



the Test of Trust

Building Confidence in the “Next Generation” of e-Business Outsourcing

*World-class e-Business
performance standards
demand fully integrated
system design, development,
implementation, monitoring,
and management.*

Reliable e-Business application and infrastructure Web performance is central to the success of corporate marketing, branding, and commerce. Today, online image, promotion, and facilitation of business transactions play an ever-increasing role in bringing products/services and customers together in the marketplace. In response, the “next generation” of Web outsourcing platforms and services is now being introduced. These platforms have literally hundreds of elements to integrate and coordinate. Finding and evaluating the right solution and identifying a managed service provider you can have confidence in is key to meeting the challenge.

Top corporations are discovering that world-class e-Business performance standards demand fully integrated system design, development, implementation, monitoring, and management. Systems today must be more comprehensive and more business focused than ever. Networks, data centers, and computer and application infrastructures must be fully coordinated across multiple customer touchpoints. System-wide, near-real-time solutions for measuring and improving performance must be designed, developed and maintained.

Strategic Questions

As a thoughtful business leader responding to the challenges of evolving e-Business requirements and expectations, you should start by examining your existing resources as well—asking questions that help you weigh technology alternatives, assess risk, and improve user experience. Questions that will affect your business application success:

- Can my IT staff provide world-class Web application performance now?
Will they be able to handle it in the future?
- Is delivering these services in-house a cost-effective business decision that promises a strong Return on Investment (ROI)?
- Which IT initiatives should my scarce resources be focused on?

Then you need to ask the tough questions about the alternate approach, outsourcing:

- Should I partner with a managed service provider so they can design, implement, and manage my e-Business?
- How do I accurately appraise the abilities of managed service providers?

Above all, you need to ask the seemingly intangible, yet critical strategic question: Do I trust this provider with my business?

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With the complexity and investment come the risks, and the over-riding need to mitigate them by identifying a provider you can **trust** to consolidate multiple, varied networking requirements onto a single efficient, scalable, reliable, and potentially lower-cost network e-Infrastructure.

Contemplating Investment in an External Solution and Provider

If you are considering an external solution, and you are skeptical about taking the risk, ask yourself the following questions. The answers should help you determine if it is imperative for the success of your business to investigate a managed service provider:

- Does your internal IT organization have the skills or financial resources to provide world-class infrastructure and Web performance?
- Are the internal skills present, but better utilized elsewhere—in strategic application development and deployment, for example?
- Is the e-Business application clearly becoming critical to your organization's success?

- Do you anticipate difficulties in delivering the advanced capabilities needed to support e-Business expansion and growth?
- Do you anticipate significant growth in Web site traffic, requiring rapid increases of bandwidth to prevent congestion and downtime?
- Are your end-users experiencing unacceptable downtime or performance degradation from your Web site?

If you answered “yes” to one or more of these questions, then you will benefit from finding and partnering with a managed service provider—someone that you can **trust** to help develop the critical e-Infrastructure that is the foundation of success for your business.

Your managed service provider should evolve into a natural extension of your team.

You should feel confident in your provider’s expertise and your relationship should naturally evolve into a business partnership—a relationship that will last for years. As technology continues to improve, your business partner should integrate the latest technology into your solution, maximizing your business potential and success.

What Attributes Should You Look For in a Managed Service Provider?

What does a managed service provider need to do to earn your trust? A leading industry publication outlined some of the key attributes for third-party managed service providers—managed service providers must:

- Use specific, measurable service and performance metrics and/or Service Level Agreements
- Offer maximum reliability and systematic integration
- Enable decision-makers to measure performance remotely, in an easily accessible, convenient manner
- Integrate five key services: security, customer care, reporting, testing, and storage
- Support growth and change by providing high levels of scalability, including storage-on-demand and servers-on-demand features

Using their management platforms, your service provider’s IT professionals must be able to conduct advanced root-cause fault analysis—correlating events across network computing elements including applications, hardware, servers, and storage devices. They must identify the

Entertainment Sites Benefit from “Next Generation” Outsourcing

When e-Business clients choose the right managed service provider they often experience benefits beyond their original expectations. For example, nabiscoworld.com and candystand.com¹, two high-bandwidth entertainment sites that serve as key marketing tools, decided to outsource the hosting environment and e-Infrastructure of their sites. The sites are used to measure the interests and activity of consumers, while providing them with engaging, brand-focused Web experiences. The sites were hosted and managed internally, but as traffic on the sites and the demand for greater application and infrastructure performance continually increased, nabiscoworld.com and candystand.com sought an outsourced solution.

