

Remote Device Management

Improve uptime and generate value with remote management systems



INSIDE: Remote Device Management keeps your self-service machine up and running, creates efficiencies, generates revenue and gives you valuable business insights.

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Esprida Corporation is an innovator in the development of device management solutions. Esprida offers an enterprise solution that enables businesses to manage and control networks of devices in diverse locations from a Web browser. Esprida Enterprise delivers device-generated intelligence and device-oriented analytics to maximize availability, enhance user experience, increase revenue and transform business strategies and operations. Esprida Corporation is a privately held company with offices in the U.S. and Canada.*

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Introduction: Remote Management Systems

The average business person at first might think it simple to deploy an intelligent device such as a kiosk. It comes in a box, all wrapped up, ready to plug in and generate profits. But once the kiosk is on the floor, things get complicated.

People start using the kiosk. They deplete paper and ink from its printer. Tiny imperfections mar the touchscreen so that the gentle poke of customer fingers no longer registers. Software that governs the kiosk runs into life-stopping glitches. Deployers try their best to keep the kiosk and its peripherals functional, and most of the time they succeed.

But let's say the deployer with one kiosk rapidly opens new stores, each with its own kiosk. Suddenly, he can no longer stay on top of the paper jams and crashes, and he finds it difficult to train and motivate staff to take care of the kiosk. The neglected, non-functioning kiosks can sit idle for days at a time, not only failing to provide a positive experience for customers, but actually creating a negative experience. And worse even when the kiosks are operational, the deployer may have no sense of who is using them. Or when. Or why. And because he does not know enough about his customers' usage patterns to maximize their engagements and increase their visits, he loses business.

Fortunately, there is a solution — remote device management.

Remote device management: Create efficiencies, generate revenue

Thank you for downloading "A Guide to Remote Device Management: How to Improve Uptime and Generate Value with Remote Management Sys-

tems." In the next several pages, we'll take a look at the two basic benefit sets related to this unique class of software.

First, by enabling any number of intelligent devices to be monitored and controlled from one or more locations, the programs make it easy to detect problems, and in many cases prevent problems or even repair them remotely. The devices function more consistently as a result, and the deployer can reduce the number of costly onsite repairs, and ensure the customer experience is always positive. The result — a more efficiently run operation.

Second, remote management software allows deployers to harvest valuable statistics about usage. Information such as who is using the machine, when, and for what, can be mined for data on how best to use the kiosk (add different applications? move it to a different part of the store?) and even

how to grow the overall business surrounding it. Remote management allows businesses to cultivate partnerships and create opportunities for crossover sales.

The result — more opportunities for generating revenue.

A word of thanks

Self-Service World and KioskMarketplace would like to thank Esprida Corporation, a leading provider of remote device management solutions, for sponsoring this guide. Its generosity brings it to you at no cost.

— Joseph Grove



Joseph Grove, associate publisher
Self-Service World and KioskMarketplace

Because he does not know enough about his customers to maximize their visits, he loses business.

Chapter 1: Remote Device Management: What It Is, How It Works

In 1997, George Wrightsman began conversations with the federal government. The Department of Housing and Urban Development needed a way to communicate information to people across the country who used its services, and kiosks had emerged as a 24/7, affordable option. Wrightsman and the small technology firm where he was president, Eagle Collaborative Computing Services, won the job.

The initial rollout of the project began in 1998, according to Wrightsman. To date, he has deployed 89 kiosks — seven built into the façade of buildings, 82 stationed free-standing in public areas such as malls, libraries and shopping centers.

In the face of such a large rollout, Wrightsman was confronted with the challenge of managing a geographically large footprint from his Virginia office.

Move to the next level

His original solution was a software program that remotely monitored the machines for some basic functionality.

“It became an issue almost immediately because, at the time, the product we were using did not facilitate us actively monitoring the units,” Wrightsman said. “It only allowed us to have the units contact the server periodically to let us know it was alive.”

While the periodic pings from the kiosks provided some basic assurances that machines were still among the living, the time elapsing between the messages allowed for all sorts of mishaps. Sometimes machines would be offline for several days before anyone at Wrightsman’s office would be able to notice the missed update. Worse, while the pings sent the equivalent of a check on the machine’s heartbeat, they said nothing about other

mission-critical components, such as the status of peripherals like touchscreens and printers.

“Basically, all we knew was that a computer was up, and it was connected to the Internet, but that was all we knew,” he said.

