Corporate Travel
Technology Trends and Market Analysis
April 2002 Update

Travel Tech Consulting, Inc.
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"Demystifying Emerging Technologies for the Travel Industry"

Corporate Travel: Technology Trends and Market Analysis
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Disclaimer

This study was compiled over a period of several months from interviews, questionnaires, and demonstrations of corporate travel technology products as well as comments from customers and travel agent distributors. Because technology is constantly evolving, the information herein may contain errors or omissions. Every attempt was made to provide accurate information about suppliers. The companies profiled neither officially endorse nor necessarily agree with this study. The opinions stated herein are those of the author and therefore represent his view of the current market condition and trends and his product analysis. The questionnaires used in this study were completed by vendors over a period of several months and therefore may not reflect current information.

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About the Author

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Norman L. Rose is a 20-year travel industry veteran with an extensive background in both the corporate and leisure travel markets. For seven years he held a variety of sales management positions at United Airlines on both the East and West Coasts. From 1989 to 1995 Norm was corporate travel manager for Sun Microsystems. At Sun he worked with a number of third-party developers to create client-server software for the business travel market. This software included early prototypes of self-booking tools and expense management systems.

In September 1995 Norm founded Travel Tech Consulting, Inc., and the Web site TravelTechnology.com. Travel Tech Consulting specializes in developing strategic and product-marketing strategies for travel and technology companies. TravelTechnology.com provides insight on and analysis of major software products in the corporate and leisure travel markets as well as emerging technologies affecting the industry. Norm's business management background includes experience in business process reengineering, marketing, sales, travel management, purchasing, and project and technology management

From 1992 to 1994 Norm held the office of president of the Silicon Valley Business Travel Association. He served on the National Business Travel Association's Automation Committee and Chapter Presidents' Council and participated in meetings on travel technology on a national and international level.

A frequent guest speaker at a variety of travel conferences, Norm has spoken at PhoCusWright Travel Technology Conference 2002, Live 1999 Travel Technology World 1998, 1999, and '2000 the 2000 NBTA Convention, and *Travel Weekly*'s Conference Technology 2000. He has been a guest faculty member at the Cornell University School of Hotel Administration, where he instructed classes in the Certified Corporate Travel Executive program.

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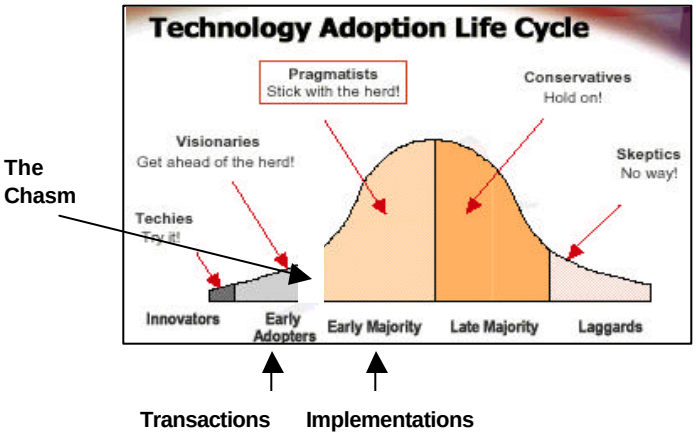
Executive Summary

Introduction

During the last eight months the U.S. travel industry has undergone a period of unprecedented change. The economic downturn combined with the September 11 terrorist attacks has accelerated the restructuring that began in the mid-1990s. On March 14 the airlines permanently changed the distribution landscape by eliminating all base commissions for travel agents. At the same time the underlying technology that provides the backbone for travel commerce is on the cusp of a major shift to a new open computing environment.

Corporate Self-Booking Technology

The recently published PhoCusWright report *Online Corporate Travel 2001–2003* states that overall U.S. corporate adoption of self-booking technology is at 9.5 percent. [1] Taken at face value, this low percentage might cause many to believe that these tools still have not "crossed the chasm" into the mainstream market.[2]



This statistic may actually be a bit deceiving, as adoption is measured as a percentage of total corporate travel transactions, while the number of corporate installations of self-booking technology is actually much higher.

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[1] PhoCusWright Corporate Travel Online, http://www.phocuswright.com
[2] Geoffrey Moore, *Crossing the Chasm* http://www.chasmgroup.com

Given the large number of corporations that have had some experience with self-reservation technology, the market may actually be positioned on both sides of the chasm within the technology adoption life cycle.

This paradox represents a significant weakness in current self-booking applications. First-generation products simply mimic the inputs used by travel agents for the last 20 years. As a result, many corporate travelers still feel that the telephone is a more efficient means to book travel.

This low adoption will likely change over the next 12 to 18 months because of three driving factors. The economics of the commission cut will produce more mandates for adoption, reflecting the lower fees associated with self-booking. The tools are improving, with newer streamlined interfaces that are more user-centric. Finally, the integration of Web-only and/or direct connection inventory into the self-booking products will provide end users more confidence that they are truly getting the lowest fare.

Corporate Online Travel Management: More Than Self-Booking

The corporate online market is expanding beyond a simple focus on automating the travel reservation process. Self-booking vendors, travel management firms, and even suppliers are all focused on developing new platforms to manage travel information with the goal of creating a lower-cost distribution environment and managing the relationship with the customer. This *April 2002 Update* includes a review of all the major self-booking vendors as well as a focus on all emerging technologies impacting the management of travel.

The Growth of Online Travel

The Internet has provided a new channel for suppliers to market directly to consumers and has seen the emergence of new online mega–travel agencies. In the mid-1990s Microsoft Corporation and Sabre both saw a unique opportunity. These companies understood the importance of the Web and recognized that there was no single offline travel agency brand dominating the leisure

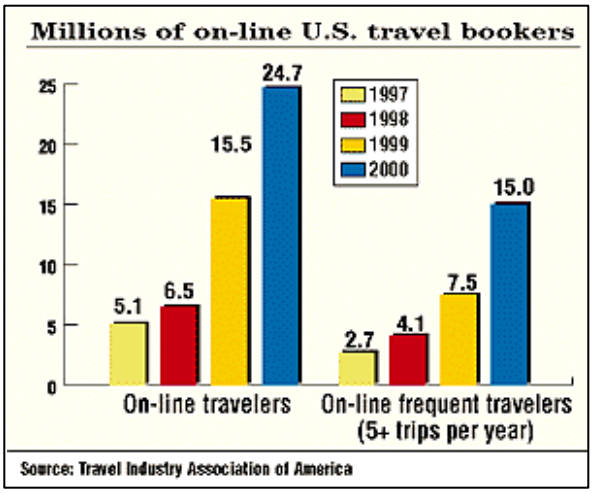
travel business. The two companies created two new brands and tapped into this emerging market segment. Expedia and Travelocity have grown to be the two largest travel agencies in the United States.

The Impact on the Corporate Travel Market

The travel industry has long embraced a philosophy of market segmentation that divides the industry into four distinct categories: managed corporate travel, loosely managed (semi-managed) business travel, small business travel, and leisure travel. The belief that corporate travel exists in a separate world not impacted by the other categories has been completely shattered with the growth of the online consumer travel market. Who are these leisure customers visiting Expedia, Travelocity, and Orbitz? Don't they have jobs? Of course they do, and their behavior as consumers is having a radical impact on the traditional managed and semi-managed corporate environment.

General Online Trends 2001

- Twenty-one million Americans "usually" buy their travel online, up 75 percent from 2000.
- Nearly 27 million Americans have now bought travel online at least once, up from 21 million last year.



- Online travel buyers now represent 13 percent of the population.
- Ninety percent of online travel buyers say that low price was a "major factor" in choosing a site from which to buy travel.
- Half of those who visited travel Web sites (i.e., looked online) then bought offline.
- Ninety-one percent of online travelers have "looked" at travel Web sites, up from 84 percent in 2000.
- Thirty percent of respondents said that the Internet has actually influenced their decision to buy—that is, they bought a travel product *after* they learned about it online. Of those people, one-third bought that product online all the time, one-third offline all the time, and one-third bought it sometimes online and sometimes offline. [3,]