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impact an event has had on their applications and performance criteria. They must receive near-real-time reporting on the status of their network and on the performance of their applications.

Another important attribute of superior service is a proven ability to deliver concrete benefits. Experience has shown that the positive gains you are able to derive from outsourcing will enhance your sense of confidence and mitigate any remaining risks (see sidebar on page 3).

At a minimum, you must believe that the managed service provider you select will deliver:

- **Enhanced Performance** – Ensuring predictable business transaction performance and optimal end user experience are key to performance management. Bandwidth should be readily available, allowing your Web site(s) to run at expandable power and speed—even in the face of significant increases in traffic. Correctly configured hardware and software should also contribute to superior performance.
- **Superior Availability** – Your Web site should be available to end users 24x7x365, even while content and applications are being updated.
- **Cost Savings** – You should be able to achieve headcount and operational savings while freeing resources for core business efforts and strategic efforts such as application development. Savings might also come from the avoidance of investment in high-ticket expenditures like server upgrades, software licenses, and dedicated bandwidth.

A capable managed service provider deploys an integrated, proactive, and predictive network and systems management platform.

The most important attribute, though, is **trustworthiness**. Managed service providers must earn your trust. This is the chief currency of the business.

How Do You Develop Trust in a Managed Service Provider and Their Technical Solutions?

It can certainly be difficult to place your trust in a managed service provider when the challenge is so critical to your business. Since end-user satisfaction is the controlling factor, you must make sure that their experiences are positive. A capable managed service provider deploys an integrated, proactive, and predictive network and systems management platform, capable of supporting rapid change while delivering solid ROI. Initiatives that fail to meet these stringent requirements can easily be crippled when funding is diverted to projects promising faster returns.

To make it work, the managed service provider must unify its view and enable operational control of its Internet and networking infrastructure elements. This requires a broad skill set:

- Expertise in designing, building, implementing, and managing an application-centric infrastructure across the network, hardware, software, and services elements.
- Business and technical skills that ensure optimal Web site performance while supporting an organization's core business objective.
- Technical and analytical skills to monitor and manage the infrastructure around the clock so that potentially troublesome events or trends are detected, correlated, reported, and addressed before they result in outages or degraded performance.
- IT management skills to ensure that as your network grows in size—and becomes increasingly complex—you can continue to monitor it, and proactively deliver peak requirements at a reasonable cost.
- Specialized skills in high availability and security to ensure that your Internet infrastructure remains reliable and protected no matter how complex it becomes.
- Skills and expertise in the ongoing monitoring and management of application performance, fault tolerance, change and capacity processes, and policy management—all are necessary to ensure optimal end-user performance.

These challenges encompass the entire lifecycle, from planning and implementation through operations, in seven functional areas:

- Hosting Data Center Evaluation
- Pre-Operational Planning and Consulting
- e-Infrastructure Assessment, Engineering and Integration
- Application Architecture Design and Migration
- e-Infrastructure Management and Operational Support
- Application Performance Monitoring and Reporting
- Service Level Agreements

How do you develop trust in the solution and the managed service provider that supports your e-Business application? The key is asking a series of probing questions. Thoroughly investigating their skills, operational processes, and tools is the first step in determining the level of confidence you should have in their current and future services.

Benefits

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After asking a number of managed service providers the tough “confidence-building” questions, site owners chose AT&T. Together, AT&T and the managers of nabiscoworld.com and candystand.com focused on improving site reliability and scalability, as well as increasing brand-image protection and application integrity. The goal was to maximize Web site performance through burstable bandwidth across the network, systems, and applications.

