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VIRTUAL ON-SITE SUPPORT

A NEW APPROACH TO OVERCOMING SUPPORT TRANSACTION INEFFICIENCIES

SSPA TECHNOLOGY PROFILE:

GOTOASSIST FROM CITRIX ONLINE

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VIRTUAL ON-SITE SUPPORT

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BY THOMAS SWEENY

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SSPA Technology Profile

Service technology is a fundamental enabler of support industry innovations. The efficient exchange of knowledge, the intelligent routing of calls and the rapid adoption of electronic support have all been made possible by technology. SSPA Technology Profiles are published periodically to highlight products and applications of service technology to offer insight into the next potential innovation in service delivery.

In this Technology Profile SSPA Research examines GoToAssist from Citrix Online – a suite of tools designed to enhance the ability of the support expert to assist customers by providing the means to interact through the use of screen sharing, real-time chat, electronic whiteboard, file transfer and Web page push. This tool set provides the means for a support expert to see and even control the environment in which the customer's problem has occurred.

When used in the proper context this type of technology changes the fundamental customer – support expert dialog by making it possible for the support representative to see what is happening during the diagnosis and resolution stages of solving a customer issue. In the event that a problem cannot be resolved at first contact, the cases can be escalated with a comprehensive transcript of the initial diagnostic session.

SSPA Research reviews how GoToAssist can provide the foundation to enhance the efficiency and effectiveness of the support transaction through the application of Virtual On-Site Support.

Advances in Service Technology

The support industry has always been early to adopt new technology as it searches for the best way to provide quality service while watching costs. The business of support relies on the efficient and effective transfer of knowledge from the product expert to the customer in need. Over the past several years a number of advances in service technology have enhanced the support industry's ability to deliver quality, cost-effective support; notable advances in service technology include:

- ❑ **Automatic Call Distributors (ACD)** to intelligently route customers to a queue to receive assistance from the appropriate individual or group of technical experts.

- ❑ **Knowledge Bases** to facilitate the storage, retrieval and exchange of accrued knowledge between product experts, support representatives and customers.

❑ **Call Tracking & Escalation** to enable the routing and tracking of phone-based and electronic incidents between individuals, support centers and other departments (i.e. sales, development, etc.).

❑ **Remote Monitoring & Diagnostics Tools** to provide the means to proactively monitor, diagnose and correct problems from remote locations.

Each of these types of technologies has contributed to the advancement of support efficiency and effectiveness. Each technology has addressed an important element of the support process, but few technologies have been targeted at enhancing the efficiency and effectiveness of the support transaction.

While the existence of support technologies to manage and control computers remotely is not new, the robustness of the technology and the communications infrastructure over which it runs have continued to evolve. The integration of remote control technologies with text chat, whiteboard, file transfer, Web page push and event logging offers a foundation upon which to offer a new suite of integrated support offerings. As important as the evolution of technology is the growing willingness of customers to embrace new service tools and adopt online support services.

This SSPA Technology profile looks at the promise of Virtual On-Site Support as a means to significantly impact the efficiency and effectiveness of the support transaction.

The Promise of Virtual On-Site Support

Imagine every time your customers had a problem they could pop their head over the cube wall and ask your experts for assistance. The expert could walk over to your customer's work area and interact directly with him to quickly diagnose and resolve the issue.

The entire process would rely on the expert seeing the problem firsthand in the context of the environment where the issue occurred. Your support expert could go to the customer's work area with all of the necessary diagnostic tools and techniques needed to quickly determine the problem and develop a resolution.

Although effective for problem diagnostics and resolution, it is not cost effective to put support experts on-site with all of your customers. The key is to get the benefit of on-site support without the costs. Enabling service technologies such as GoToAssist are available to provide these benefits through Virtual On-Site Support.

What Is Virtual On-Site Support

Virtual On-Site Support is a means to maximize support transaction efficiency by providing the support expert with a suite of tools that can allow him to chat online in real time with the customer; push Web pages and files to the customer; use an on-screen whiteboard; and remotely view a customer's computer and even share mouse and keyboard control. These tools enable support experts to perform hardware and software diagnostics; check and modify systems configurations; provide "just-in-time" training for the customer; and download and install new or updated software.

How Can Virtual On-Site Support Be Used

The integrated suite of tools that enable Virtual On-Site Support provides the foundation to provide comprehensive online support capabilities as well as a powerful complement to traditional phone and electronic support requests.

The ability for a support expert to see, diagnose and control a customer's computer remotely offers profound opportunities for the way support experts and customers interact. This real-time interaction provides a platform upon which a support organization can deliver personalized high-impact services. These personalized services can be as effective as if a support expert were on-site for a fraction of the cost. Some of the types of applications that are enabled through Virtual On-Site Support technologies include the following:

- ❑ Integrated Electronic Support

- ❑ "Eyes Open" Diagnostics

- ❑ High-Touch Support Transactions

Each of these applications of Virtual On-Site Support is described in more detail below.

Integrated Electronic Support

Ideally the resources provided online will meet the vast majority of customers' support needs and the support Web site will become a well-used and highly effective self-service resource for all customers. The depth and breadth of online resources continues to improve and customers are embracing the idea of self-service. Self-service support has limitations, however.

Not all customers can or will use self-service support offerings, and not all cases are conducive to this mode of support. The ability to integrate high-

touch interactive support with self-service resources provides the best solution for both the company and customer.

The chart below illustrates the opportunity to integrate Virtual On-Site Support into an integrated Web-based offering that promotes the use of self-service resources while providing a high-touch option for customers to receive interactive assistance from a support expert.

Figure 1: Integrated Electronic Support Case Flow
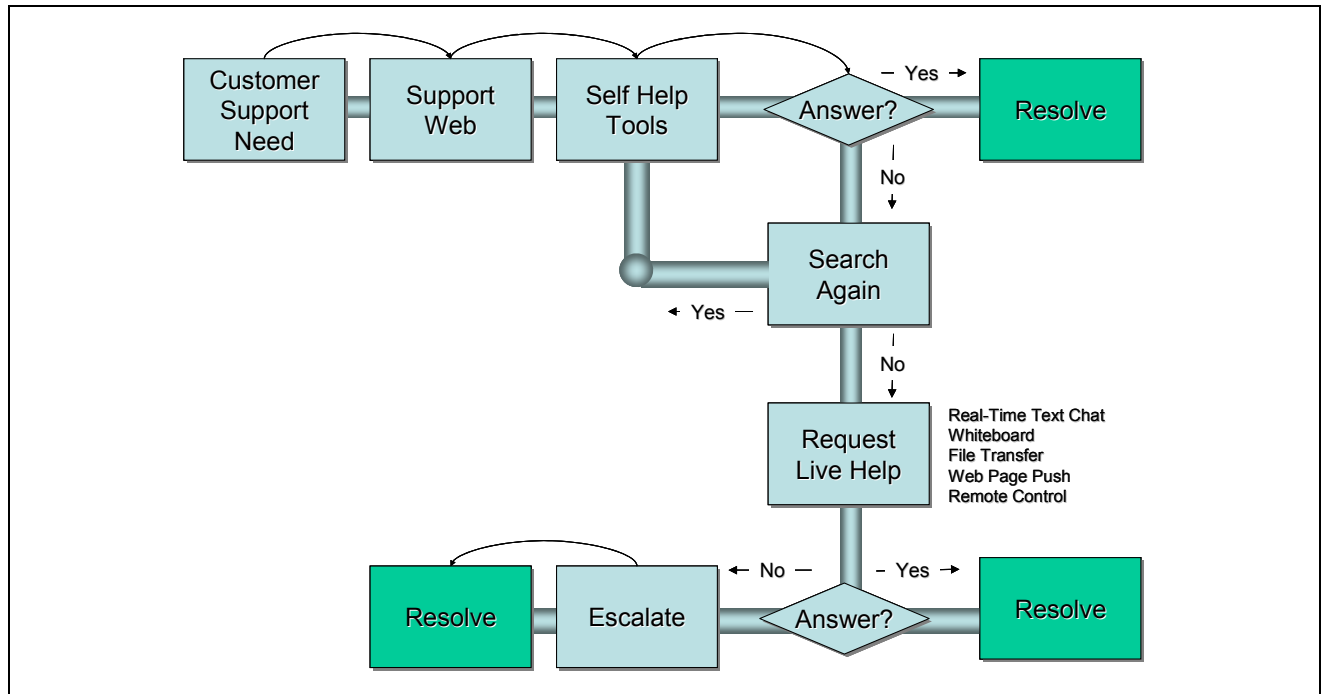
Source: SSPA 2003

If customers know that they can get the help they need from a support expert online, they will be encouraged to go online and possibly use self-help resources. The benefit to the company is realized by increasing overall customer exposure to self-help information in the context of requesting live help. This increased exposure results in the increased use of self-help resources and the potential increase in the percent of support transactions resolved without the direct involvement of a support expert.