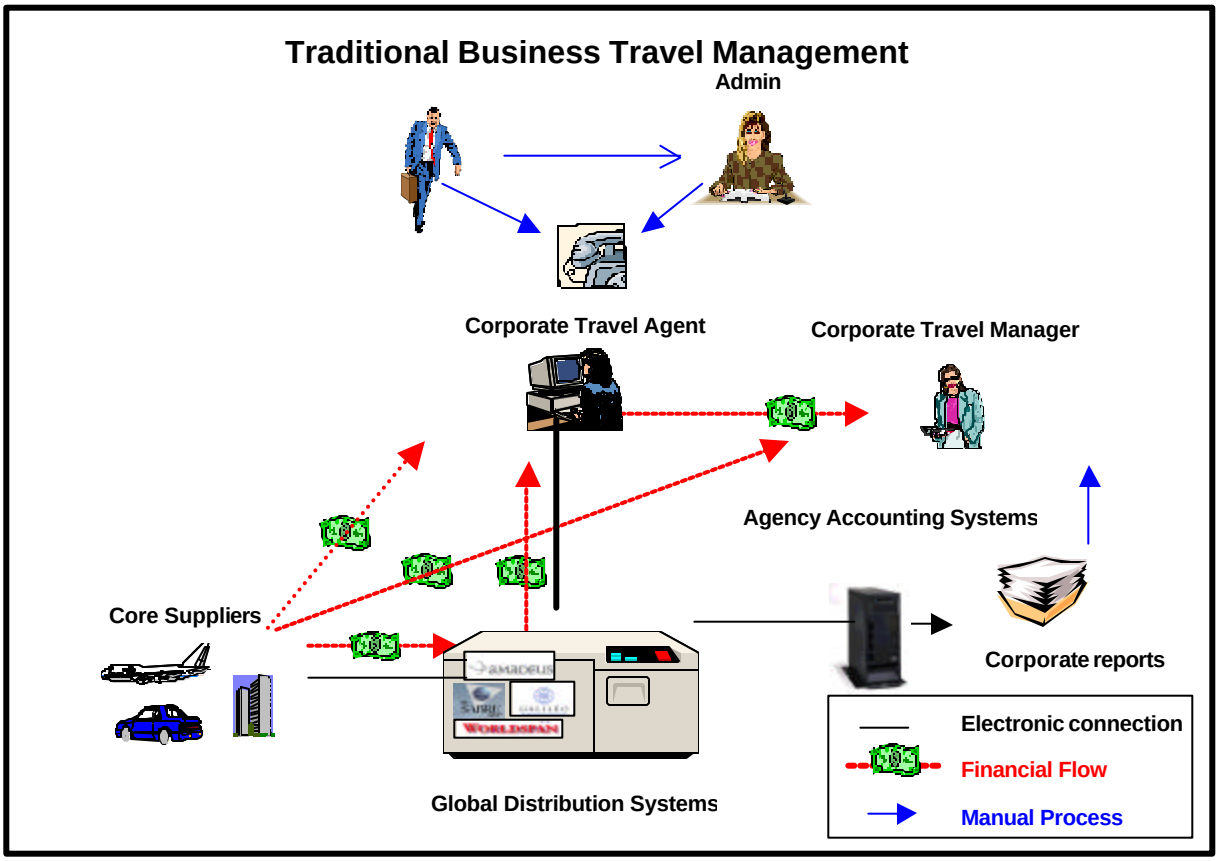
The Changing Distribution Environment

Airlines introduced Web-only pricing early in the development of the Web. These fares were often e-mailed to subscribers as last-minute weekend specials. For the first few years Web-only pricing played a limited role in overall distribution. A defining moment in airline pricing came in the spring of 2001 with the launch of Orbitz, the airline-owned online agency. For the first time a single Web site contained Web-only fares from multiple airlines. Orbitz uses a sophisticated fare-searching technology that generates the lowest fares on multiple carriers simultaneously. For the first time a traveler no longer needed to shop multiple airline sites to evaluate Web-only fares but instead could go to a single source that compared Web-only pricing from most of the major carriers. Since September 11, 2001, the number and variety of Web-only fares have increased as the airlines search for new ways to boost traffic. Orbitz has quickly grown to become the third largest

[3] Results from the fourth annual PhoCusWright Travel Consumer Trends Survey, November 8, 2001.

online travel agency. Orbitz uses ITA Software (see page for fare processing. ITA Software is a server-based software that does not use the traditional global distribution faring system.

The Internet has accelerated the restructuring of the travel industry as the traditional distribution system and underlying technology react to new, lower-cost open computing platforms. The traditional closed proprietary system depended heavily on travel agents for distribution of leisure and business travel.



- All travel information resided in global distribution systems (GDSs). Sabre, Galileo, Amadeus, and Worldspan were originally owned by U.S. airlines. Many of the airlines divested themselves of ownership of the GDSs in the late 1990s.
- Travel agents were the chief information source for travel bookings.

- Airlines paid standard and bonus (override) commissions to travel agents.
- GDSs passed on segment fees paid by suppliers to their preferred travel agents. Most larger agencies contracts contained productivity contracts with the GDSs that essentially provides them with free automation.
- Travel agents often provided rebates to corporations or used a shared profit and loss statement incorporating a management or transaction fee charge and passing on all standard and override commissions (when possible) to the corporation.
- Suppliers provided discounts to corporate customers.

The Impact of Web Distribution

The Internet has allowed suppliers to develop an enhanced direct consumer channel. The traditional closed; proprietary system depended heavily on travel agents for distribution of leisure and business travel. The Internet represents a significant reduction in distribution costs for all travel suppliers. Airlines in particular have embraced the Internet as a new lower-cost more direct form of distribution. Web-only fares were initially introduced to provide an outlet for distressed inventory for last-minute travel. The number and variety of Web-only fares continue to grow as the airlines search for new ways to boost traffic. The impact has been significant. In a recent survey conducted by the National Business Travel Association, "99 percent of respondents reported that their employees have been able to find cheaper fares through Orbitz than their negotiated corporate rates." [4]This is dramatically different from the results of the organization's June 2000 survey, where only 46 percent reported finding cheaper fares online. The NBTA

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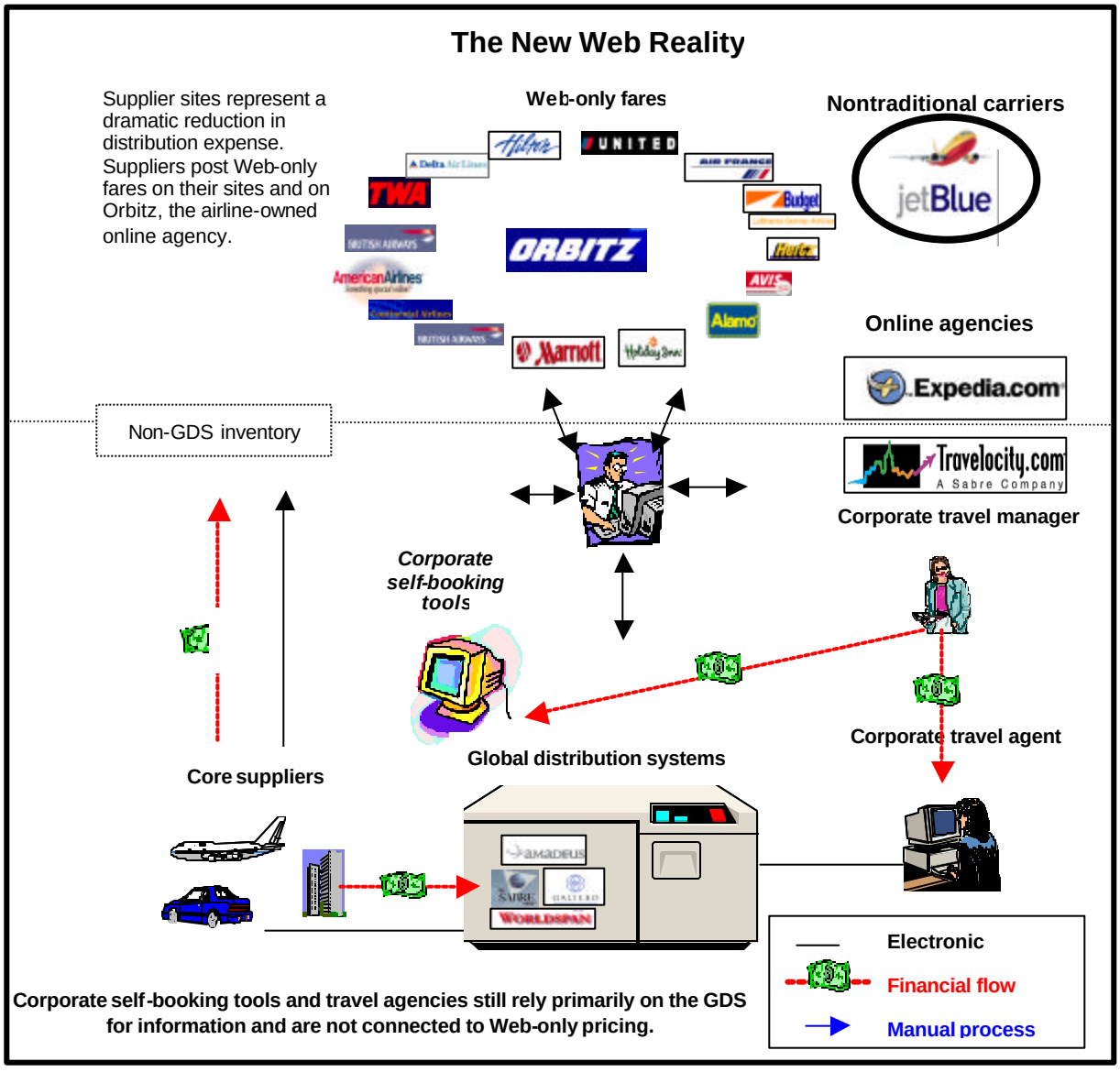
4 NBTA press release, November 15, 2001, www.nbta.org/info/pressreleases_11_15b.htm

announcement went on to state “for a company with a $600 million air spend, this could equate to savings between $30 million and 90 million.”



Suppliers' Attitudes Regarding the GDSs

With the advent of Internet technologies and the divestiture of the GDSs by the major airlines, suppliers have become less satisfied with the GDSs' ability to distribute their products effectively. In October 2001, Forrester Research published a study that clarified the serious threat to the GDSs' traditional role in travel distribution. When asked in the Forrester survey "Are the GDSs adequately designed for your business needs?" 65 percent of all suppliers answered no. Airlines were the most vocal on this point, with 80 percent stating that the GDSs did not meet their business needs. [5]

Two factors are driving this dissatisfaction with the GDSs. As pressure on the GDSs mounts, it is likely that the first issue will be mitigated as they lower their segment fee charges. The second point is not easily corrected. Suppliers have spent millions creating elaborate, brand-rich Web sites. The poor merchandising capabilities of the traditional GDSs pale in comparison with those of the new Web-based user environments. The traditional GDS environment does not provide the tools to allow suppliers to differentiate their products.

