will help alleviate that perceived wait time. While you’re sitting there, you can see the latest news, weather and sports scores.”

Bowers related an experience illustrating the potential of digital screens in waiting rooms.

“I was in a waiting room recently and there was a big flat panel screen with a code that I was given that matched the person I was waiting for,” Bowers said.

“There were boxes that told me the progress of the operation and what room the patient was in, so I didn’t have to keep bugging the person at the desk for that information,” he said. “That was really a nice thing to have.”

More and more, medical practitioners seem to be recognizing the benefits of outfitting their waiting rooms with digital signage.

“It’s a massive growth opportunity,” said Rob Gorrie, president and founder of digital signage media service Adcentricity, based in New York. “Doctor’s offices are one of our highest growth areas.”

But beyond helping waiting patients pass the time, what are the benefits of outfitting a waiting room with digital signage? After all, chances are those patients will wait anyway whether or not they are being entertained by a digital signage network.

“If you think about it, those screens afford each individual doctor (the chance) to showcase their skills and offer additional health care opportunities to patients,”



Replacing out-of-date magazines with digital signage in the waiting room is one way to increase patient satisfaction.

Gorrie said. “That can generate additional revenue opportunities.”

Harry Cagnetto, delivery director with Fort Lauderdale, Fla.-based technology provider Technisource Deployment Services, saw that concept in action at a chiropractor’s office.

“His digital signage was for general information as well as advertising to let patients know what additional services he provides and what technology he utilizes to set himself apart from other chiropractors,” Cagnetto said. “In between that information was usually inspirational segments about past clients.”

Beyond serving to entertain waiting patients and inform them of patient progress or additional services, digital signage networks can generate additional revenue for medical offices in a number of ways. One is by partnering with pharmaceutical companies and providers of health care products to display advertising.

And a newer concept is to offer screen space to providers of products and services that aren't related to health care, based on the demographics of those likely to be sitting in a doctor's waiting room. A pediatrician's waiting room is likely to be filled with mothers who might be in the market for a minivan, while a cardiologist's waiting room is likely to be filled with senior citizens who might be considering a cruise for their next vacation.

"We are starting to see some big demand for the automotive and telecommunications world, and there has been some interest from the travel world into these environments," Gorrie said. "There is a huge opportunity there. I think you'll see some significant growth in the next 12 months as advertisers realize that these are the types of consumers they want to reach."

Benefits of digital signage for health care providers

- Alleviate perceived wait time
- Efficient communication of information
- Showcase doctors' skills
- Generate revenue