By diligently stepping through the seven functional areas needed to build an end-to-end e-Business solution (noted in this paper), AT&T provided nabiscoworld.com and candystand.com with concrete benefits. Bandwidth utilization was expanded by nearly 70 percent, to over 100Mbps. The optimized scalability not only enhanced the experiences of the sites' 3 million monthly visitors,

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This paper addresses the key issues you face and identifies the key questions you must ask—as you seek to design and deploy operational systems deserving of your confidence and your trust. At the end, not only will you have a better understanding of what types of questions to ask a managed service provider, but you'll also better understand some of the answers to expect, using AT&T as a model.

Confidence-Building Questions You Need to Ask

Before selecting an application and infrastructure performance solution and a managed service provider to implement it, you need to be absolutely clear about your own priorities, short- and long-term goals, and business process requirements. Only then can you benchmark your prospective solution and determine your unique business needs. Then you should ask a managed service provider and its customer references some very specific questions.

In the following sections, we outline the most important questions to ask potential providers. We begin with basic questions, then identify questions by the seven functional areas/categories needed to build an end-to-end e-Business solution that meets the challenges companies face today:

The key to developing trust is asking a series of probing questions of a managed service provider.

The Starting Point: The Basics

- What experience do you have in e-Infrastructure and application management?
- Do you have the resources to deliver scalable solutions within the timeframes I need?
- Can you give me customer references?
- What kind of connection do you have to the Web?
- What networking connections do you use—T-1, T-3?
- Do you offer fully managed, co-location, and enterprise hosting services?
- What kinds of help desk services do you offer?
- Lastly, ask yourself how confident you are with the company's long term viability.

These basic questions are designed to enhance your trust by getting to the core of a managed service provider's fundamental capabilities, their level of experience and expertise. All other things being equal, you will benefit most from a provider with demonstrated real-world experience with fiber optic-based network solutions and planning, designing, and implementing high-speed IP networks. You will find an assortment of companies, from

established corporations such as AT&T to start-ups, eager for your business. Your job is assessing their basic qualifications in delivering an end-to-end e-Business solution.

Hosting Data Center Evaluation

- How many data centers do you have and where are they located?
- What are the capabilities of your facilities?
- What steps have you taken to harden your facility against physical damage?
- How is your facility prepared to handle disasters and/or disruptions?
- Is your data center equipped with redundant air conditioning, temperature control, and power?
- Are adequate facilities available for physical expansion, if it becomes necessary?
- How physically secure is your facility? What security techniques do you use?

This is the stage at which you need to assess the trust and confidence you have in the capabilities and capacities of a managed service provider's facilities and its ability to house, protect, and support the hardware and software that drives, controls, and monitors your applications and infrastructure. Seek a managed service provider with a global network of robust, secure data centers with redundant security features, fault-protected power supplies, and environmental controls to enhance reliability and ensure consistent support of mission-critical applications. AT&T has this type of setup with a worldwide network of state-of-the-art Internet Data Centers located across three continents—North America, Europe and Asia. All the data centers are built with a fully redundant core infrastructure, multiple layers of security, and reliability sustained by 24x7x365 support.

Presently there are 18 AT&T Internet Data Centers on three continents, providing businesses with over 1.5 million square feet of Web hosting space. The Internet Data Centers connect to AT&T's coast-to-coast OC-192 IP backbone and its IP-enabled, high-speed private data networks. This allows customers to seamlessly connect their public Web sites with their back-office operations.

The point of this example, using AT&T as a model, is that you shouldn't take any of the physical factors for granted. Find out exactly where your site or sites will be hosted and managed. Develop a clear definition of the provider's data centers' size, scope, and robustness. With the proliferation of hosting and managed service providers, you must be

Benefits

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who generate 2.2 million page views per day, but also eliminated the need to provision T-3 services, resulting in significant cost savings.

Total annual savings are now projected to reach a half a million dollars. By switching to an end-to-end outsourced infrastructure, designed to meet specific performance needs, managers are able to reapply these savings to other aspects of their Web solution.

But the benefits didn't end there. As the IT managers worked with AT&T to implement new Service Level Agreements, they discovered an unexpected benefit. The establishment and utilization of a common, easy-to-understand set of metrics improved communication throughout the business, and helped provide a better framework for understanding the sites' performance, goals, and future expectations.²

certain that your Web site servers will not be housed in a light industrial complex with borderline or inadequate protection against physical damage. Beware of sites where HVAC systems are over-stressed or under-engineered, or where the physical plant is not secure from potential damage when a natural disaster strikes.