Competing technologies have also emerged to provide travel suppliers alternatives to elements of the traditional GDS environment, including the following:

- PC-server-based fare-quoting software (ITA Software)
- Travel-agency-wide area networks and offline profiles (American Express, Carlson Wagonlit, Maritz, and TRX's Trinity)
- Robotic search engines that check Web inventory (FareQuest, FareChase, and Quixo)

Each of these efforts attacks a weakness in the current GDS-based distribution environment.

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[5] Henry Harteveldt, *Travel: Direct Connect Isn't Enough* Forrester Research, 2001.

It is my belief that the migration to what Forrester called an integrated direct connection environment will be gradual. The evolution of the GDSs has already begun, as many have moved portions of their processing off of the mainframe environment. Three examples of this are Galileo's faring engine that runs on a Unix machine, Worldspan's adoption of the Expedia faring engine, and Sabre's project to move faring onto the Compaq Himalayan platform. As technologies such as Extensible Markup Language (XML) and Web services (see page 31) become more widely implemented by travel suppliers and the GDSs, the current legacy-based environment will change dramatically. This represents both a revolution and an evolution, as the new move to open standards represents a dramatic shift in the basic fabric of the underlying computing driving the industry but is at the same time driven by the existing players.

Web-Only Fares and Rates

The most important issue regarding Web-only fares is not one of technology but one of business practice. Suppliers currently restrict where Web-only fares can be sold. Most Web-only fares are published through the Airline Tariff Publishing Corporation (ATPCO). Generally only the designated airline site and Orbitz are permitted to view and ticket these fares.

Web-Only Fares and the GDSs

The challenge of Web-only fares and the GDSs involves a combination of business relationships and technology limitations. Simply put, the airlines are consciously avoiding the GDS fee with Web-only fares and thus prohibit the GDSs from displaying these rates on their networks. The other factor involves the way ATPCO fares are loaded into the GDSs. Many of the rules associated with all fares are loaded manually into the GDSs. This creates a lag between publishing and availability, which further presents a challenge to the GDSs. Web-only fares are released quickly and often apply to a short period of time. The manual nature of the ATPCO fare load prevents the GDSs from loading all the necessary information needed to price Web-only

fares even if they were permitted to do so. All four of the major GDSs have initiatives under way to correct this inefficiency, and some solutions have already been implemented.

The Target Market for Web-Only Fares

Web-only fares are used to distribute distressed inventory, and thus their release and abundance depend heavily on market conditions. For example, Web-only pricing has increased since the September 11 terrorist attacks. A further factor in the growth of Web-only pricing is the "quadruple net" aspect of these fares. Suppliers do not have to pay commissions, overrides, performance incentives, or GDS segment fees on Web-only fares. Thus, the use of these rates has become an important tool for airlines to reduce their distribution costs.

Leisure consumers are the primary users of Web-only pricing. Suppliers use the rates to drive more traffic to their Web sites or to Orbitz, as both are lower-distribution channels. Once the consumer is at the Web site, the supplier can better merchandise its product and its brand, satisfying a key complaint in the current GDS environment.

Web-Only Fares and the Corporate Market

The subject of Web-only fares continues to generate heated debate in the industry. This leads to three basic questions: (1) Do Web-only fares apply to corporate travel? (2) Do travelers continue to shop these fares as part of the buying process? (3) What is the long-term impact of such fares, and how will they be incorporated into self-booking technology?

1. Do Web-only fares apply to corporate travel?

Traditionally, Web-only fares have been an extension of a broad distribution strategy by suppliers to sell unused inventory at deeply discounted prices. Many of these fares have had a multitude of restrictions that make them impractical for the business traveler. More important, even when lower prices are found, the true cost of these fares goes beyond the price of the ticket. This corporate leakage may influence the performance level of corporate contracts, affecting back-end

discounts paid to the company.

The issue of whether Web-only fares apply to the corporate market depends on the particular routes of the company and the given moment of time of the analysis. There is no set answer to this question, as the availability of these rates changes daily.

2. Do travelers continue to shop these fares as part of the buying process?

A number of recent studies have dramatized the impact of Web-only fares on the business travel market:

- According to research from Gomez, Inc., and Nielsen/NetRatings, of the 54 million visitors to online travel sites, more than 36 million surf from work.[6]

- Research from Forrester presented at the e-TravelWorld conference in April 2001 in New York City showed some surprising results. When frequent business travelers in a *managed* travel program were asked, "In the past 12 months, where have you booked business travel online?" the percentage (approximately 38 percent) who said they booked "on the Internet" was equal to the percentage who responded that they used a "company booking site."[7] In a recent NBTA survey, "61 percent of survey respondents reported that online booking sites such as Orbitz, Travelocity, and Expedia have increased employees' researching and booking of airline tickets on the Internet. Eighty-two percent stated that employees are finding Internet fares that are cheaper than corporate-negotiated discounts. This figure is up from 46 percent last year." The study went on to say that "more importantly, when agents have

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[6] "Online Travel Planning Costs U.S. Businesses $18 Billion Annually, Reports Websense Inc.," press release, June 26, 2001, www.websense.com/company/news/pr/01/062601.cfm

[7] Henry H. Harteveldt, senior analyst, Forrester Research, "Land of Opportunity: The Web's Frequent Travelers," paper presented at e-TravelWorld conference, New York City, April 3, 2001.

discovered the lower fares, 61 percent report that the GDSs either do not display the fare or it appears and then disappears."[8]

Clearly, whether or not you believe these fares apply to corporate travel, the business travel buying process is being influenced by Web-only fares.

It is important to note here that the growth of Web-only fares and rates is also responding to a dramatic change in the buying behavior of the general public. The Internet has made us all into shoppers. The process by which we purchase any item has permanently changed. For everything from consumer electronics to large-ticket purchases such as automobiles, consumers use the Web to comparison shop. The corporate traveler is also a consumer, and therefore it is only natural to see this trend extend to corporate buying behavior. The fact that there are fares and rates online that do not exist in the offline world has further exacerbated the problem.

3. What is the long-term impact of Web-only fares, and how will they be incorporated into self-booking technology?

This question is at the heart of the current restructuring of both the online and offline environment. Self-booking tools cannot be perceived as complete unless they contain all available fares. With 90 percent of reservations still being performed by corporate travel agents, the traditional offline world is under even greater pressure to provide a complete view of available fares. As a result the corporate travel industry has seen a flurry of announcements on both fronts regarding tools to incorporate Web-only pricing in the self-service and agent point of sale (POS) environments.

The use of robotic intelligent agent software is the interim solution to Web-only fares. This software extracts the Web-only rates from the supplier or retailer Web sites and populates the self-booking tool or agent desktop with this information. Will these sites find a way to cut off

[8] NBTA press release, June 28, 2001, www.nbta.org

these robotic agents? That depends on the way the software is executed. If a single Internet address is used, it is likely that a large retailer or supplier site will shut off the access of a robotic agent. Some vendors claim to use either peer-to-peer technology (à la Napster) or corporate-based servers that show multiple or corporate addresses to these searches. Given the current market frenzy and the early stage of deployment of these tools, the next six to eight months will likely demonstrate whether these interim solutions will be allowed to continue their screen-scraping activities. Of course, the suppliers themselves may simply decide to discontinue Web-only pricing if yields suffer because the profitable business travel market is cannibalized by the use of Web-only fares. Another factor may also involve a complete restructuring of the airline pricing fare structure, as was recently implemented by America West airlines in the United States and British Airways in Great Britain.

Vendor Solutions

The Web-only solution market can be divided into three broad categories: (1) vendors that sell intelligent agent robotic search technology, (2) self-booking vendors who partner with these companies, and (3) vendors focused on travel agency desktop access to Web-only fares. These categories may not be mutually exclusive, as some suppliers offer multiple solutions.

Search engine vendors. Vendors such as AgentWare, FareChase, FareQuest, Quixo, and SideStep all have search technology that provides access to Web-only inventory.

Vendor Partnerships

Self-booking vendors such as Outtask have teamed with FareChase. Every self-booking vendor interviewed for this update was in the process of either deploying its own search engine technology or partnering with one of the above vendors to bring to market a solution for Web-only fares.

Agency Desktop Solutions

FareQuest is partnering with Advanced Travel Solutions for the agent POS platform. Some of these vendors, such as AgentWare, another vendor with a greater agency focus, offer feeds to back office accounting systems. Excambria takes a bit of a different approach, selling both a software solution to the corporation for the agent desktop and a hardware solution that sits behind the corporate firewall. Excambria searches Orbitz, uses the Quixo engine, and incorporates rates from an extensive consolidator database. St. Louis–based Innovative Travel developed its own fare-searching technology that checks more than 40 sites and incorporates these prices along with traditional published and corporate discounted rates available in the GDSs. Its product is called Fare Weasel and is currently being used for the agency's client base. Discussions are under way for a broader distribution of the product.