"Eyes Open" Diagnostics

The basic interaction between the customer and the support expert is a dialogue intended to diagnose and resolve technical issues – often blindly. The use of a technology that allows a support expert to view or even control a customer's computer provides a new visual perspective on exactly what is happening during the diagnostics and resolution stages of the support transaction lifecycle.

The ability to "see" what is happening allows that support expert to rapidly assess the situation, take complete inventory of the context of the problem and quickly formulate a resolution or next course of action (i.e. escalation).

High-Touch Support Transactions

The traditional support transaction (phone or electronic) is a dialogue between a customer and a support expert. The means to visually interact enables the dialogue to be more productive. In 36 percent of support transactions customers are looking for assistance with the functionality of a product. Virtual On-Site Support can be used as a platform to deliver "just-in-time" training to help the customer learn how to use a product more effectively through remote control or whiteboard capabilities. Another 24 percent of support cases deal with installation and configuration. Virtual On-Site Support is ideal for helping customers get up and running by helping them install and configure new products. The ability to maximize the efficiency of the support transaction by enhancing the effectiveness of the support expert – customer dialogue provides the basis for high-touch, effective support transactions.

Opportunities to Apply Virtual On-Site Support

Virtual On-Site Support requires the involvement of a support expert to deliver the service, thus the cost of this type of transaction can be as high as an electronic or phone-based incident. The ideal application of Virtual On-Site Support is in situations where the efficiency and/or effectiveness of the support transaction can be increased.

The key is to identify, address and overcome the primary support challenges that arise during the support transaction lifecycle. Every support transaction is prone to some level of inefficiency depending upon the topic, the circumstances of the issue and the skill sets (technical, troubleshooting and communication) of both the support expert and customer.

The chart below presents a matrix of support transaction types using the following two characteristics on the axis:

- **Uniqueness of Support Issues** – This defines the repeatability of resolutions for typical customer issues.

    - **Common Issues** – The "low" end of the scale represents situations where a significant percent of customer issues are similar and there is a high repeatability of solutions.

    - **Unique Issues** – The "high" end of the scale represents situations where each support case is unique with a low repeatability of solutions.

❑ **Complexity of Supported Product and Environment** – This represents the overall complexity of determining the cause of a problem and developing a possible solution.

- **Lo Complexity** – The "left" side of the scale represents products and/or environments that have few factors that can impact the diagnosis and solution development to a customer issue.

- **Hi Complexity** – The "right" side of the scale represents complex environments that may have many factors that can affect the diagnosis and development of a solution to a customer issue.

Figure 2: Opportunities to Apply Virtual On-Site Support
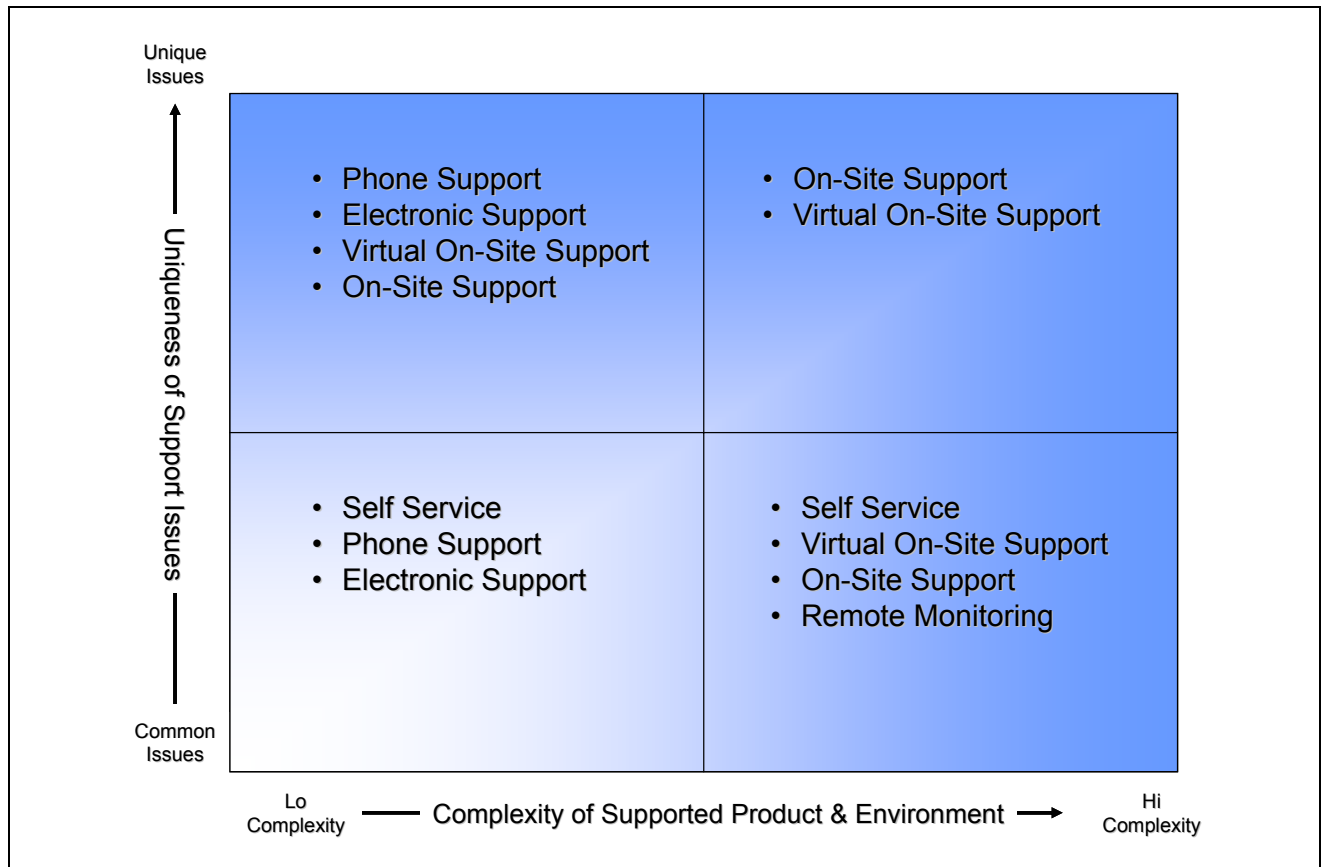
Source: SSPA 2003

As the repeatability of support problems increase the effectiveness of self-service applications is high. An investment in knowledge creation and online presentation is critical to making sure that the customer can find and apply the information he/she is looking for. As the array of problems reported by customers becomes more unique it is far more difficult to

provide documented solutions to address all of the issues customers are likely to raise.

Virtual On-site Support is highly effective when diagnosing unique issues. As the complexity of issues rise, the potential effectiveness of Virtual On-Site Support increases too. The ability for a support expert to see and even manage the customer's environment during the diagnostic stage of the support transaction increases the efficiency of the problem diagnosis. This can also aid in reducing the first-contact closure rate of cases as well as reduce the overall resolution time.

Regardless of the complexity or uniqueness of support problems, Virtual On-Site Support can be used effectively to address the most common challenges of support.

The Challenges of Support

Even with all of the advances in service technology and process improvement the support industry faces the continuing challenge of providing quality support in the face of the growing complexity and costs. Customers generally understand that as the complexity of technology increases problems are inevitable, yet when problems do occur, customers want their problems resolved quickly and completely and they want to interact with someone who can help them.