Pre-Operational Planning and Consulting

- What processes do you normally utilize for migrating clients to a new environment and can these processes be adapted to my specific needs?
- What is your timeline?
- What type of project management skills are available? Do you provide dedicated personnel to manage and lead the implementation process?
- What transition/migration services do you offer?
- How do you manage end-to-end integration evaluation across the network, systems, and applications?
- What provisions do you make for unexpected services in connection with transition/migration from internal to external management?

Before establishing the SLA metrics, you need to learn all you can about the working groups that will implement your transition.

The answers to these questions will reveal how the managed service provider identifies your needs and determines what must be done to assure a seamless fit between your two organizations. This stage is characterized by a great deal of preparatory assessment, consulting, and implementation planning. Once you and your provider are “over the hump” of preparatory work and transition/migration and moving on to the actual implementation, you’ll have ongoing opportunities to address performance through vehicles such as SLAs.

In the midst of the pre-operational planning and consulting phase, and before establishing the SLA metrics, you need to learn all you can about the working groups that will implement your transition. AT&T, for example, will assign its e-Business Professional Services team, specializing in Web integration planning and consulting, to discuss your business and technical needs. They will analyze your current infrastructure across your network, operational systems, and applications to recommend the optimal solution to meet your performance requirements. This work sets the stage for the next phase of a managed services program.

e-Infrastructure Assessment, Engineering, and Integration

- What measures have you taken to ensure 24x7x365 reliability and security?
- How do you handle dynamic and automated content updates of files, databases, etc.?
- How long does it take for you to deploy content changes across Web servers that you support?
- How long does it take for you to deploy content changes across multiple servers?
- Do you have the capability to build-out infrastructure, or will you have to subcontract it?
- How many tiers of redundancy are built into your infrastructure?

A fault-tolerant, distributed, proactive, predictive IP network infrastructure will utilize a vast array of hardware and software—in the largest systems many thousands of managed objects including servers, routers, and hubs. This is precisely why it is critical for you to examine the expertise and flexibility of a managed service provider when it comes to designing and engineering your infrastructure. Other than insufficient bandwidth, the most common cause of poor Web site performance is problems with configuration of hardware and software. In addition, ongoing monitoring and reporting on applications is vital, as we'll discuss further.

Scalability isn't only an important criterion when it comes to bandwidth; it is also significant when it comes to infrastructure. In the event of an emergency, for example, you want a provider who is flexible and responsive to your infrastructure problems. Redundant architecture is key here. Select a provider with multiple data centers featuring a mirrored, geographically dispersed system of operations centers. The "gold standard," system-wide, is continuous mirroring, backup, recovery, and archiving of a company's critical data. This infrastructure design approach will enable dynamic data replication and storage, data sharing, application testing, and high availability of data in the event of a disruption to normal business operations. Building in such redundancy is costly, though, so few service providers have adequate levels.

Providers most likely to offer you adequate levels of redundancy are those that can do so as a natural extension of their core competencies because they leverage the economies of scale. AT&T, for example, has invested over \$200 million in its Global Enterprise Management System (GEMS). This integrated technology platform provides a correlated view of a client's applications, servers and networks and provides ongoing

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e-Infrastructure monitoring and report management. GEMS enables AT&T to proactively predict how a failure in one area—a server for example—would affect the performance of the client's network, applications, and other servers, and to take immediate action. GEMS is a technological innovation from AT&T Labs—the first version was developed over five years ago to manage the world's most sophisticated global voice, data, and IP networks.

Multiple tiers of redundancy speak directly to a potential partner's engineering rigor and ability to help you ensure a quality experience for your users.

Application Architecture Design and Migration

It's critical for your service provider to get the application architecture right.

- What server configurations and support hardware do you intend to utilize to host and manage my site?
- How can you ensure that the infrastructure used to support my application is configured appropriately to meet the demands of my Web site traffic and usage?
- If my applications have special requirements, can you meet them?
- Can your existing firewalls handle the demands of a heavily trafficked e-Business site?
- Can you stress test applications as part of your implementation process?
- What are some of the typical application service level dimensions that you use?
- Are all components of your network and data center fully redundant, or do single points of failure remain?
- If so, what are the cost and management implications?
- Can higher performance standards be negotiated if necessary?
- What types of legacy systems connectivity do you support?