GDSs' Response

GDSs are also working on solutions to speed up the integration of ATPCO processing to incorporate the Web-only inventory into the normal GDS display. It is my belief that incorporating Web-only inventory into both self-booking and agent POS environments will become a standard offering of all vendors (including all the mega–travel agencies) within a year.

Support. Support for these bookings continues to be a challenge, as a direct fee is required. This fee includes both the costs of agency-direct-bookings support and those of integration with agency-based management reporting systems. Again, since the issue of Web-only fares and rates is really a business-driven problem, support is not clear-cut and could lead to some confusion. The travel agent needs to support these reservations with the supplier or retailer site via telephone. The added cost of providing this support may offset the value of the Web-only discount. If the corporation completely relinquishes support of the record to the supplier site, capturing information on changes for accurate tracking of all employee purchases may be a

challenge. One thing is already clear: corporate travel managers should include permission to access Web-only inventory as a basic part of supplier negotiations. Tracking Web-only fares needs to be the top priority of every corporation.

Web-Only Business Travel Packages

Another unknown factor in the issue of Web-only fare applicability is the trend toward net rate pricing by the large consumer travel sites. Both Expedia and Travelocity have negotiated net rate agreements with suppliers. This allows these agencies to mark up airline prices and build their own vacation packages. Though leisure travel has been the focus of these air, hotel, and car packages, this trend could have a significant impact on the corporate market. Each of these sites already has a dedicated area for small market and midsize market business travel. As each aggressively pursues this segment, attractive business-travel-oriented packages will likely be offered. Depending on how the online retailer positions these packages, the combined price may rival corporate-negotiated details, impacting lightly managed business travel as well as managed corporate programs.

If from a supplier's viewpoint allowing corporate travelers access to heavily discounted Internet specials is a dangerous trend that has the potential to cannibalize the very profitable business travel segment, then why would suppliers consider Web-only pricing as a viable corporate strategy? The answer may lie in the continued pressure to lower distribution costs.

Emerging Technology and Market Trends

The Changing Infrastructure of Travel Distribution

XML and E-Marketplaces

It is important to emphasize that the travel industry does *not* drive technology trends but that, rather, technology trends drive travel automation. The clearest example of this today is the trend toward the use of Extensible Markup Language (XML) and e-marketplaces.

Most vendors have already embraced the next-generation Web language: XML. Some view XML as a key technology that will usher in a new era of direct supplier connectivity that will eventually replace the legacy GDS environment. Though this vision is still far from reality, the impact of XML on the industry does foretell a dramatic change in travel distribution.

What is XML, and how does it differ from Hypertext Markup Language (HTML)? HTML is a language for *storing* and *exchanging* documents on the World Wide Web, while XML is a standardized format designed specifically for transmitting *structured* data to *applications.* This difference is significant: HTML represents a static environment that simply reflects the information stored on a server, while XML actually identifies the structure of a data element and in turn allows an application to use that structure to execute a transaction. In an XML environment, Web pages connected to reservation systems could be accessed by self-booking software to more efficiently book directly against the supplier's inventory system. XML can also be used to help disparate systems talk to each other, a common industry problem. XML is challenging all current electronic data interchange standards, such as Edifact (the current standard for communication between airline systems, developed by the United Nations). The question then arises as to why one standard is superior to another. The assumption made by the market is that XML will provide a lower-cost environment than the traditional Edifact-based system. This may be a function of the nature of direct connections themselves more than of the protocols per se, and thus this premise

still needs to be validated. The key advantage of XML, by definition, is its extensibility, which means that suppliers can add additional information while still adhering to the standard. For example, an airline might decide to add information about the wine served on its business-class flights or to list the movies offered. The amount of extensible information is unlimited; thus, this new language has the potential to greatly enhance the information offered as part of the booking process.

Granted, at this point the vision of a travel e-marketplace is more hype than reality. Yes, direct connections with suppliers are happening today, but as of this writing the vast majority of corporate travel booking transactions are still done using the traditional GDSs. It is also important to note that the GDSs provide more than connectivity to suppliers: they provide sophisticated fare-quoting logic and inventory management capabilities that are not easily duplicated. Some emerging software solutions, such as ITA Software and GetThere's new Automated Travel Systems (ATS) faring engine, are now able to provide non-GDS fare-quoting capabilities.[9] In addition, the GDS community is not blind to the XML tidal wave and is implementing its own XML strategies. Given that the e-marketplace theme is an important marketing message promoted by the largest self-booking vendor, GetThere, it is essential that the corporate buyer understand this new environment. The electronic marketplace needs to be viewed in the context of its long-term potential value, weighed against today's realities. A corporation's near-term, midterm, and long-range supplier management objectives will ultimately dictate this evaluation.

XML's success depends in part on two factors: standards and implementation. The Open Travel Alliance (OTA) was formed in 1988 to promote XML standards. The OTA now has a global membership of over 150 companies including suppliers, intermediaries, and technology

[9] ITA Software, www.itasoftware.com; www.travelsys.com

providers. The OTA's mission is to create an agreed-upon set of XML schema specifications to be shared throughout the travel industry. The goal is to promote interoperability, the ability of software and hardware on multiple machines from multiple vendors to communicate. Most of the major travel suppliers, GDSs, and agencies, as well as some corporate travel managers are actively involved in the OTA. In addition to this standards initiative, most of the vendors analyzed for this study have already embraced XML, and many have gone beyond the current standards by implementing XML in other aspects of the reservation process.

The true impact and ultimate value of this new e-marketplace for the corporation are not completely clear. Common wisdom and purchasing theory practices go on at length about the concept of supply chain management as a key driver in reducing procurement costs. In the general world of e-procurement, this involves hooking a corporate intranet into a supplier catalog in a closed exchange (figure 1) to reduce distribution costs and lower prices for the corporation. Another type of exchange allows an open forum to let multiple buyers connect with sellers in a situation that more closely approximates a public marketplace (figure 2) In some cases, exchanges allow multiple buyers to aggregate their purchasing volume and solicit supplier bids based on their combined buying needs. VerticalNet[10] supports a number of these marketplaces.

Some may argue that the GDS is an early form of an e-marketplace, as it acts as a clearinghouse for most corporate-supplier transactions. In this way, self-booking tools are analogous to Ariba and Commerce One, providing a Web front end to the GDS transaction engine. The difference lies in how the GDSs are built. It is my belief that Internet-based marketplaces will become the standard, resulting in lower distribution costs for the supplier with the savings being shared (it is to be hoped) with the corporate customer.

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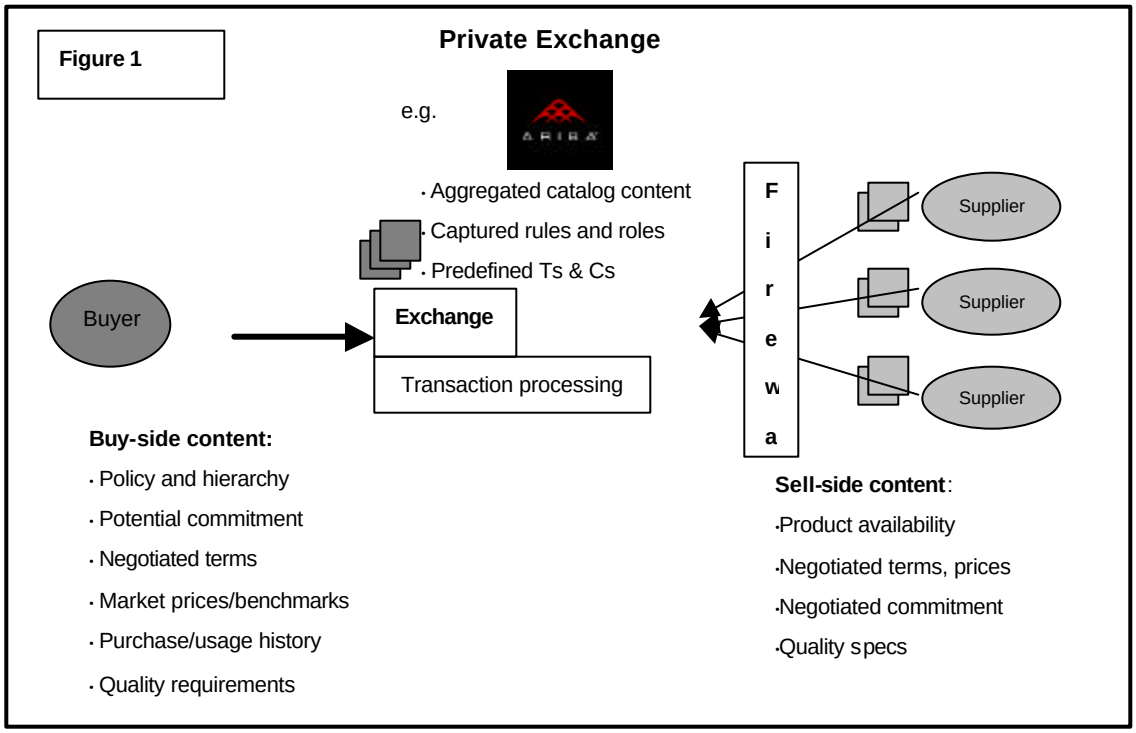
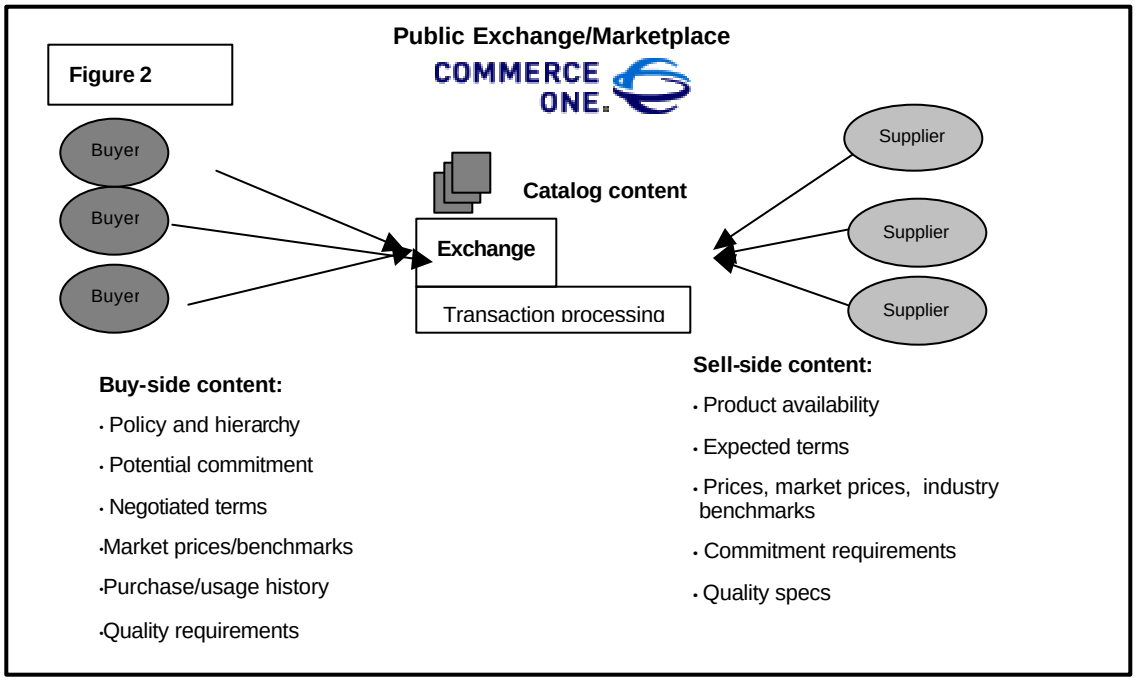
[10] Vertical Net, www.verticalnet.com.