Support organizations in general have been responsive to customer needs for timeliness and quality of response. Technology and process improvements; enhanced Support – Development cooperation; training and certification efforts; and stepped-up satisfaction-monitoring initiatives are in part helping to address customer issues. The figure below illustrates the top complaints customers have with support.

Figure 3: Most Common Customer Complaints about Support

Complaint	% of Respondents
Time to Resolve Issue	71.0
Quality of Product	35.0
Lack of Resolution	31.0
Knowledge of the Service Rep	28.0
Time to Reach a Service Rep	25.0
Phone System Navigation	12.0
Company Policies	12.0
Cost of Service	11.0
Ease of Use of Support Web Site	8.0
Professionalism of the Support Rep	4.0
Availability of Online Resources	1.0
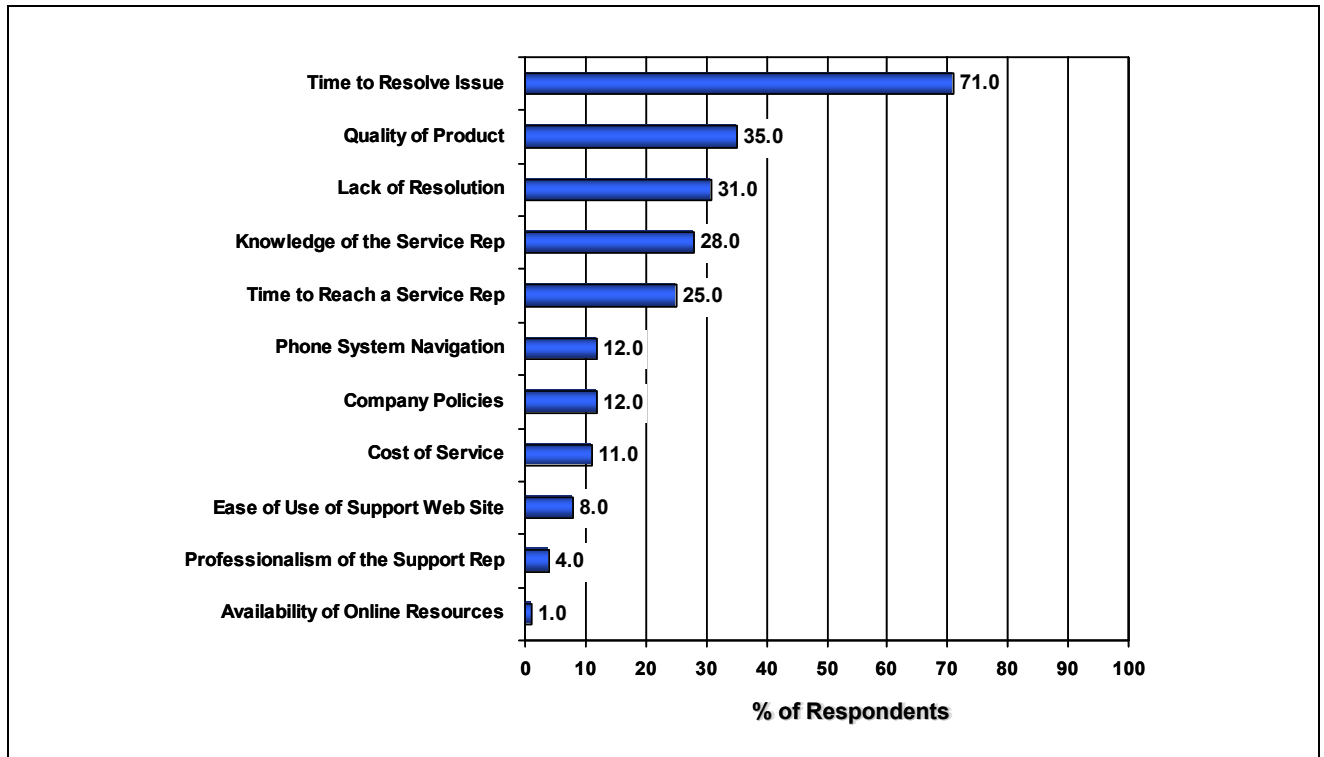
Source: SSPA 2003 - Multiple Responses Allowed

Problem resolution, timeliness of response and product quality continue to be among the top customer concerns. The goal of any service organization is to satisfy customers and provide efficient high quality service. To accomplish this objective the support industry must be able to increase the effectiveness of the interaction between the support experts and customers throughout the entire lifecycle of the support transaction.

The Lifecycle of a Support Transaction

The lifecycle of a support transaction is all about collecting the right information from a customer and then analyzing it to formulate an appropriate response. In some cases the entire process occurs within the first contact with the customer; in other circumstances a problem must be escalated to another tier or even to development for review and resolution.

Figure 4: Support Transaction Lifecycle
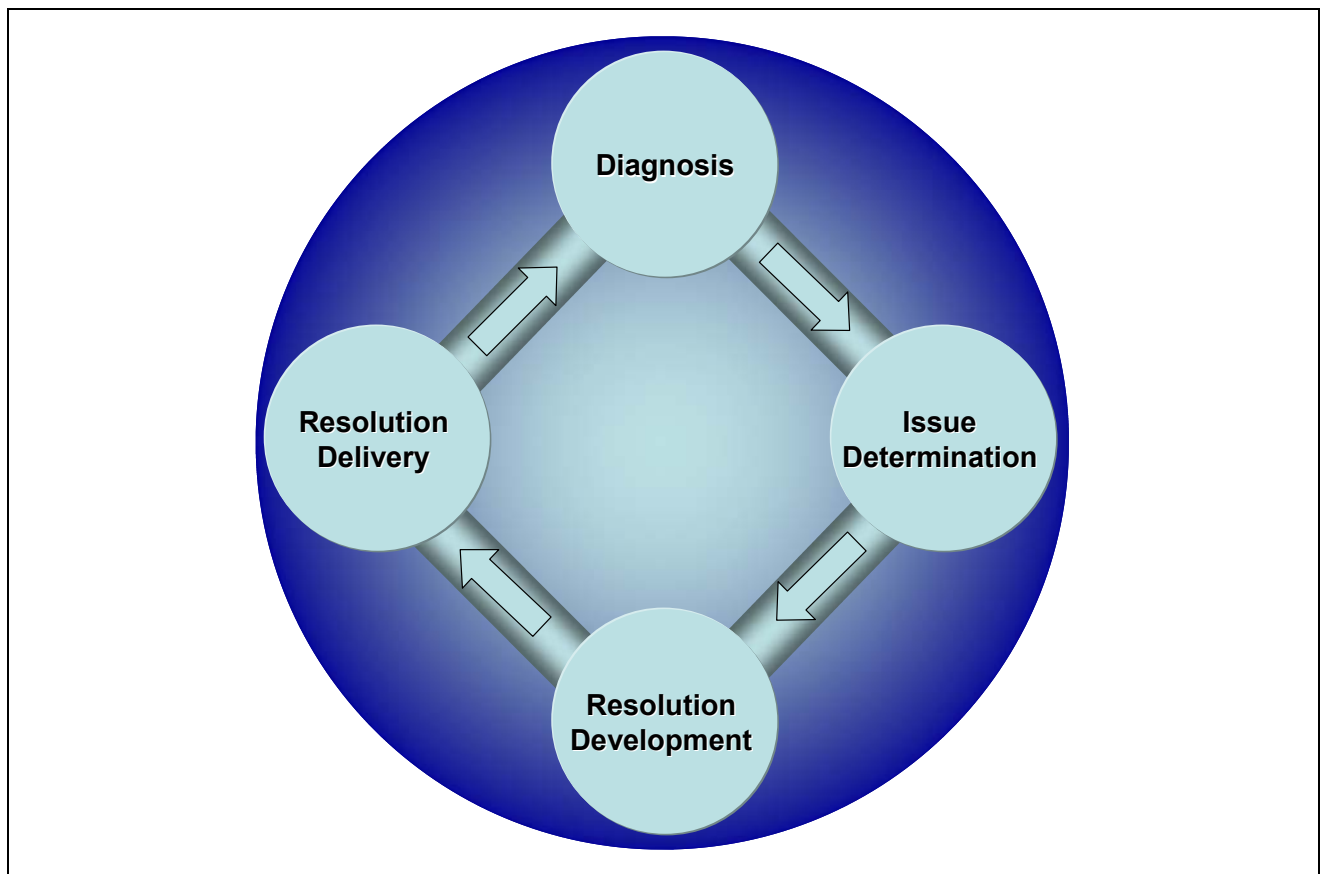
Source: SSPA 2003

Regardless of where or when the issue is resolved, the necessity for accurate information collection is essential for efficient diagnosis and resolution. The support transaction lifecycle consists of the following 4 stages:

❑ **Diagnosis** – During this stage the product expert works with the customer to understand the customer issue and the relevant circumstances under which the problem occurs.