Two concerns resulted. First, Wrightsman had a big client to keep happy — the United States government. Second, the lack of solid information — and the inability to be proactive from a distance — meant the threat of high on-site maintenance visits.

Remote monitoring was one thing. What he needed was remote management.

“Once intelligent devices are part of your business operations, having an enterprise solution to handle device management becomes a critical part of your strategy.”

Anila Jobanputra, president and co-founder, Esprida Corporation

In early 2001, he began a search for a product that would allow him to monitor the kiosks for online status and give adequate notice of problems or potential problems that could be repaired in a cost-efficient manner. Keeping expenditures low was a priority for Wrightsman because his work was based on a fixed-price.

“So we were shooting to reduce our costs by reducing the number of remedial visits that we had to have to the unit. And by actively monitoring the kiosk, we knew that we could reduce substantially those remedial visits, if not eliminate them altogether.”

Monitoring versus managing

Imagine your hand on a stovetop gradually feeling warmer until the surface becomes unbearably hot.

CHAPTER 1: Remote Device Management: What It Is, How It Works

Imagine you cannot move your hand. That's remote monitoring — it gives you the ability to know your business's pain points but doesn't allow you to do much to remedy the situation.

Remote management gives you the control you need to avoid getting burnt. You are able to move your hand out of harm's way and turn down the temperature. (In Chapter 3, we'll examine some of the developing ancillary benefits of remote management that may mean even more to the growth of a business.)

Whether you have one kiosk — which can include several components, such as printers, touch-screens, cash acceptors and card readers — or hundreds, once you're in the business of managing them, you are in it all the way.

"Once intelligent devices are part of your business operations, having an enterprise solution to handle device management becomes a critical part of your strategy," said Anila Jobanputra, president and co-founder of Esprida Corporation.

"Why? Because in addition to first tier benefits — increased uptime and reduced service costs — your business gains a competitive edge through new market opportunities, optimized operations, enhanced user experience and increased revenue."

By actively monitoring his kiosks — that is, managing them — Wrightsman was able to ensure reliability more consistently and affordably.

Remote management "allows us to manage our network operations center from here in Virginia, where we can have a single individual responsible for monitoring and maintaining all of our networks," Wrightsman said.

ECCS used one person to monitor feedback from the HUD remote management software as well as that from one other deployment. Alarms and triggers were set so that even if the employee was away from his desk, he could be notified.

The information allowed ECCS to make decisions based on the service-level agreement attached to the deployment.

"For example, we may have one service level agreement with one customer that requires, within

four hours of a problem being identified, we have to have it corrected. We may have another SLA that says we've got

24 hours. So, based on a specific network, we can adjust those alarms and triggers so that we're not expending resources and costs on an SLA that we don't need to."

Another benefit he said is that as a small business, he needs the savings of reducing the number of resources necessary to ensure that he meets all of his SLAs, regardless of the response times within those SLAs.

"I don't believe that currently we have any SLAs that have not been met since we implemented the Esprida solution. So obviously that makes our customers happy."

"Businesses that manage devices themselves often spend time and money in futile efforts to keep their machines operational," Jobanputra said. "A remote device management solution creates efficiencies in maintaining the devices — it saves time and allows companies to focus on their core business."

"Knowing what your devices are doing at any given moment and getting that information to the people



CHAPTER 1: Remote Device Management: What It Is, How It Works

who need it, at the precise moment they need it, gives you the power to make informed business decisions.”

How it works

Several components make up a complete remote management solution.

1. The device itself, connected to the Internet. Esprida DMD, a management agent, is installed on each device and acts on behalf of the server.
2. A server. The Esprida SVR receives messages, takes actions and sends orders to Esprida DMD in the field.
3. A web browser to manage the device through the server. Various groups or departments — service personnel, administrators and business/marketing managers — have role-based access.

Signifi Solutions Inc. offers multiple digital solutions on one platform and is a good example of how this remote management system works to the benefit of all stakeholders. Signifi’s latest offering is a combination of three options in one self-service kiosk — photo, music and ringtones. The kiosks are located on-site with Signifi’s partners. Part of the company’s challenge is to help managers at each location keep the machines operational and viable.