Web Services

The technology research firm IDC defines Web services as "machine-to-machine services" on the World Wide Web based on the Web services architecture (WSA). The WSA is a standardized approach to dynamic component connectivity and interoperability that relies on self-describing components and open connectivity standards, including Internet Protocol (IP), Simple Object Access Protocol (SOAP), and Web Services Description Language (WSDL). Other standards such as XML are evolving to meet operational and business process automation requirements and, as they mature, will become part of the WSA.[11]

That's clear, right? It actually is not as confusing as it may sound. To better understand this definition, let's dissect it into its components. Machine-to-machine services simply refers to one machine talking directly to another, sharing information easily. It may sound simple, but this issue is at the heart of an industry wide (not just travel-related) problem. At most companies systems don't share information on a real-time basis either internally or externally with trading partners. This lack of connectivity leads to "one-off" integration solutions that upload and download information between systems. By adopting a standardized approach through the use of XML, SOAP, WSDL, and Universal Description, Discovery, and Integration (UDDI) protocols, systems "serve" information to other systems both internally and externally, allowing systems to talk to each other over the Internet or within a company's intranet.

What does this hodgepodge of acronyms mean for corporate travel technology? As all travel companies adopt Web services standards, a new platform for travel commerce will be created. Following are a few examples of how the adoption of Web services will change the travel technology landscape.

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[11] IDC www.idc.com/getdoc.jhtml?containerId=pr2002_03_14_152202

Using Web services internally. Most suppliers have not connected their customer loyalty databases with reservation systems. How many Web sites incorporate your frequent flyer or guest status into the way they display their inventory? On the hospitality front, property management systems do not interface well with hotel central reservation systems or other internal hotel automation (such as catering and guest services). Web services have the potential to bring down the walls between these systems, allowing real-time interaction between customer intelligence and reservations. All the major suppliers and intermediaries are actively implementing customer relationship management (CRM) systems (more about CRM later in this document). The integration of CRM databases and reservations will be enabled through Web services. The implications for the corporate travel industry are significant. Web services will allow suppliers to better target their marketing efforts to their best customers, frequent business travelers.

Web services and the next platform for travel e-business. Many believe that the adoption of OTA schemas will lead to a new marketplace in which travel suppliers make their products available via Web services, allowing them to be purchased, bundled, packaged, or redistributed by anyone who has a Web-services-enabled application. This broad vision has a more narrow meaning for the corporate travel industry, as Web services combined with OTA standards can usher in a new era of direct supplier connectivity. To achieve direct supplier connectivity, both self-booking and agency POS platforms need to develop independence from a single-source GDS. The further advancement and deployment of middleware provides the necessary infrastructure to enable this independence.

The Growth of Middleware

Infrastructure is not sexy. Most writers, including yours truly, would rather talk about hot leading-edge technology such as Wi-Fi. The reality of travel technology, though, is that the emergence of middleware represents the *single* most important technological change in the way travel products are sold and purchased.

Over the last eight months the growth of a stable middleware layer for both the corporate self-booking platform and the agency POS has gained tremendous momentum. GetThere's Integrated Direct environment, Datalex's BookIt! Matrix, PASS Consulting Group's XML Transaction Server (XML TS), TRX's xDS, and KDS's KDS Corporate middleware are examples of a significant architectural trend in corporate travel technology. Middleware is defined as software that acts as glue, connecting two otherwise separate applications. Middleware is sometimes called "plumbing" because it connects two sides of an application and passes data between them.[12]

Traditionally, creating software that connected a Web interface to a GDS transaction engine involved the use of application-programming interfaces (APIs). APIs were created by the GDSs to allow self-booking vendors to write software code that works with standard transaction formats. To further advance this concept, the four GDSs have created XML interfaces over their structured data interfaces as a way to standardize and simplify the communication between the mainframe and the Web-booking tool. The amount of structured data available varies between GDS platforms. There is some debate and controversy over the quality and value of any given GDS's structured data environment versus that of another. Though some GDSs claim to provide comprehensive structured data calls, self-booking vendors report that no GDS can provide 100 percent of the conceivable calls to the mainframe in a structured manner. In general, most self-booking vendors try to incorporate as many standard structured data calls as possible in their application, as this enhances the communication between the application and the mainframe. The reality is that most systems use a hybrid of structured and unstructured (screen-scraping) data.

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[12] Definition of *middleware* is from Internet.com Webopedia, www.webopedia.com/TERM/m/middleware.html

Middleware plays an important role in the way technology vendors treat communication between their application and the mainframe by creating a standard, normalizing layer across all GDS platforms. The middleware contains parsing technology that translates the native GDS response (whether structured or unstructured) into a standard software object, regardless of the GDS platform. This further opens up the possibility of receiving data directly from other sources, such as the Web or direct supplier connections.

TRX's Trinity project is an example of how middleware can change the agency POS as well as the self-booking interface. The same middleware that powers the next-generation ResAssist platform provides the infrastructure for Trinity.

The goal is to treat all the GDSs as data sources. Think of it this way: Traditional travel reservation technology involves a single conversation between a Web client and a mainframe application. This conversation is limited by the information available from the mainframe. In a middleware-enabled environment the conversation can occur between the Web client and multiple applications simultaneously. The bottom-line effect of the middleware layer is to redefine the GDS information as *one of many potential* data sources rather than the *only* data source for the transaction.

The GDS as a Data Source

What does it really mean to treat the GDS as a data source? The answer to that question lies at the heart of a move toward a more open computing environment. The Internet age has not only ushered in a wealth of new information; it has forever changed the underlying computing infrastructure. No one system can hold and control all the information possible in an open environment. The problems that exist with Web-only inventory and first-generation self-booking tools are symptomatic of this issue.

Built in the late 1960s and early 1970s, GDSs are inherently closed in their architecture. It is my belief that these systems will evolve into a new, flexible, open platform to survive the new computing paradigm. By its nature, self-booking technology has been built on an open distributed platform. The emergence of the middleware layer signals an architectural shift that moves the computing focus away from the mainframe and onto this new platform. This need for a more flexible system seems to have been an underlying motivation behind the Sabre-GetThere acquisition. Galileo's Project Data Store's effort to move profile information into a server-based platform is another example of this shift away from a mainframe-centric computing environment. Worldspan's partnership with Expedia to provide new fare-searching technology, called ePricing, to its travel agency subscribers further demonstrates this trend.[13] As the GDSs become data sources rather than single sources, some of the functionality that existed at the mainframe will be transferred to server-based systems.

Multi-GDS Versus Multi-flavored GDS

An important distinction to be made in this discussion is that between the terms *multi-GDS* and *multi-favored GDS.* Building a Sabre versus a Galileo version of a self-reservation tool can be accomplished by writing code that works with the published APIs of the two GDSs in this example. To extract information simultaneously from multiple GDSs and combine it into a single display is more challenging and requires a robust middleware layer. This middleware layer is also the key architectural foundation for seamlessly incorporating Web-only inventory as well as supplier direct connections.