❑ **Issue Determination** – Based on the information collected during the initial stage, an attempt is made to understand the root cause of an issue. In the event that the source of the issue cannot be determined during first customer contact, the issue determination will continue off-line and may include testing, escalation to higher level tiers or even product development.

❑ **Resolution Development** – Once the issue has been identified, a solution or workaround will be offered. A solution may be offered during first customer contact based on the support expert's own

knowledge, an article found in a knowledge base or a discussion with a peer. A resolution may also be developed off-line and offered in the form of a workaround or a patch from development.

Resolution Delivery – The final stage of the support transaction lifecycle is the delivery and installation of the solution as well as the tracking and recording of the support problem and solution.

Each stage listed above may occur during the initial customer contact or be spread over several days. As the duration of the lifecycle increases, the cost to resolve the case increases. For both the customer and the company there are significant benefits to a rapid support transaction lifecycle. For the customer, he receives a resolution to his issue quickly and can return to productive work. For the company, faster resolution rates result in lower transaction costs and often better satisfaction ratings.

The Support Transaction Lifecycle by the Numbers

The chart below provides a perspective on the allocation of support requests by the average time of the support transaction lifecycle. On average 54 percent of all transactions are closed during the first customer contact within an average 12-minute "talk time." An additional 13 percent of support request are closed within 1 day. If a case is not closed within one day, the average time to complete the support transaction lifecycle is 5 days. The majority of cases are closed within support; however, as many as 8 percent of cases are escalated to development for review and resolution.

Figure 5: Case Closure Rates and Duration
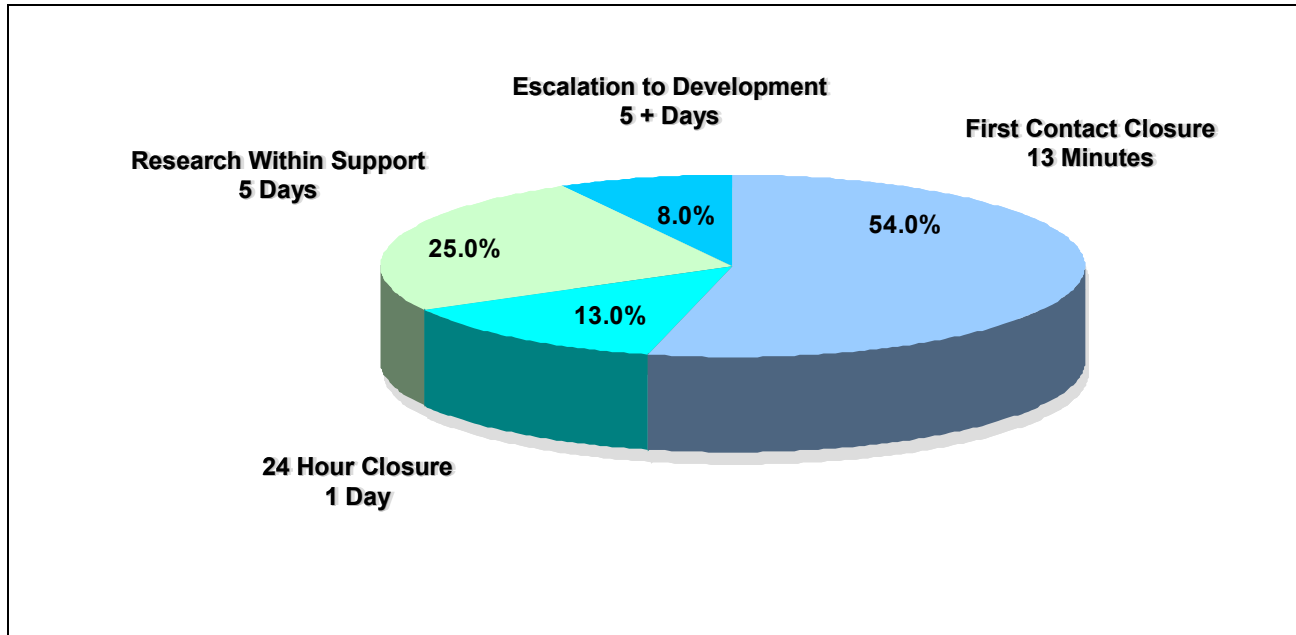
Source: SSPA 2003

Industry wide, 46 percent of all cases are not closed at first customer contact. As the complexity of the product being supported increases the first-contact closure rate drops to 40 percent. With each case that is not closed at first contact, the cost to the support organization grows considerably in terms of resources expended and customer dissatisfaction. A primary objective of service technology and process improvements must be focused on reducing the duration of the support transaction lifecycle.

The ultimate objective is to compress all four stages of the support transaction into the initial contact with the customer. Realistically cases will remain open after first contact and a portion of them will be escalated to higher level tiers and/or development. The ability to link each stage of the support transaction lifecycle regardless of who is working the cases is essential.

Support Transaction Inefficiencies

Support transactions most often occur by phone (59 percent) or electronic means (38.5 percent). Each support request has unique circumstances. While some requests are easy to diagnose and resolve, many require a dialogue between the support expert and the customer to define the problem and the context in which the problem occurs.

The majority of support transactions are done blindly where the support expert cannot see what the customer sees, and the support expert relies on

the customer to provide accurate information about the context of the reported problem.

Figure 6: Most Frequently Used Incident Submission Modes
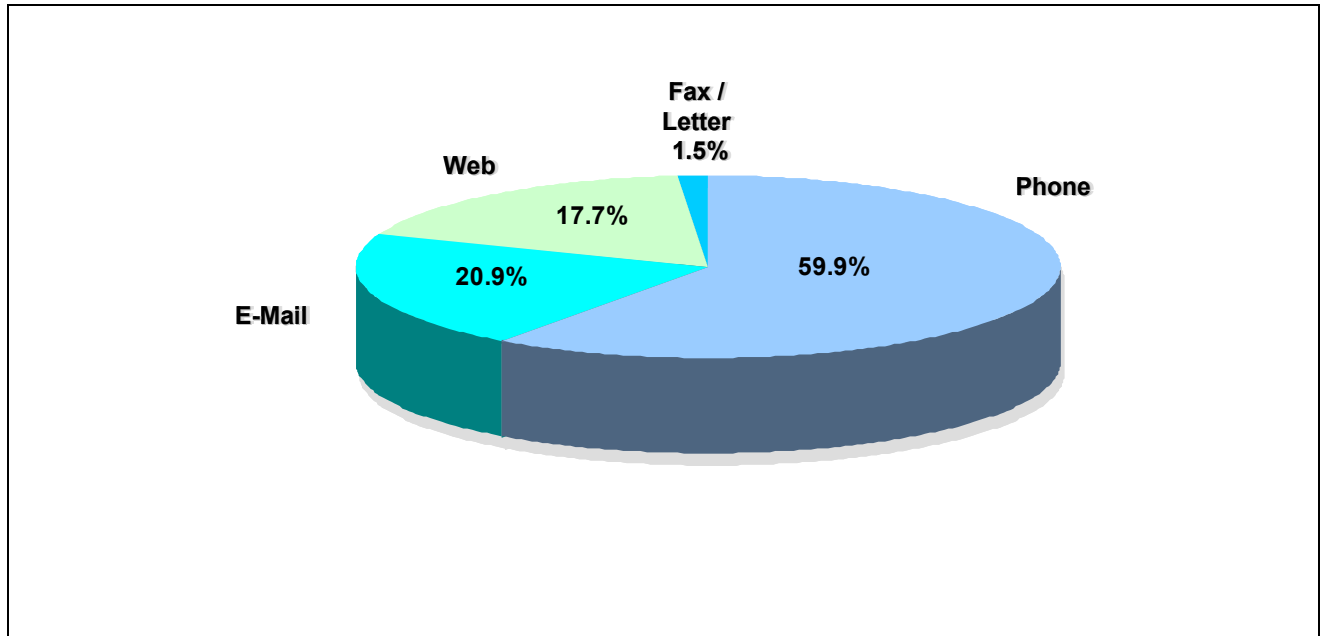
Source: SSPA 2003