It's critical for your service provider to get the application architecture right. You must ask the questions necessary to be able to trust that your needs will be accurately assessed and that an appropriate infrastructure will be managed for reliable performance. This is a prime reason that AT & T utilizes modeling and network simulation techniques to analyze and stress test applications prior to uploading. This approach evaluates the impact of applications on e-Business and networking infrastructures ahead of time, so improvements can be made proactively rather than reactively. AT&T Professional Services' team designs flexible, scalable, configuration solutions and then determines the hardware, software, and services needed to

meet performance and end-user requirements. In addition, AT&T's management platform is "open" and can operate with many different types of networking systems and applications tools (both hardware and software), enabling integration of legacy systems. This is the sort of flexible, customizable application architecture you should seek.

e-Infrastructure Management and Operational Support

- What is the structure of your network?
- Are you yourself a network provider?
- If not, who supplies your network connections and backbone?
- How many providers do you utilize?
- What plans do you have in place for change and capacity management?
- Can you provide the maximum burstable bandwidth I require for my peak loads?

This line of questioning is as much about your architecture and network needs as it is about the managed service providers that you are seeking—so it is critical to evaluate the answers in the context of your e-Business mission. Some companies will, for example, only approach "self-contained" service providers that have their own IP backbone and network, on the premise that they offer the utmost flexibility when it comes to delivering large amounts of new bandwidth on short notice. Others see an acceptable risk/benefit to partnering with hosting services that supply bandwidth from diverse third-party sources. If you ultimately choose the latter approach, take even greater care in establishing accountability through SLAs and other means, because when there are more than two parties involved, you can easily find yourself in the middle of the "finger-pointing," or "blame" game.

AT&T is a managed service provider, owning and operating what has been described as the world's most reliable and scalable data and IP network with the greatest levels of private and public peering options. By creating a fully managed e-Business environment built on network and Internet data centers, AT&T leverages proven processes for fault, capacity, application, and change management to deliver precisely what clients require. Confidence in these proven processes, networking professionals, and operational management expertise is enhanced by comprehensive reporting tools, portal access, and business transaction SLAs.

Evaluate the answers to questions about your architecture and network needs in the context of your e-Business mission.

Application Performance Monitoring and Reporting

- How are application and e-Infrastructure performance measured, monitored, and reported?
- Can you monitor applications one at a time and measure the results against performance expectations?
- What is your capability for advanced detection of performance degradation?
- Do you offer a Web portal for client monitoring of applications and e-Infrastructure?
- What platforms, operating systems and software providers do your capabilities span?
- Do you have the capability to build policies into your system to manage a client's performance parameters?
- Do you have the ability to give priority treatment to targeted applications depending upon client policies?
- What correlation capabilities do you have across all monitored elements (network, systems, and applications)?
- What configuration options do your clients have within the physical and logical elements of their application environment?
- What is the bandwidth utilization of your Web sites?
- What reporting capabilities exist to measure the business transaction performance?

When selecting a trusted managed service provider, one of your prime tests should be the comprehensiveness of the provider's monitoring and management tools.

When selecting a trusted managed service provider, one of your prime tests should be the comprehensiveness of the provider's monitoring and management tools. It is important that the management platform and tools be arrayed and viewable across all elements of the network, computing infrastructure, and applications. The tools serve three purposes: first, to monitor performance so that alarms can be sounded; second, to detect performance degradation prior to an outage or service disruption; and third, to report on compliance with SLAs.

That's why a wealth of application and e-Infrastructure performance monitoring and reporting tools should be available on the platform you select. These range from industry-standard monitoring methodologies to customized knowledge modules and synthetic transaction technologies. They run in the background continuously, testing the system,

observing, and reporting across the network, operating systems, applications and Web site servers. Reports generated from a sophisticated distributed proactive and predictive network and systems testing/management platform that extends to the applications level can tell clients how well an application is performing against requirements. Reports, for example, might reveal whether or not transaction response times meet expectations. Or, they might show that Web site performance, measured by actual user experience, is at the desired level. This kind of in-depth, targeted performance-based information adds real value by increasing your ability to gauge and understand the effectiveness of your business application.