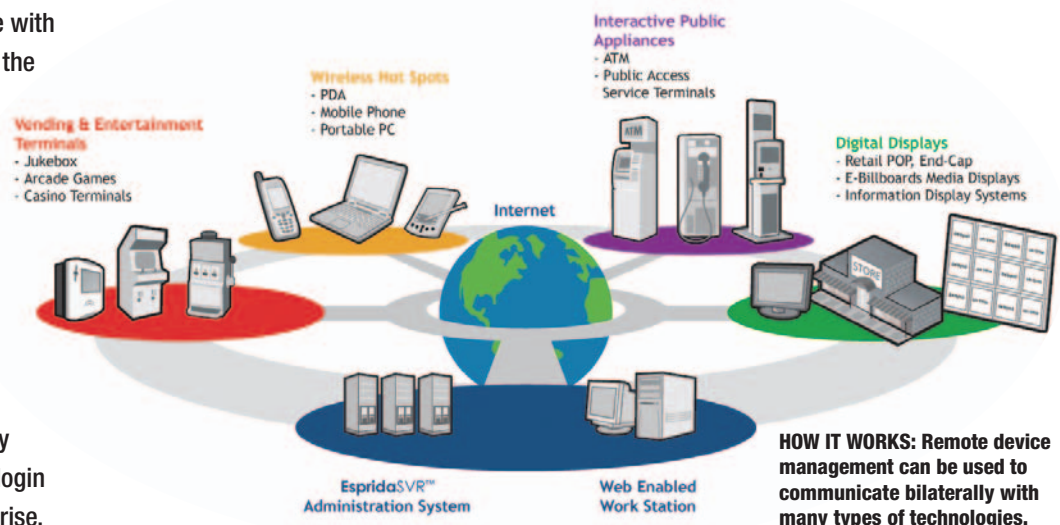
According to Shamir Jaffer, president of Signifi, her customers buy a contract and receive a login directly to Esprida Enterprise.

“We give them access and set role-based logins. What’s really powerful with the system and again kind of gives us a little bit of an edge over the rest of the market is we have a dashboard that we cruise for the customer,” she said.

“If someone from the I.T. department logs in, that person will see an I.T. dashboard that will tell them, ‘These are the issues that need to be looked at.’ When management logs in, they see reports customized with information that is relevant to help them make decisions that focus on maximizing their return on investment”

Jaffer works closely with management to figure out the key issues they need to watch for, like exception reports.

“We know the machines are doing well, but want to focus in on the machines that are taking more than two hours to replace papers,” Jaffer said. “These exception reports allow us to point out staff behavior, faulty hardware or bad locations so we can take preventive action. If a location is not appropriate we can tell if the machines aren’t being touched for three hours at a time and take action.”



The kiosks can be so closely monitored that Signifi can identify a list of the “top 10” underperforming machines. That can be very helpful given that time constraints and smaller staff mean deployers often do not have the personnel bandwidth to keep a well-trained eye on store equipment.

A note on security

The essence of remote management is data traveling to and from various machines over thousands of miles of Internet. Sometimes, particularly when the client is the federal or a state government, the client can have a heightened concern around this issue. A prime component of any solution, then, must be the ability to offer its own security as well as to cooperate with other security solutions. Wrightsman said, “Obviously, any time you’re dealing with the Federal government, they want to know how your network is configured. They want to make sure everything is behind firewalls. They want to make sure that you don’t have everything open so that anybody can slam your ports.”

Wrightsmann, who deployed the solution for HUD, faced this issue head-on when his project rolled out. He needed a solution that offered its own



Signifi Solutions' QuickPix photo kiosk, operating with remote device management software, lets deployers know when critical functions are in peril. In addition, managers can pre-set promotions and target discount offers based on the information captured from the device.

security features and met government standards. In addition, the solution had to be able to communicate with government computers.

What he needed was a remote management solution that could provide multiple levels of security.

7 Important Requirements

When choosing your remote-management program, make sure you get positive assurances from your supplier on these key criteria:

1. Does it offer choices of OS/DB platforms?
2. Does it provide self-healing of devices?
3. Is the framework extensible?
4. Does it allow for the flexible grouping of devices?
5. Is it secure? In addition to using the latest security methodologies, are administrator views locked down so they only see authorized information?
6. Does it allow you to automate device functions, implement business rules and create reports?
7. Can device profiles be managed, even for newly discovered devices?

Chapter 2: A Disabled Kiosk and How It Can Hurt Your Business

A dead kiosk or any other customer-facing device is bad for business. So why are there so many of them?