Top Causes of Support Transaction Inefficiency

Each stage of the support transaction lifecycle is prone to inefficiency. Some of these inefficiencies can be addressed through process improvement, others with training or technology. The most important consideration in evaluating new training, technology or process improvements is to understand the inefficiencies or problem areas that exist and the potential impact from a proposed solution. The following section describes some common support transaction inefficiencies:

"Are You There Yet" Syndrome

During the initial conversation with a customer as much as 60 percent of the total transaction time can be spent guiding the customer through diagnostic procedures. The support interaction begins to sound like:

Support Rep:	*OK, now click on the following menu commands: Tools, Options, then click on the "File Locations" tab and tell me what it says next to user templates…*
Customer:	*OK…*
Support Rep:	*Are you there yet?*

Customer:	*Just a minute, File, Tools, what was that next menu option?*

This is a relatively simple example and perhaps a bit exaggerated; however, the interaction between the support expert and the customer has the potential to be highly inefficient. The success of this interaction is dependent upon the support expert's ability to blindly lead a customer through a diagnostic process. The potential inefficiency of the transaction is likely to grow if the steps to diagnose a problem are more complex or if the customer is a novice.

Incorrect Context

An efficient diagnostic process is predicated on the ability to have all of the necessary information about the context of a reported problem. Context may include the environment, the application or any number of variables that describe the circumstances in which a problem has occurred.

During the initial interaction with a customer, it is essential to collect as much information as necessary about the context of a situation. The support expert relies on the customer to communicate this context: Operating system, model number, application version, etc.

If the customer communicates incomplete or inaccurate information the issue-determination and resolution-development stages of the support transaction lifecycle will be based on the incorrect context. This may result in an inability to verify the problem or result in the development of a resolution that will not work.

Escalation Disconnects

The support transaction lifecycle takes place in an "off-line" mode 46 percent of the time. When issue determination and resolution development takes place in an off-line mode it is essential that the diagnosis stage is comprehensive.

All information about the reported problem, including the context of the problem, must become part of the case record to assure that other team members, including support experts at higher level tiers and development engineers, have sufficient information to complete the issue-determination and resolution-development processes.

When the case record is escalated new resources are assigned to work or review the case. The new individuals reviewing the case will rely on the information contained within the case record as a basis for identifying a solution. If the case record is incomplete additional research, including contact with the customer, may be required. Escalation of cases with

incomplete data can delay the overall support transaction lifecycle by several days.

Low Use / Low Impact Self-Help Resources

The top ten most commonly offered Web services are shown in the figure below, including: Product documentation (84.4 percent); answers to frequently asked questions (82.6 percent); searchable knowledge bases (77.1 percent); the ability to submit incidents electronically (77.1 percent); software updates and patches (72.5 percent); information about support programs, policies and contact information (71.6 percent); training course registration (65.1 percent); the ability to check or update incident status (58.7 percent); new software releases (44 percent); and the ability to participate in satisfaction surveys (33.9 percent).

Figure 7: Online Services Offered
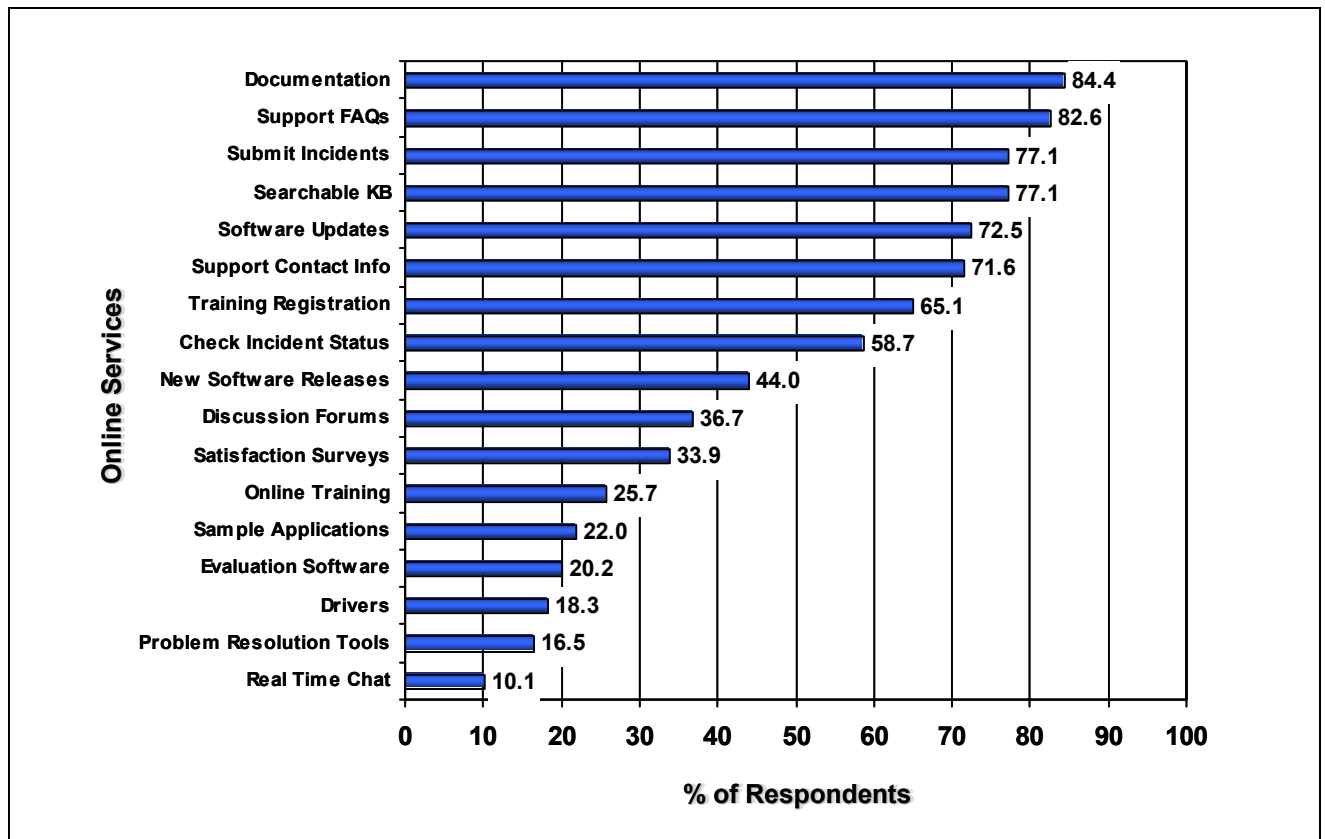
Source: SSPA 2003

The most commonly used online support resources are searchable knowledge bases, downloadable software updates and the electronic incident submission. Simply because an online service is offered does not mean that it is effective. For online services to be effective they must be used and must deliver an acceptable level of service to the customer.

Customer perceptions about their online support experience affect their decisions to use or reuse an online support resource. The phone continues to be the dominant medium for customers to request support; however, electronic support is gaining ground. Adoption of electronic services is based on customers' perceptions of how well online services can work for them.

When customers do not find a solution to their problems through knowledge bases and other self-help resources they begin to perceive that these resources are not or cannot be effective. When customers do not receive a response to an electronically submitted case for hours, they perceive that the phone will continue to provide a comparatively rapid response to their question.

The issues described above are largely due to resource allocations and support policies and processes and not necessarily deficiencies in the concept of electronic support or the underlying service technologies. The fact is that to realize the cost and efficiency benefits of electronic services, customers must use these online resources and perceive that they are getting a satisfactory level of service from them.