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[13] "Worldspan Offers Travel Agencies Expedia Fare Search Technology," *Web Travel News,* www.webtravelnews.com/article.html?id=794

Is a Separate Fare-Quoting Engine Needed?

The implementation of ITA Software on the Orbitz site marked a milestone event in travel reservation technology. For the first time a major distributor was relying on third-party software for fare quoting, which had normally been done in the mainframe GDS. A fare-quoting engine has been a priority of other vendors as well, as shown by GetThere's purchase of Automated Travel Systems. Here are some things to consider when evaluating a separate fare-quoting engine: (1) Does the fare-quoting engine yield better prices than traditional GDS methods? (2) Can it incorporate multiple GDS fares and non-GDS pricing into a single quote? (3) Can it create a non-GDS record that can be stored and used for ticketing? (4) Can it handle international fare quotes that are now performed manually?

1. Does the fare-quoting engine yield better prices than traditional GDS methods?

I believe the jury is still out on this subject, but the infrastructure change is significant. Built on flexible object-oriented software, products such as ITA can be more easily modified to changes in market conditions and are capable of evaluating a larger number of alternatives at a greater speed than traditional GDS technology. The ITA style of fare quoting handles a larger variety of choices at a lower processing cost. Even more important, the grid type of interface seen on Orbitz matches the comparative shopping expectations of the Internet shopper.

2. Can it incorporate multiple GDS fares and non-GDS pricing into a single quote?

As Internet distribution becomes refined and one-to-one pricing emerges, nonpublished fares may become a significant part of the transaction. The faring engine must be able to include these sources into a single quote. This also may include multi-GDS pricing as a way to further define the concept of the lowest applicable fare. Web-only fares need to be evaluated for adherence to corporate rules and be integrated into a single display.

3. Can it create a non-GDS record that can be stored and used for ticketing?

Storing and ticketing fare quotes created outside the GDSs is not a simple process. For example, at present Orbitz still relies on Worldspan for this function. The growth of Airline Reporting Corporation (ARC) direct airline reporting will enable a direct connection reservation to bypass the traditional agency reconciliation process and help to reduce fees for the supplier. This is something to watch as more third-party fare-quoting engines and direct airline connections hit the market over the next 6 to 12 months.

4. Can it handle international fare quotes that are now performed manually?

Automating a manual process always creates productivity savings. Why then are so many multistop international itineraries still priced with human intervention? The reality of international faring is that it is complex and involves "rule-of-thumb" processes learned by international rate specialists over years of practice. Software capabilities will need to mature in order to automate this function. The ability to automate international rate quotes outside the GDSs is still a work in progress, and again, it is an important differentiating feature to watch as these GDS-independent fare-quoting products become more common in the corporate self-booking marketplace.

Direct Connections and Web-Only Pricing

Been there, done that. Many feel that way about direct connections. Despite the hype around this subject over the last three or four years, few examples of direct connections, defined as GDS bypass, exist today. The expense associated with building and maintaining a direct link and the problems associated with fulfillment and support were two prominent reasons that past initiatives failed. The bottom-line value to both the supplier and corporation became questionable, as each party wanted to capture the savings associated with GDS bypass. Navitaire continues to promote its direct connection platform but no longer sells a corporate self-booking tool (via World Network).

What is the relationship between Web-only pricing and direct connections? Simply put, one of the drivers behind Web-only pricing is lower distribution cost. Many believe that if you could match the costs of Orbitz or supplier direct, through a one-off direct connection into a self-booking or agency POS platform, Web-only pricing would be made available to all channels. As stated earlier, Web-only pricing is a business practice issue. Lowering distribution costs through direct connection is an admirable long-term solution to the Web-only fare crisis, but it is ultimately up to the suppliers to determine whether corporate distribution of Web-only fares is in their best interest. OTA standards for hotel and car rental now allow a consistent methodology for direct connections to these types of suppliers. The OTA air standard is due out later this year, and time will dictate whether the market embraces this standard for further GDS bypass. In the meantime, vendors such as GetThere have implemented their own XML-based communication layers with selected airlines and will again be the driving force promoting the concept of direct connection this year.

Fragmented Passenger Name don't work

In 2000 and 2001 Delta encouraged large corporate customers to book directly on the airline's Web site, giving them the ability to obtain their corporate-negotiated rates. With the ambitious Delta.com initiative it became clear that simply directing the traveler to the airline's Web site could save distribution costs, but of course this is not without problems. The bitter reality of implementing a direct airline Web site strategy is a fragmented passenger name record (PNR) that becomes difficult to service and confusing for the traveler. A more comprehensive solution is needed.

Corporate Orbitz? Could that comprehensive solution be Orbitz? In the short term that is unlikely, though it is my belief that a corporate Orbitz product will be launched within the next 12 to 18

months. This corporate market strategy would most likely take a different tack than current self-booking products. The Orbitz site has been built around a distributed computing model.[14] Though Worldspan is a partner in the project, its role in the transaction is more limited than in the usual GDS-centric model. Orbitz uses ITA Software for its fare-quoting capabilities, a function formerly done on the mainframe. This move away from GDS-centric travel transaction is significant. Orbitz is built using a distributed server-based platform that offers a lower cost of distribution and, most important, a more flexible computing environment.

What would a corporate Orbitz look like? An obvious problem arises with a supplier-hosted solution regarding negotiated rates. Would there be negotiated rates on a corporate Orbitz? Perhaps the airlines would instead simply post a discounted Web-only business fare category through a corporate Orbitz. This Web-only business rate could come close to some of the percent-off discounts that midsize companies achieve through negotiation and thus make supplier negotiations unnecessary. If this model were followed, a further disruption of the market could be expected as Web-only business fares available through Orbitz or supplier sites put additional pressure on the market. The current market pressure on re-inventing and simplifying the overall airline fare structure may backfire for the corporate customer by eliminating a large majority of corporate negotiated agreements. A Corporate Orbitz may play a role in this ultimate restructuring.

Agency E-Support Centers

The majority of corporate travel is still supported by traditional call centers. The infrastructure change mentioned above is being applied to the agency environment. In other words, the same

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[14] "Orbitz Study Blasts CRS Fees: ASTA Calls It 'PR,'" *Travel Weekly,* March 16, 2001, www.twcrossroads.com/news/newssearchwrapper.asp?ArticleID=25844

middleware layer that transforms the GDS into a data source rather than the only source is transforming e-support centers. We are at an early stage in the development of these new platform-independent call centers, but products such as Carlson Wagonlit's Symphonie point to a number of important changes that all the mega-agencies are in the process of implementing.

Who Owns the Customer?

Much of the recent debate about who owns the data that resulted from the Continental Airlines/Prism Group controversy[15] (and now United Airlines) may have foretold a larger issue brewing: Who owns the customer? Why is this important? For years a static flat file sitting in a mainframe has been labeled the customer profile. With today's Internet technology and focus on customer relationship management (CRM) the profile no longer consists simply of a list of frequent flyer numbers or seat preferences. Internet technologies provide us the opportunity to track the behavior of individuals as they interact with the Web. This same level of personalization is being brought to the corporate portals, allowing the corporate employee to interact with a variety of suppliers using a single login on the employee's intranet home page. The battle for ownership of the business travel customer involves moving the static profile from the mainframe and enhancing it to provide more personalized services. GDSs, mega-agencies, suppliers, and enterprise technology vendors are positioning products to become the primary customer repository for travel. All of the mega-agencies interviewed for this update are in some stage of development or deployment of a GDS-independent customer profile.

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[15] "CO Demos Reporting Tool amid Data Privacy Concerns," *Business Travel News,* May 7, 2001, 63.251.31.118/db_area/archives/2001/05/01050712.htm

Call Center Technologies

What technologies are being deployed to drive efficiencies and lower costs in these e-support centers? The answer depends on the particular agency environment, but even the most basic e-support centers are in the midst of dramatic change.

The first and most important technological advancement for the agency community was the implementation of an independent IP-based network. The historic dependence on the GDSs for networking has constrained the community of mega-agencies from optimizing their ability to communicate with their customers and internally across offices. IP-based networks have now become a standard infrastructure piece for all the mega-agencies.

The independent profile mentioned above is the second critical piece. This is a bit more challenging, as integration with traditional GDS profiles, corporate human resources (HR) employee records, and self-booking vendor initiatives have complicated the effort. Self-booking profiles add another layer of complexity to this effort, especially if the vendor is involved with GDS bypass. I believe that when the dust settles the effort by the mega-agencies to establish a single profile view of the customer will prevail, provided that it can be tightly integrated with HR employee records. As of this writing not all e-support centers are using independent profiles, but the trend to move to such an environment is universal across all the mega–travel management firms. Those travel management firms that are adopting a single middleware platform such as TRX's Trinity or TQ3 Maritz are setting the standard that all agencies must follow.

The third immediate focus is the deployment of a dedicated e-support center whose sole function is to support the online booking customer. Apart from the obvious economies of scale, this approach has immediate value to the corporate travel community, as common tools and approaches can be shared across clients to maximize efficiency and drive user adoption. The key buzzwords around this dedicated e-support center involve maximizing touchless reservations.

Simply defined, this refers to the fulfilling of the transaction without the need for human intervention. Another key metric is the reduction in the number of calls per transaction. The common mission to drive adoption also differentiates the way these e-support call centers interact with the traveler. The goal is always one of education, to show the traveler or administrator how they can do the function themselves on their next call. This approach has yielded some dramatic results, such as a reduction in the number of calls per transaction at the American Express e-support center from an average of 2.5 calls per transaction down to 0.65 calls per transaction. These lower support costs equate directly to lower operating costs for the agency and lower fees for the corporate customer.