- Businesses underestimate the effect of a disabled device on their operations.
- Getting staff buy-in on the importance of keeping devices up and running is difficult.
- Owners and operators don't see the benefits of maximizing uptime.

When a device is down, everyone loses

First, obviously, the customer loses.

Second, the store loses.

"It's the same problem consumers have with vending machines, like in a hotel: You put money in the soda machine, and nothing comes out. Who do you blame?" said Janelle Barlow, chief executive officer for Branded Customer Service—The Americas.

"But with kiosks, if there's a problem, both the company it's branded for and the store are going to suffer."

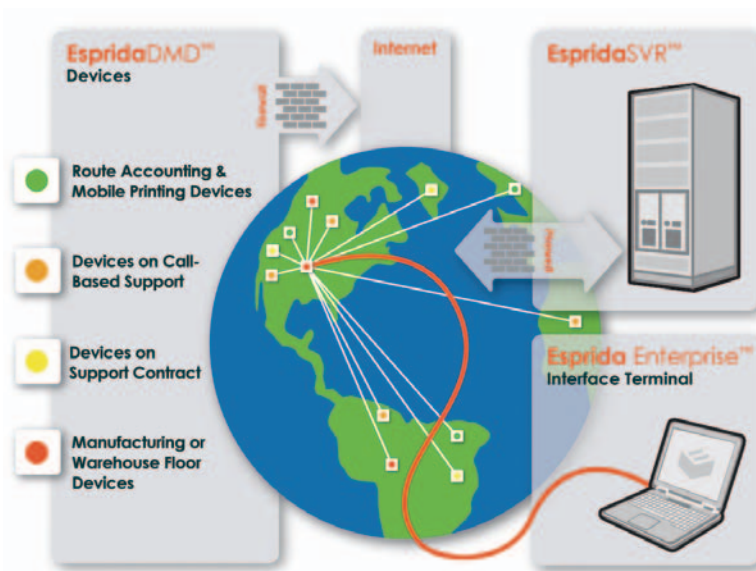
Janelle Barlow, CEO, Branded Customer Service — The Americas

"On the machine there will be a number to call, but are you really going to call it? The annoyance at that point is with the hotel. Why aren't they looking at the machines? They depend on the company to come out and restock the machines, to get the money out, 24 hours a day. When you're at the bank, you expect the bank to go and fix the ATM. Our expectations are different. Consumers have a difficult time distinguishing between brand and store. So if something goes wrong on either end, it's hard to say where the responsibility is going to fall."

Third, the kiosk manufacturer loses.

"There's been a lot of research done about purchasing items in retail stores. When you buy a bad product from Macy's, Macy's doesn't get blamed," Barlow said. "The public is pretty good at distinguishing between distributor and brand when they're sitting in the store. But with kiosks, if there's a problem, both the company it's branded for and the store are going to suffer."

Or as Esprida's Anila Jobanputra said, "If a kiosk has an 'out of order' sign or if it earns a reputation for not always being available, customers lose interest in using that device and chances are they won't come back to use



PLUGGED IN: Communication for remote management-enabled devices should be secure and multipurpose.

the kiosk. And every time someone walks away from a kiosk, you lose an opportunity to influence customer behavior.”

Fourth and finally, all of the self-service industry loses.

“The negative experience reinforces a lack of trust with the technology, which may impact adoption,” said Dr. Peter Honebein, president of the Customer Performance Group and co-author of “Creating Do-It-Yourself Customers.”

“United Airlines found an interesting phenomenon with their EasyCheck-In System. If there wasn’t a line in front of a kiosk, customers would assume the kiosk was broken, and wouldn’t leave their place in line at another kiosk to attempt a transaction. United eventually changed the queuing process for kiosks to eliminate this effect.”

Remote device management and your staff

One reason the self-service industry is thriving is that businesses feel increasing pressure to keep personnel costs low, or at least to divert as many personnel hours as possible away from mundane service tasks and re-direct that time to serving consumers.

So it is ironic that when a kiosk is down, an organization relies on on-site staff, the very people the machine is intended to aide or replace, in serving customers. Yet that is what Signifi’s Shamira Jaffer sees frequently.

“The big issue retailers are having is the amount of time it takes their staff to manage kiosks” she said. “If there’s a problem with the kiosk, they’re expecting their customer service person to be calling somebody for support and help and troubleshoot the problem with the help desk. “ Without Esprida, our retailers would be in the same position.”