The Impact of Support Transaction Inefficiencies on Backlog

When the support transaction lifecycle extends beyond the initial customer contact the case becomes part of the daily backlog. At the end of each day, daily backlog is tallied by the number of new cases that came in that day but were not closed. A percentage of these cases will be worked and closed within 24 hours of receipt. The remaining cases must roll over to the next day for research and resolution. Depending upon available resources and complexity, some of these cases may remain open for multiple days or even weeks. Accumulation of open cases over a period of several days combined with daily backlog creates a cumulative backlog.

Cumulative Backlog

Support organizations have finite resources. These resources may be allocated to respond to new cases, work open cases, receive or deliver training, write technical notes, attend meetings and participate in other daily activities. If adequate resources are not allocated to manage and resolve open cases, cumulative backlog has the potential to overwhelm a support organization's ability to serve customers and to send support costs skyrocketing.

To illustrate the impact of a cumulative backlog, assume that a support center receives 500 new cases a day. Using industry average first-contact and 24-hour closure rates, there are 165 cases that remain open after 24 hours

from initial receipt. During the next day 500 new cases are reported. 335 cases are resolved within 24 hours of receipt and the process repeats itself with more cases being opened then closed each day.

Table 1: Cumulative **Backlog Scenario**

Case Activity	Cases
New cases per day (24-hour period)	500
Cases closed at first contact	275 (55%)
Cases open after first contact	225
Cases closed within 24 hours of receipt	335 (67%)
New cases open at end of 24 hours	165

Source: SSPA 2003

The rate by which the backlog accumulates is directly related to the number and complexity of open cases and the availability of resources. For the purposes of this example, we assume that there are 85 support representatives working the case load. Each day they spend approximately 50 percent of their time responding to new cases and 30 percent working backlog cases. This allocation of resources provides a total of 680 hours of time each day for support representatives to perform their daily tasks including respond to new cases ("phone time") and research and resolve open cases.

Table 2: The Effect of Cumulative Backlog

Daily Resources Allocation	Hours Needed	Hours Allocated	Surplus / (Deficit)
Hours to close cases at first contact	336	336	-
Additional hours to close cases within 24 hours	90	90	-
Hours to close remaining backlogged cases	330	136	(194)
Total	756	562	(194)

Source: SSPA 2003

There are a finite number of hours available after scheduled "phone time" and the time and effort allocated to research and resolve cases closed within 24 hours of receipt. In this scenario there are an additional 136 hours available to work open cases. Based on the assumption that it takes approximately 2 hours to research, resolve and respond to backlogged cases

another 68 cases could be closed with these additional resources. In order to close all cases generated during normal business operations an additional 194 resource hours will be required.

The figure below illustrates the snowball effect of cumulative backlog. When there are insufficient resources allocated to clear the daily backlog, cases begin to accumulate above and beyond those generated in the course of daily operations. In our example, at the end of each day, we accumulate 97 open cases.

Figure 8: Cumulative Backlog
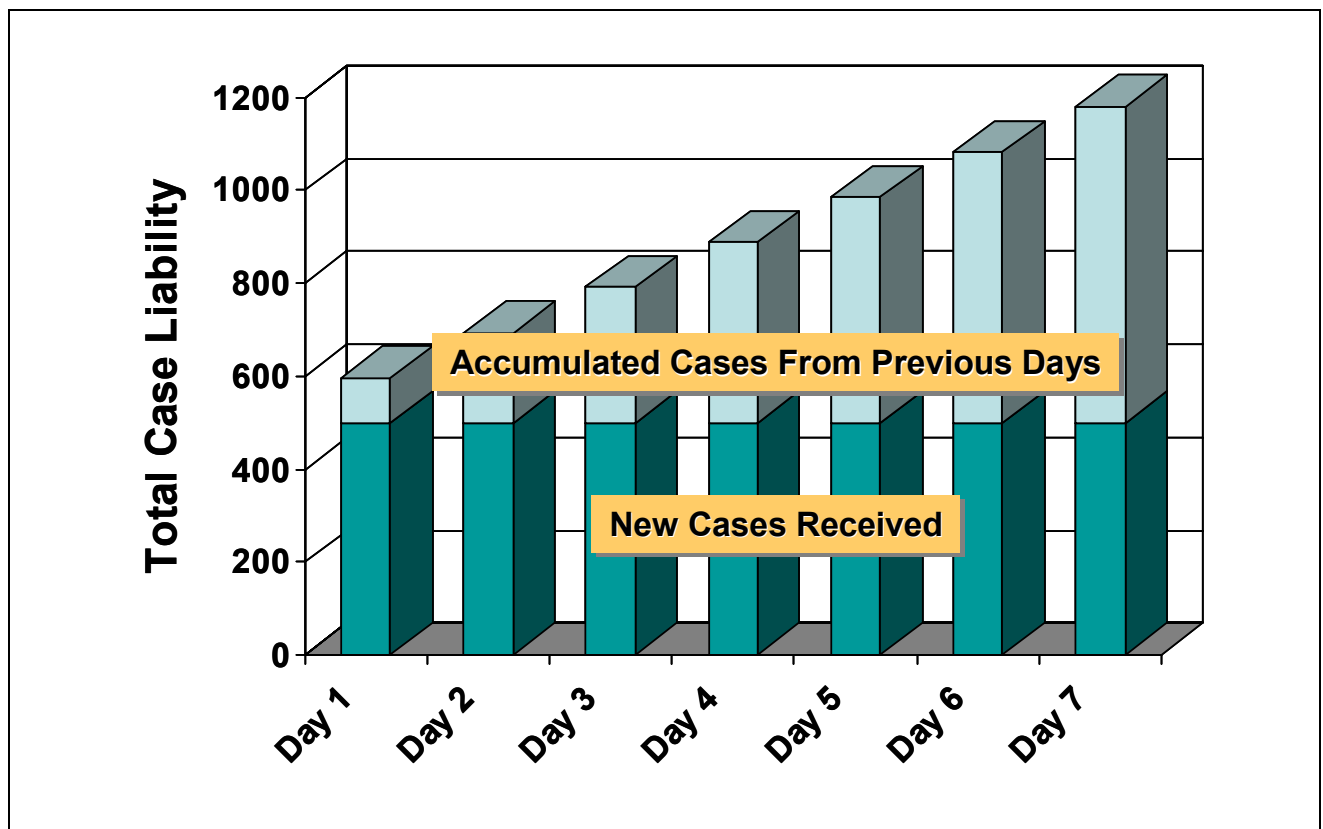
Source: SSPA 2003

In many cases even if the support resources were available, a number of cases could not be closed within this timeframe, and some percentage of cases will inevitably be carried into the next day.

Every opportunity to maximize first-contact resolution and to increase the efficiency of closing backlogged cases offers a significant potential savings to the support organization. The capabilities of Virtual On-Site Support are ideal for maximizing first-contact closure rates and for optimizing the time and effort required to close backlogged cases.

The topic of support backlog is examined in detail in the SSPA Research report titled *"Why Backlog May Be Costing You Millions and What you can Do About It – Metrics and Methodologies for Managing Backlog."*

A Look at GoToAssist

GoToAssist is a Web-based screen-sharing application that enables support experts to chat with customers and remotely view and control their computers. GoToAssist is a hosted Web-based product that can be integrated into existing support infrastructure. For the customer there is no requirement to install any software. GoToAssist offers the following features and functionality:

- **ScreenSharing** allows support experts to remotely view and control customer computers. The screen-sharing capability in GoToAssist is available in several configurations. You can allow support experts to gain full control of a customer's mouse and keyboard. Screen sharing can also be limited to remote viewing only. GoToAssist also offers a 2- way mode to allow the support expert to show his/her screen to the customer.

- **HelpAlert** provides the support expert with notification of new customer sessions and connection status. HelpAlert receives the customer's question and displays it on the support representative's desktop. The support representative responds to the customer's question and establishes a connection with the customer.

- **ChatLink** enables real-time chat between support experts and customers. ChatLink provides a Web chat interface to enable the real-time exchange of text messages between the support expert and the customers. Most GoToAssist sessions start with chat mode. If the diagnosis requires screen sharing, the screen-sharing session can be launched.

- **File Transfer** enables a support expert to transfer documents and applications during a support session.