E-support and Self-booking Applications

The mega–travel agencies have positioned themselves both as distributors of self-booking technology and as advisers on self-booking selection. Most of the large travel management firms take the neutral position of helping corporations choose the best booking engine that meets their requirements, while at the same time offering either a preferred set of vendors or their own solution. This is an interesting balance, but one that seems to be effective in the market. The primary focus of the agency community has largely shifted over the last 18 to 24 months as each mega-agency has built its own low-cost e-support/e-fulfillment centers.

Emerging Call Center Platforms

A major trend in call center support is the use of CRM technology to allow customer service agents to treat each caller in a highly personalized manner. Have you seen the Siebel commercial where an irate customer calls and a somewhat bewildered customer service agent politely asks, “Can you please tell me your problem?”? The caller goes on to yell at the agent, saying that she has already called numerous times and he should know her problem. Unfortunately, this scenario may still be a reality when a customer contacts a mega-agency e-

support center if the company has not deployed technology to track customer history and issues. The biggest inhibitor of this approach is the continued reliance by the agencies on the GDS platform as their primary call center interface, an infrastructure that is rapidly changing. Most centers deploy Web-based technology that allows the agent to assist with the navigation of the self-booking tools. This navigational support can be very helpful in driving adoption, but a truly integrated platform is needed to adapt to this new business process.

Each of the mega–e-support centers deploy different technology to achieve their efficiencies. With the current market still plagued by low adoption rates and first-generation platforms, a hybrid approach to corporate e-commerce will be needed for some time. How the call center interacts with the self-booking tool plays a critical role in increased adoption. Agents need the ability to complete partial reservations and should be using standard Internet-based call center technology such as instant messaging and voice-over IP as part of the e-support center's solution. Telephony integration that automatically connects a caller with their profile history (usually through a PIN #) is another important e-support center enhancement to watch.

Wi-Fi

"Far from what tradition might indicate, the wireless Internet isn't turning out to be one of those tech breakthroughs that arrives accompanied by a Microsoft-sized marketing campaign and eight-foot high display in consumer-electronics stores. Instead, it's a grassroots trend that moved from research labs, to techie circles, to hobbyists—and that now, after five years is about to reach the general public."[16]

[16] "Wi-Fi: It's Fast, It's Here—and It Works," *Business Week Online,* April 1, 2002,www.businessweek.com/technology/content /apr2002/tc2002041_1823.htm

This quotation from a recent *Business Week* article describes the dramatic growth of a broadband wireless technology known as 802.11b, or more commonly known as Wi-Fi. Wireless connectivity has been the single most over hyped technology trend over the last year. The vision of the always-on, always-connected traveler has been promoted but not delivered for some time. Wi-Fi promises to deliver the services and capabilities long promised as part of the wireless revolution hype.

Wi-Fi stands for wireless fidelity, a networking standard that's used to create wireless local area networks in homes, offices, hotels, and airports at speeds up to 11 megabits per second. This is far faster than the peak 144-kilobit-per-second rate that the new third-generation mobile phone networks plan to deliver. Wi-Fi is both fast and relatively inexpensive to install. It operates on the unlicensed airwave spectrum, so no additional fees (other than the broadband connection to the Internet) are charged. To connect to a Wi-Fi network, a laptop or PDA needs a special network card.

"Wireless local area networks (WLANs) . . . are a so-called disruptive technology that will have the same impact on the networking industry that wireless phones did to the telecommunications industry," a recent study released by market research firm IDC claims.[17] How will the emergence of Wi-Fi networks impact the way travelers interact with suppliers and your company? One of the largest growth areas for Wi-Fi is in airports and hotels. In fact, Boingo, a major supplier of Wi-Fi networks, says that 26 major airports will have Wi-Fi access by the end of 2002. The Internet revolution is really about communication. Wi-Fi is enabling technology to allow travelers to be always connected. The potential of such an environment in the corporate market has both great

[17] IDC – Preliminary Worldwide Wireless LAN Equipment Market Forecast and Analysis, 2002-2006 - http://www.idc.com/getdoc.jhtml?containerId=26797

promise and significant challenges. It finally makes possible the often-quoted example of a mall shopper's passing by a store and being offered a special electronic coupon through his or her always-on wireless technology. Wi-Fi could enable a corporate travel manager both to communicate with elusive frequent travelers with offers designed to direct them to preferred suppliers and to assist them with travel support. Suppliers may make use of this networking capability to build an even stronger bond with their best customers. Wi-Fi is definitely a technology to watch over the next 8 to 12 months.

Enterprise-Computing Issues

Overview and Market Trends

Corporate-based technology often referred to as enterprise computing, represents the most significant force impacting travel technology development and deployment. Related enterprise-wide initiatives such as e-procurement and corporate portals have a direct bearing on the adoption of travel technology tools. Over the past few years, corporations have continued to implement systems to empower their employees. The emergence of Internet standards within enterprises has made Web-based self-service tools commonplace. These wide-area corporate intranets have allowed companies to build bridges to their legacy systems, providing Web-based interfaces to their employees for a variety of applications.

Enterprise Computing and Corporate Travel Technology

Travel technology follows general trends. It can be a daunting task for a travel manager to persuade senior executives that travel reservations are a core function that needs automation. Unlike expense reports, which clearly have a long corporate history, reservation activity has traditionally been "outsourced" to travel agencies. Complicating this further, most senior executives rarely personally interact with the current process, as this function is handled offline by their administrative assistants. In contrast, by their very nature, enterprise-computing initiatives

have a *strong* senior management focus and support. Much of the "spin" associated with this subject is a function of marketing as well as integration. By marketing self-booking technology as an enterprise function, new support can be mustered for the travel reservation initiative. It is important to note that when self-booking is sold as an enterprise function, integration with other corporate systems becomes a critical issue. This means seamless integration with both current enterprise systems *and* business processes.

Enterprise-Computing Topics

Enterprise Resource Planning

Chief among corporate enterprise initiatives is enterprise resource planning (ERP) software. As corporate connectivity has grown, these systems have emerged from the finance and HR arenas to become the lifeblood of the enterprise. Systems such as Oracle, SAP, and PeopleSoft represent multimillion-dollar capital investments. They combine HR, finance, procurement, workflow, and inventory systems (to name a few) into a single enterprise-wide application.

The cost of integration with corporate systems represents a significant hidden expense in implementing corporate travel technology. Travel managers often lack the IT support and budget required to hook these systems into human resources, general ledger, CRM,, or decision support tools.

Customer Relationship Management

As companies create complex e-business strategies and implement one-to-one marketing programs, customer relationship management has taken center stage as an overriding corporate objective. CRM collects customer information in a data warehouse and then brings customer preferences and histories into a completely integrated environment that *interacts* with the customer at *every* contact point, whether online, on the telephone, or in person. CRM is a philosophy more than it is a single technology as companies strive to become more customer

focused. The goal is to transform the company from a management-driven hierarchy into a customer-centric organization.

CRM and Corporate Travel Technology

Why should a travel manager care about CRM in connection to corporate travel technology?

CRM is a driving principle for all suppliers, and the self-booking tool will soon become the primary point of customer contact. By integrating self-booking tools as a way to launch an internal CRM initiative, travel managers can gain support and provide better customer service to the traveler. Agencies and travel suppliers are embracing CRM strategies and technologies that will lead to better service, but this could also create conflict if the focus shifts to the share of the individual customer rather than the corporation as a whole.

When technology is applied to an existing business process, it often duplicates that process. This is frequently referred to as a "first wave" of technological innovation. Current self-booking tools represent an example of this first wave, as the Web user interface basically mirrors the steps normally taken by the travel agent. All the vendors interviewed for this study are striving to break this mold and design a more user-centric booking tool. The trend toward a more personalized CRM type of experience will soon collide with corporate self-booking products, as users will expect customized treatment. Corporate booking solutions both on a self-service platform and through the call center will implement personalization technology to provide a more compelling user experience as well as to provide a forum for more direct customer one-to-one marketing.

Two other elements of CRM are of equal importance: a single customer view and the ability to communicate directly with suppliers. The lack of a single view of the traveler continues to be a major problem for the industry, as profiles are maintained by vendors and intermediaries as well as by the companies themselves. Self-booking technology has complicated this issue further by creating a new profile. The key to a successful self-booking–CRM marriage is to consolidate all

aspects of a customer's profile no matter where it exists and to *use* this information in a way to enhance the booking experience for the user. The Open Travel Alliance XML profile standard is an important step toward standardizing profile management for the industry.

The other opportunity that a CRM approach to self-booking provides is interaction between the customer and the preferred supplier. Current technology simply flags the preferred supplier in an availability display that is similar across self-booking vendors. Agent POS applications and self-booking are evolving to provide the supplier with a platform that enables direct communication with the traveler and the agent at the point of sale. This may take the form of special promotions, which help reinforce preferred supplier contracts, or may provide a feedback mechanism for customer service issues. It is essential to keep in mind that Web-based self-booking and agent tools are an extension of Internet technologies, which by their nature imply communication. How self-booking vendors embrace a CRM approach may provide the next level of product differentiation and is an important trend to watch.