10 Key Benefits of Remote Management Software

1. Increased uptime
2. Increased revenue
3. Better customer satisfaction
4. More efficient allocation of I.T. staff
5. Reduced service costs
6. Control over content
7. Software upgrades
8. Deployers proactive, not reactive
9. Helps deployments scale
10. Takes advantage of rich network applications

In other words, bad experiences with offline kiosks and no one with time to ensure they are revived has soured the taste buds of many potential deployers.

Jaffer is able, however, to go in with a very different solution — one that offers the services customers are demanding from self-service technology and is also able to mitigate a large part of the burden maintaining that technology might otherwise place on staff. It does that through remote management software: the machines heal themselves, or alert Signifi before the problem reaches a critical level, before the customer even knows an issue exists.

“The kiosk will notify our help desk and manage the issue by escalating it until the problem is resolved. That is huge value to the retailer,” Jaffer said.

Chapter 3: Strength and Knowledge in Numbers

It's one thing to keep an intelligent device up and running. It's another to use it as a powerful marketing tool, one that can be used to study users, improve the deployer's ability to make decisions, and facilitate the creation of partnerships.

Remote management has been called "intelligent" device management for years now. And it's getting a little more intelligent all the time.

Not only can data be pushed upstream regarding functionality, but so can more interesting facts (see sidebar, page 11).

In addition, remote management also can help the kiosk work with other machines employed by different companies, driving cross-selling of goods and services with allies.

"More companies are beginning to realize the untapped potential in the information they can harvest through remote device management," said Anila Jobanputra, president and co-founder of Esprida Corporation. "It's more than knowing what your devices are doing. It's about using that intelligence to generate revenue and transform your business model."

Cups running over

So much information can be collected, says Dr. Peter Honebein, co-author of "Creating Do-It-Yourself Customers," that business owners need to be selective.

"There is a lot of data we can mine, from individual keystrokes to the result of the overall experience," Honebein said.

"But what is important here is that there is a priority to what you collect and analyze, since mining can be expensive. Most businesses have a set of five to seven key metrics that are critical indicators for guiding the business (or in this case, kiosk). If



Secretary of State Terri Lynn Land demonstrates the ease of using the new self-service station to a customer in the Grand Rapids area SUPER Center. The ATM-style machine lets eligible customers renew their vehicle tabs in seconds, without waiting in line for service at the counter.

your self-service system is a revenue generator, then obviously sales volume is a critical metric."

The State of Michigan

Tom Weston is a government employee. And like most jobs where the boss of the boss is the man or woman who pulls the lever in November, his is subject to quadrennial revolution.

A candidate for secretary of state — the office in charge of vehicle registrations and several other administrative functions — went to voters with three hard facts and one easy fix: More people needed to renew their vehicle registrations. The people who needed this service live more spread out than ever. And money, as always, was tighter than ever. The fix? Self-service kiosks.

"We had to have this thing running by December (2004)," said Weston, whose official title is e-commerce project manager but who should be called Miracle Maker. "I got the project in March, we had to go live in December."

CHAPTER 3: Strength and Knowledge in Numbers

He pulled it off. And now that he's facing the end of the deployment's ramp up, the mission will go from all-out blitz to precision honing.

Here are a few benefits Weston associates with the remote management component of the kiosk:

1. More efficient placement. Depending on the volume of usage, some machines may be moved to more heavily trafficked areas.
2. Understanding self-service habits of citizens. What demographics are using the kiosks? Weston plans next year to begin examining what types of vehicles are being renewed through them. He admits that information by itself is not an intuitive question to ask, but the answers allow for important inferences: Someone who uses a kiosk to renew the license for a 2005 BMW 7 Series represents a different kind of constituent (read: voter) than the one who keeps a '75 Corolla legit.
3. Understanding how close people cut it to their tag renewal dates.

Weston said the state also is developing plans for a self-service application for low-risk parolees, where low-risk probationers could make many of

their parole check-ins electronically. Data collection there would be especially important, Weston said because it will allow probation officers to spend more time with high risk probationers.

Leveraging usage patterns

Shamira Jaffer, president of Signifi, presented another application of data harvesting.

A customer who operated a department store learned with help from the remote management reports that 20 percent of its consumers embraced its new kiosk and completed transactions at the machines instead of ordering the traditional way, from staff at the catalog counter. The customer was pleased with the usage. But Signifi peeled one more layer from the onion: Its analysis of the data showed that there was another 20 percent who walked away before completing a purchase. The problem? The transaction screen of the interface was too complex to understand and they resorted to the old way of ordering.