AT&T, for example, captures, consolidates, integrates, correlates, and reports e-Business infrastructure information across applications, systems, and networks. This information provides an end-to-end, real-time view of the end user experience. Working with the client, AT&T also designs management policies that support the enterprise's business requirements and enables the management of those requirements on a real-time basis. These correlated management capabilities permit AT&T to provide predictable performance in a transaction environment and deliver optimal end-user experience.

Proactive and predictive monitoring enables clients to benefit from advanced root-cause fault analysis and to correlate events across a client's entire configuration—the network hardware, the servers, the network elements and the applications. Enhanced performance management provides client's performance metrics to the system and proactively gives priority to those applications depending upon the client's defined business policies. If you select a partner offering this kind of service via a Web portal, you will be able to monitor applications and infrastructure at any time.

As mentioned earlier, the key to getting optimal results from these tools is to be clear about what processes and goals are most important, so you and your partner can focus on monitoring the appropriate parameters.

Service Level Agreements

- What is your standard for bandwidth availability?
- How do you work with clients to establish SLAs?
- Can we see an example of a SLA you have created?

Proactive and predictive monitoring enables clients to benefit from advanced root-cause fault analysis and to correlate events across a client's entire configuration.

- How open are you to customizing your SLA to my specific requirements?
- What is your standard for business transactions?
- What is your standard for network availability?
- What is your standard for URL availability?
- What is your standard for “time to cure?”
- What is your standard for “time to respond?”
- What other metrics do you usually use in your SLAs?
- Are your SLAs written in easily understandable language?
- How are your metrics reported?
- Do your SLAs address network, application, and system availability?

No evidence builds trust more effectively than those metrics you and your partner build into SLAs.

SLAs are a direct way to assure that the managed service provider you select can be held accountable to the performance levels you require. No evidence builds trust more effectively than those metrics you and your partner build into SLAs. While the specifics of the metrics will vary considerably depending on the nature of the site and the business needs and processes involved, the metrics themselves must always be clearly stated and easily measured.

If your provider utilizes a distributed proactive and predictive network and systems testing/management platform that extends to the applications level, results of testing and analysis can be applied directly to the development of SLAs tailored precisely to your needs. This is the approach utilized by AT&T, for example. The managed service program is tuned to the client’s business performance requirements, to provide standardized and customized SLAs and performance level commitments stated in simple language.

The SLAs cover such issues as business transaction availability and response times, server and application availability, network availability, and resolution management.

The goal, once again, is optimization of Return on Investment (ROI) and the ensured continuity of e-Business initiatives.

Summary

Today, managed service providers offer what AT&T refers to as “next generation” outsourcing—solutions that are more highly comprehensive in their scope, better integrated, and more business-centric than ever before. The evolution has become a necessity as corporations demand consistently superior performance in an enterprise environment where online image, promotion, and facilitation of business transactions play an ever-increasing role in bringing products/services and customers together in the marketplace.

How do you make what is seemingly intangible—trust—into something that is concrete, measurable, and open to appraisal? How, in other words, do you build the confidence that your potential partner can be trusted and will continue to earn your business?

The answer: test the potential provider's knowledge, experience, and expertise. Ask all of the critical and tough questions. Then evaluate the answers in the light of your business needs. Competent, reliable, confidence-building providers will not be reluctant to provide you with the answers you need. In fact, they should also offer you the questions—as AT&T has done here.

Ask the questions and you'll mitigate the risks. In the process, you will also find that the benefits you derive from outsourcing will enhance your sense of trust by making what risks remain worth taking. By working with a provider like AT&T that is committed to the enhancement of application performance, scalable bandwidth utilization, superior Web site availability, cost-effectiveness, and overall process reliability, you can develop a solid and enduring e-Business relationship built on trust.

Informed decision-making is the surest road to confidence and success. In this document, we've offered a systematic approach—a Trust Test—designed to gain that knowledge.

The questions and answers will help you define the precise e-Business solution you require and identify the right managed service provider/business partner you can trust to deliver that solution.

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In fact, they should also
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¹ nabiscoworld.com and candystand.com are Web sites of Kraft Foods North America, Inc.

² For more information, see “AT&T e-Business Solutions” case study.