- **Online Management Center** is the administrative, management and monitoring interface and includes reports and optional session recordings. The Management Center includes real-time metrics, chat session logs, snapshot reports and optional session recordings. The administrative features allow organizations to monitor representative performance and assess customer satisfaction.

- **Session Recording** provides a complete audit trail of the support transaction.

❑ **Whiteboard** allows support experts to illustrate and communicate in free-form format on the customer's screen enabling writing and highlighting capabilities.

❑ **Web Page Push** enables the support expert to send a Web page to a customer allowing support reps to provide available online support information and resources.

Enterprise Configurations

In addition to standard commercial solutions, GoToAssist offers enterprise solutions. Enterprise solutions are designed for larger organizations providing added functionality as well as enterprise licensing and pricing options. Enterprise solutions include the following configurations:

❑ **Queue Enterprise Solution** includes ScreenSharing, ChatLink and File Transfer capabilities. With this configuration GoToAssist functions like a phone queue enabling routing of the next session to the support expert who has been idle the longest.

❑ **Chat Enterprise Solution** includes chat, email, instant messaging and co-browsing capabilities. It provides a means to seamlessly escalate a support session to screen sharing.

❑ **Phone Enterprise Solution** is designed to supplement support calls with screen sharing.

How GoToAssist Works

Most GoToAssist customers implement the technology in one of two configurations: complete Web-based support or a supplement to existing phone-based support.

Integrated Electronic Services

In a Web-based GoToAssist environment, a customer submits a question in a *"SmartBox"* on the support Web site. The question appears in real time on the support expert's computer. The support expert accepts the question using the HelpAlert routing technology. GoToAssist then downloads to the customer's computer, and the support expert and customer connect and communicate in real time using the ChatLink.

During the chat session the support expert may remotely view the customer's screen and control the customer's mouse and keyboard. The support expert may also employ the Whiteboard, File Transfer and Web Page Push features.

Integrated Phone Services

GoToAssist can also be integrated into traditional support call centers to enhance the efficiency and effectiveness of phone-based support transactions. In this configuration the support expert has the option of using the GoToAssist ScreenSharing feature to provide real-time diagnostics and troubleshooting by viewing and controlling the customers computer. This requires that the customer download a small plug-in. Once installed the support expert can share and control the customer's screen, mouse and keyboard.

GoToAssist Architecture

GoToAssist is a hosted Web-based solution. As such there is no server installation, configuration or management. GoToAssist is designed to integrate with CRM and e-support products including Siebel Systems, Remedy Corporation and Motive Communications. Because GoToAssist is hosted the implementation often takes less than one week.

In most cases, organizations do not need to configure firewall connections to allow GoToAssist access. GoToAssist requires access only to outbound ports at both ends of a connection. From the customer's standpoint, this configuration allows access behind most home and business firewalls and Network Translation Devices (NAT).

The GoToAssist architecture consists of hosted Web servers, communication servers and a small plug-in that is automatically downloaded and installed on the customer's computer.

Figure 9: GoToAssist Architecture
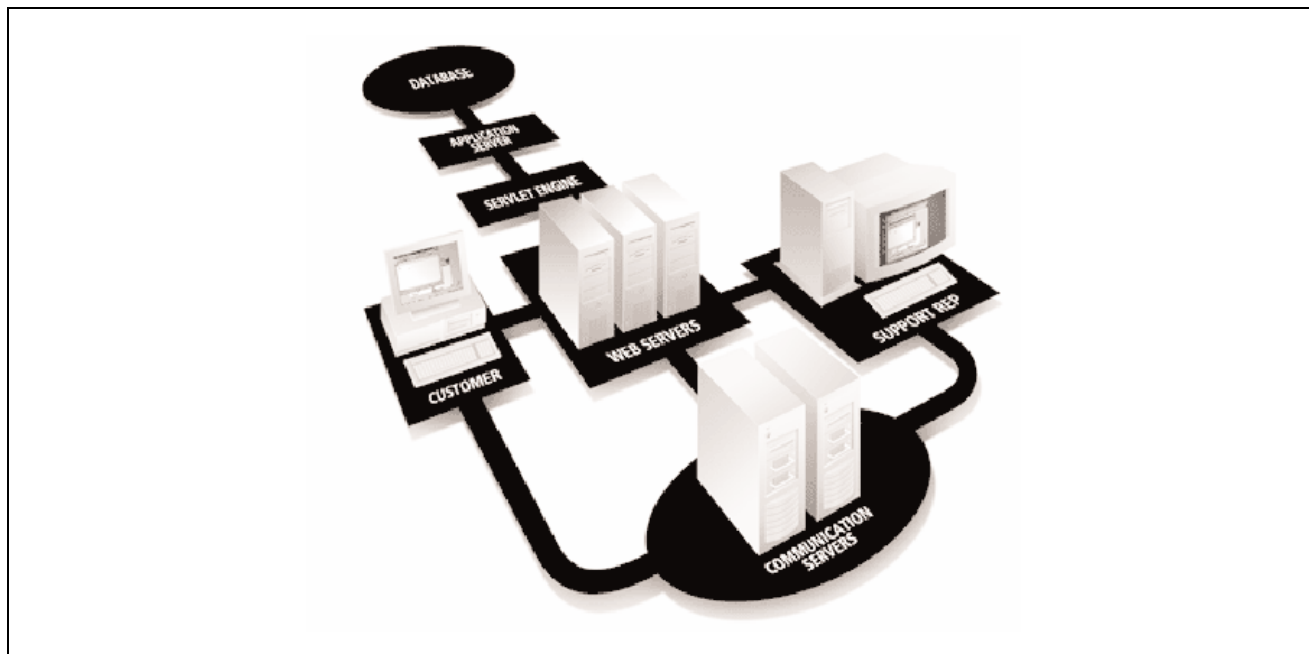
Source: Citrix Online

Web Servers

GoToAssist's service runs on a cluster of high-capacity UNIX Web servers. Web-balancing switches monitor the network flow to distribute server requests among all the servers to ensure maximum uptime and performance. The Web servers run a Java servlet engine to dynamically generate all Web pages. The Web servers' primary role is to initiate a connection between the user and the support rep. Once a connection is established, the entire interaction between both parties takes place over the communication servers.

Communication Servers

Communication servers maintain the customer – support expert transaction. Communications servers enable screen sharing by forwarding screen outputs and mouse and key inputs between the customer and the support expert's Viewer. The screen-sharing data is compressed using Citrix Online's proprietary compression technology and encrypted using Advanced Encryption Standard (AES) 128-bit encryption.

The communication server records the chat dialogue for future reference by the support expert. The chat dialogue can be saved at any point during a chat session or at the session's end. The optional SessionView module is used to review the screen-sharing session.

GoToAssist Pricing

GoToAssist pricing is based on a concurrent usage model and the total number of seats is based on the maximum number of support experts that will be using it at one time. The pricing is based on a monthly per-seat license fee and each seat has a one-time implementation fee. The one-time implementation fee covers account setup, routing setup and training. There are no per-customer or per-session fees and no limit to the number of support sessions you can conduct.

Table 3: GoToAssist Pricing

Per Seat	Price (USD)
Monthly Fee per Seat	$285
One-Time Implementation Fee per Seat	$650

Source: Citrix Online

There are other pricing options available depending on volume and type of organization such as enterprise, non-profit or academic use. Several add-on components are available such as Session Recording, Premium Branding and Premium Support.

Maximizing Support Transaction Efficiency with Virtual On-Site Support

Support transaction efficiency is achieved when the complete support transaction lifecycle is successfully competed in the fastest possible time, with the fewest possible resources. Successful completion requires that the customer initiating the support request has received and acknowledged a satisfactory response.

Minimize the Support Transaction Lifecycle

The single largest factor in the cost of support is the support staff and salaries. The basic economics of support dictates that the more time and effort spent to resolve a case, the greater the cost per case. Reducing the time it takes to resolve a case will reduce the cost per case.

Each stage in the support transaction lifecycle is built upon the successful completion of the previous stage. The first step in the cycle, Diagnosis, is the foundation for determining the solution. By applying tools such as text chat and remote control support experts can quickly get to the root of the problem. Once a problem is identified remote control, file transfer, whiteboard and Web page push are effective for applying a solution.