"It's something that we would have never known if it weren't for the remote management. And we were able to change that," said Jaffer.

Jaffer also cited the benefit of being able to plan promotions several months in advance, for many machines at once. If Jaffer wants all of her photo kiosks to offer a special print package for Valentine's Day, she can set all the parameters ahead of time — from prices, graphics and the exact time the promotion is available.

Information on Call

Many types of data gleaned from remote device management can be used to generate efficiency and increase revenue.

- How often the kiosk is being used — and when
- Types of transactions conducted
- Percent of transactions completed to purchase
- In-service ratio transaction time
- Number of pages/screens visited
- Ranking of screens visited

Appendix: Measuring the Success of the Self-Service Deployment

This story first appeared in the Winter 2006 Retail Self-Service Executive Summary, published by Self-Service World and Kiosk Marketplace.

Deploying self-service can be an exhilarating experience — here are new technologies that promise to do great things, such as increase productivity, reduce costs and make customers happier. As we begin a new year, now is a great time to take an inventory of those self-service systems and see if you're getting as much out of them as you should.

Despite the bewildering variety of kiosks and self-service applications, they almost always can be divided into two camps: transactional and informational. As the names imply, the former facilitates some sort of transaction (buying a ticket, printing a boarding pass, scanning and paying for groceries) while the latter dispenses information (an office wayfinding map, a retail price lookup, product info).

Transactional kiosks are the easiest for which to measure success, as they are modeled on tangible metrics like number of transactions, revenue per transaction and hourly activity. Countless useful statistics can be extrapolated from the data such a kiosk produces — percentage of customers that use plastic versus cash, what times of day see the heaviest traffic, which items sell better at which locations at which times and on which days.

Charlie Casserta, president of Livewire International, said his company's hospitality and ticketing eConcierge kiosks measure every activity on the part of the user, down to what pages were viewed and for how long. If a customer begins a purchase transaction but doesn't complete it, that too is recorded — along with what screen the customer bailed out on.

He also said that adding a real-world component — in his case, a coupon — makes for a valuable

connection to the transaction and its provider. The coupons also provide a tangible connection between the kiosk's service and the perceived value for the advertiser.

"That's a metric that we were able to measure," he said. "From my standpoint, with a financial background, I'm looking to measure something. We try very hard to put something onto the kiosk that will allow us to measure it."

"From my standpoint, with a financial background, I'm looking to measure something. We try very hard to put something onto the kiosk that will allow us to measure it."

Charlie Casserta, president, Livewire International

Soft metrics

Measurement becomes a problem when there is no transaction to record. How can you tell, for instance, the impact your company's product information kiosk is having?

"For products with softer metrics, businesses can still look at the reduced number of complaints, the reduced number of customers asking for pricing help, and tie it to overall labor savings," said Nick Daddabbo, senior product manager for Hand Held Products. "It becomes a factor of a more efficient workforce."

Lief Larson, director of research for Valhalla Worldwide LLC, said that informational self-service devices provide an insight into the mind of the customer and, if viewed properly, become research tools for the company deploying them. For instance, it is easy for an informational kiosk to measure which pages are the most popular, which

APPENDIX: Measuring the Success of the Self-Service Deployment

features are requested most often, what products are most often scanned for a price lookup, etc.

“By analyzing and improving the kiosk system and its link between the supplier, internal customers and the end customer, the entire process chain could result in a well-defined and synchronized improvement strategy that provides immediate as well as long-term improvement results,” Larson said.

Give it time

A key part of measurement is adjustment — that is, taking the information gleaned from your systems and making decisions about what to do differently.

But how long should you allow data to accumulate before making changes based on that data — in other words, how long should you allow your deployment to “find its legs”?

Opinions vary widely. Tom Weaver of Kiosk Information Systems said informational kiosks should demonstrate their worth within 30 days, while transactional applications should be given at least six months “to get a balanced representation.”

Nick Daddabbo said he likes to give projects 18 to 24 months to let momentum build. “If you cannot see signs of success in that time frame, then it needs to change,” he added.

Safwan Shah of Infonox takes the opposite approach, feeling that systems need to work — and work well — sooner rather than later. “In a properly designed and deployed self-service system, there should be near-real-time tweaks toward improvement, and time to ‘find its legs’ should never go beyond days.”