In the event that a problem cannot be resolved at first contact the diagnostic efforts from the initial customer contact, including configuration settings, product information and environmental settings can be collected within the session log. The session log can become part of the case record and will be highly effective for helping other experts at other support tiers or in development review the circumstances of the problem and develop a possible workaround or solution.

By shaving a few minutes off each support call, or reducing the effort it takes to resolve a case in the backlog it is possible to save significant amounts of time, effort and money. Based on the industry benchmarks and assumptions in the table below a reduction of talk time for phone-based cases saves $13.75 per call. When the effort expended on backlogged cases can be reduced by 20 percent there is an opportunity to save as much as $16.40 per case.

In the table below the potential savings from increasing first-contact closure rates is provided.

Table 4: Potential Savings from Minimizing the Support Transaction Lifecycle

Transaction Metrics	Units
Total Cases per Month	7,558 cases
First-Contact Closure - 54%	4,081 cases
24-Hour Closure - 67%	983 cases
24-Hour Plus Closure - 33%	2,494 cases
Transaction Cost per Case	
Closed at First Contact	$ 55
Closed with 24 Hours	$ 65
Closed 24 Hours Plus	$ 82
Effort Expended on Case Resolution	
First Contact	12 minutes
24 Hour	2.0 hours
Cases Not Closed within a Day	5.0 hours
Targeted Improvement in Effort Expended	
First Contact - 25%	9 minutes
24 Hour - 25%	1.5 hours
Cases Not Closed within a Day - 20%	4.0 hours
Potential Monthly Savings	
First Contact	$ 56,118
24 Hour	$ 15,966
Cases Not Closed within a Day	$ 40,903
Total Annual Savings	**$ 1,355,859**

These projected savings are based on the industry averages and assumptions noted in the above table. The actual impact of Virtual On-Site Support technologies will be dependent upon the type of products being supported and the way in which this technology is applied.

Maximize First-Contact Closure Rates

Most support organizations actively monitor their cost per call and cost per electronic incident. Understanding the total cost to resolve a case is an equally important metric. If cost per incident (phone or electronic) is based on the cost of the representative's time (salary and benefits) plus support overhead, then the cost per backlogged case will be the initial cost of the call plus added time and effort to research and resolve the case. On average a backlogged case will cost 2 to 5 times or more than a comparable case closed at first contact.

Virtual On-Site Support can be a powerful tool to help maximize first-contact closure rates by providing the support expert with a set of tools to effectively diagnose a problem and help a customer apply a resolution. In the table below the potential savings from increasing first-contact closure rates is provided.

There are on average 7,558 cases per month for the average support organization. The industry-average first-contact closure rate is 54 percent. 67 percent of cases are closed within 24 hours and the remainder is closed on average after about 5 days. The cost to close a case on first contact is $55; $65 for cases closed within 24 hours and $82 for cases closed after 24 hours. As the complexity of the product being supported increases the first-contact closure rate drops and the cost per case rises.

If we assume that the capabilities of Virtual On-Site Support will improve first-contact closure to 68% (26 percent improvement); 24-hour closure to 78% and the percentage of cases open longer than 24 hours to 23% we experience a net savings over $272,000 per year.

Table 5: Potential Savings from Increased First-Contact Closure Rates

Transaction Metrics	Units
Total Cases per Month	7,558 cases
First-Contact Closure - 54%	4,081 cases
24-Hour Closure - 67%	983 cases
24-Hour Plus Closure - 33%	2,494 cases
Transaction Cost per Case	
Closed at First Contact	$ 55
Closed with 24 Hours	$ 65

Closed 24 Hours Plus	$ 82
Targeted Closure Rates	
First-Contact Closure - 68%	5,139 cases
24-Hour Closure - 78%	756 cases
24-Hour Plus Closure - 23%	1,738 cases
Improvement in Case Closures	
24-Hour to First-Contact Closure	227 cases
24-Hour Plus to First-Contact Closure	756 cases
Potential Monthly Savings	
24-Hour to First-Contact Closure - $10	$ 2,267
24-Hour Plus to First-Contact Closure - $27	$ 20,406
Total Annual Savings	**$272,088**

Source: SSPA 2003

These projected savings are based on the industry averages and assumptions noted in the above table. The actual impact of Virtual On-Site Support technologies will be dependent upon the type of products being supported and the way in which this technology is applied.

Increase Initial and Ongoing Electronic Support Usage

The ability to integrate interactive and Virtual On-Site Support capabilities into new or existing electronic offerings provides the technological foundation to provide an array of electronic services ranging from automated self-help services to high-touch personalized support.

By effectively integrating self-help resources with real-time interactive support capabilities such as text chat, whiteboard, file transfer, Web page push and remote control capabilities it is possible to offer a level of service to satisfy the majority of customers through online services.

Extending the capabilities and effectiveness of online services through an integrated electronic services approach will drive more customers to adopt online services as the preferred "gateway" for all customer-support needs. In the table below the potential savings from increased use of online support and self-help resources is provided.

There are on average 7,558 cases per month for the average support organization. Larger organizations have more per month while smaller support organizations have fewer monthly transactions. The allocation of transactions is 60 percent phone based, 38.5 percent electronic and 1.5 percent by other means. For the purposes of calculating potential savings from generating more use of electronic support and online self-service

resources this table only includes cases closed on first contact. First-contact closure rates for phone and electronic incidents are 55 percent and 54 percent and cost $55 and $27.9 respectively.

Providing a more robust integrated suite of online offerings will increase online and self-help resource usage. For the purposes of this model we assume 10 percent of electronic cases will shift to use self-services resulting in a $23.8 per-case savings. Further, 10 percent of phone cases will shift to self-service cases resulting in a $43 per-case savings and 10 percent of phone cases will shift to electronic cases resulting in a $19.2 per-case savings. The result based on these industry benchmarks and assumptions is an annual savings of over $168,000.

Table 6: Potential Savings from Increased Online and Self-Service Use

Transaction Metrics	Units
Total Cases per Month	7,558 cases
Electronic - 38.5%	2,910 cases
Phone - 60%	4,535 cases
Other - 1.5%	113 cases
Cases Closed on First Contact	
Electronic - 54%	1,571 cases
Phone - 55%	2,494 cases
Transaction Cost per Case Closed at First Contact	
Electronic - $27.9	$ 43,839
Phone - $55	$ 137,178
Potential Increase in Online Transactions - 10%	
Phone to Electronic	249 cases
Potential Increase in Self-Service - 10%	
Electronic to Self-Service	157 cases
Phone to Self-Service	249 cases
Successful Self-Service Transactions - 64%	
Electronic	101 cases
Phone	160 cases
Potential Monthly Savings	
Electronic to Self-Service - $23.8	$ 2,383
Phone to Self-Service - $43	$ 6,864
Phone to Electronic - $19.2	$ 4,789
Total Annual Savings	**$ 168,240**

Source: SSPA 2003 – Note: Based on SSPA Research the industry average success rate for a self-help resource is 64 percent.

These projected savings are based on the industry averages and assumptions noted in the above table. The actual impact of Virtual On-Site Support technologies will be dependent upon the type of products being supported and the way in which this technology is applied.

Conclusion: New Technology, New Issues, New Opportunities

No matter how you do the math if you can reduce the time and effort to resolve cases you can save money. The assumptions provided in the previous section suggest ways in which the technologies that enable Virtual On-Site Support can fundamentally impact support costs by enhancing the value of lower costs support offers (self-help and electronic support) as well as enhancing the efficiency of the support transaction lifecycle.

With the adoption of new technology come the challenges of customer acceptance, security and confidentiality, and the entire issue of integrating new capabilities into the portfolio of existing offerings.

For the potential benefits from Virtual On-Site Support applications to be realized security and confidentiality issues must be addressed with the customer. It is possible that some situations are insurmountable; however, the majority of issues and initial reactions to this form of support can be overcome.

There is no such thing as a silver bullet to fix all the challenges and inefficiencies of support; however, a well-thought-out application of technology combined with the right processes will help an organization to achieve optimal utilization of resources to deliver quality cost-effective support. Virtual On-Site Support provides an innovative approach to overcoming support transaction inefficiencies as well as a foundation for building a powerful suite of phone, self-help and electronic support offerings for customers.