CRM and the Enterprise

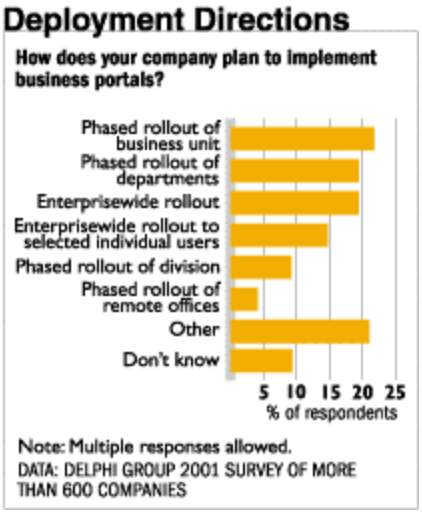
Providing personalized services to people based on their historical buying patterns and preferences has become a standard practice of e-commerce. How many Web sites have you enabled with the one-click option? Products such as the Yahoo! Wallet and the Microsoft Passport are positioned as universal profiles for shopping across multiple sites on the Web. The Liberty Alliance (in which United Airlines is a major participant) is an industrywide effort to drive a common standard for customer information. Online profiles not only store payment information but track buying behavior. As this trend gains more momentum, a parallel process is taking place behind the corporate firewall as companies build extensive profiles of employees designed to simplify and automate a variety of tasks in a one-click fashion. From a supplier perspective, gaining access to individual corporate traveler behavior can help target and service key customers as well as market distressed inventory to specific identifiable demand. To be

successful this approach must balance the needs of the traveler, the corporation, and the supplier. An example of this type of corporate CRM approach could involve a carrier's targeting of a specific company and specific travelers in that company with a special promotional fare to fill distressed inventory. This approach takes us to a new level of supplier partnership and travel marketing. It could be either the self-booking tool that provides or the agent point-of-sale tool that facilitates such an intriguing strategy.

The Impact of CRM

The trend toward CRM is further destroying the traditional barriers between corporate and leisure travel. When online sites such as Expedia, Orbitz, and Travelocity talk about share of a customer's wallet, they are looking at each traveler as a single individual, not as part of a pre-established segment. Whether or not the major online travel sites develop and deploy a formal corporate product, the impact of their CRM strategy will be felt on the corporate travel market. Share of customer means share of the whole customer.

Corporate Portals



Nearly 70 percent of Global 2000 companies are currently using or developing enterprise information portals (EIPs) to provide more personalized self-service interaction for their customers, suppliers, employees, or partners. The growth of EIPs continues to accelerate despite the slowdown in the economy.

What exactly is an EIP? IDC defines it as software that, based on user roles, manages end-user access to multiple applications and information sources on the corporate intranet.[18] Whether they are agency sponsored, part of a self-booking tool product, or an extension of an internal travel Web site, travel portals must fit into the overall corporate strategy for EIPs. A corporate portal is a personalized home base for a company's employees, combining information from the company intranet with selected links from the Internet. These "corporate Yahoos" are specifically designed for employee remote access, and therefore they become a natural front door for business travelers who are on the road. Sales of corporate intranet portal products will soar six fold during the next three years, rising from $200 million in 2000 to $1.2 billion in 2003.[19]

As an important subset of the corporate portal, all travel information, including reservation, expense, and management reports, needs to be accessible via the established corporate portal. With the strong investment in this technology over the next three years, travel managers need to integrate self-booking strategies in the context of a corporate portal initiative.

E-Procurement

Business-to-business e-commerce has become one of the hotter technologies. Companies such as Ariba and Commerce One have pioneered the concept of online procurement and have created e-marketplaces for a variety of vertical industries. In the past two years the major ERP vendors have also added e-procurement functionality to their product suites and have introduced

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[18] IDC, "Race for Portal Preeminence," June 28, 2001, www.idg.net/crd_idgsearch_638491.html?sc=

[19] Madan Sheina (Aberdeen Group analyst), "Yahoo Goes Corporate with New Portal Push," *CNET,* June 26, 2000, news.cnet.com/news//0-1005-200-2151454.html

their own e-marketplace initiatives. Travel industry e-marketplaces continue to emerge, such as the Sabre e-marketplace for the travel agency community[20] and the airline exchange.[21]

The e-procurement phenomenon clearly demonstrates how an enterprise-computing trend influences travel technology. Essentially, self-booking technology can be viewed as an e-procurement solution, but for this to be a successful approach requires significant enterprise-computing integration.

Travel managers need to view self-booking tools as an extension of e-procurement. This is an essential strategy to market the technology internally in the corporation in order to fight the perception that travel reservation activity is not a core competency. Many travel management organizations now either report to purchasing or have a strategic relationship with this corporate function. Every effort should be made to roll the self-booking initiative into the broader e-procurement corporate process and *integrate* it seamlessly into the e-procurement corporate interface.

Integration and Web Services

Enterprise integration is expensive. As self-booking tools become part of an enterprise platform, the cruel reality of integration costs often surfaces. Expense management systems went through the same integration shock curve as they began to spread through corporate America in the late 1990s. Suddenly, it became clear that even when a given corporation standardized on a single ERP platform, different flavors of the HR or budgeting module across divisions and subsidiaries

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[20] "Sabre Online Marketplace Now Boarding," *CNET,* September 12, 2000, news.cnet.com/news//0-1007-200-2762394.html

[21] "Major Airlines Form Internet Exchange," *ECOM World,* April 27, 2000, www.ecomworld.com/news/042700_3.htm

would cause added, unexpected integration expense. This becomes an unpleasant and expensive cost of implementation. Enterprise integration is more than simply laying out an XML format as the guide for accepting an HR feed. HR and overall ERP systems have been highly customized for specific corporate clients, and thus exporting the required information in the required format is not always an easy task despite the growing acceptance of XML. Self-booking vendors now admit that the cost of this customization is borne by the customer and must be taken into account during the calculation of the total cost of ownership. This becomes additionally complex as preauthorization and/or decision support modules need to work with ERP workflow engines, and elements of an agency or self-booking portal need to be integrated with existing EIPs.

Decision Support

As of this writing the controversy over supplier-dictated contract-driven data management initiatives continues. The new united front of Cornerstone, Hi-Mark, and TRX against the Prism Group's supplier-centric approach is an important issue to watch. Unfortunately, this battle has taken center stage, distracting our attention from an equally important subject, the development of a single-source, integrated database for corporate travel management. A great deal of progress has been made over the last five to seven years by these companies in creating a consolidated view of information from multiple agencies and multiple sources, such as charge cards, expense management systems, back office agency accounting platforms, and supplier direct information. The next phase of development is a bit more challenging, involving true real-time integration of this information into enterprise systems. What does true real-time integration mean? Here are a few examples:

- Departmental budgets that are adjusted with each pre-trip approval
- Integration with internal CRM systems to determine the cost of support of key customers
- Integration with sales force automation to measure the productivity of the sales team

As mentioned earlier, companies are applying Web services both to connect to their strategic partners and to provide themselves with means to connect internal disparate systems. As Web services become more common, it should become simpler for a self-booking application to integrate with the internal systems.

The Total Cost of Ownership

Evaluating the Total Cost of a Corporate Travel Technology

To evaluate the overall impact of self-booking technology, a more holistic approach is required. A driving trend in procurement is the concept of total cost of ownership (TCO). A TCO analysis goes beyond the basic price paid for a product or service to evaluate the entire cost associated with the implementation and maintenance of the solution. In the self-booking context, TCO includes training, support, administration, maintenance, upgrades, and integration with enterprise systems, as well as the overall impact on travel agency operations. This raises some important concerns, especially if a system is purchased based on its superior user interface and/or a direct connection capability but adds additional cost by increasing the burden on the corporation or travel agency.

A tool to help you evaluate some of the key elements of TCO that apply to your vendor selection process is provided later in this study. (Appendix A)

Implementation, Integration, and Process Issues

An underlying theme of self-booking is improving the efficiency of the travel process. To be successful, this must encompass the entire travel cycle, including booking, changes, fulfillment, data extraction, and analysis and support. Based on this broader view of the selection process, factors such as business relationships, support, corporate and agency processes, and technology integration, as well as the product's basic features, need to be considered.

Data Handoff Versus Real-Time Integration

It is important to clearly distinguish the concept of real-time integration from simple data handoff. Sharing information is the first step in system connectivity, but it does not complete the process of real-time integration. Most of the vendors described in this study offer some basic handoff or capture of data between their systems and corporate databases. This provides a first-level communication environment to ensure consistent profiles and policies. Real-time integration goes one step further by creating a connection between systems through which a change in one database automatically creates a change in the other. Why is real-time integration important? The value of real-time integration depends on the number of changes that occur daily in your organization. If you are in an environment with frequent reorganizations and policy changes, real-time integration can seamlessly integrate such changes into the travel process to achieve maximum efficiency and value. This becomes an important issue as self-booking evolves into a more comprehensive travel e-procurement solution that allows selected pre-trip authorizations based on given business rules according to which organizational changes need to be implemented immediately to avoid travel-planning disruption.

Adoption

As the market matures, both the corporate customer and the self-booking supplier are placing greater emphasis on adoption. Two broad trends have emerged: mandates and innovative rollout techniques.

Mandates

With such corporate leaders as GE, Microsoft, and Oracle mandating the use of self-booking tools, the importance of such tools has grown. The general business and technology press has

picked up on this trend, with articles appearing in the *Wall Street Journal* and *CNET.*[22] Mandates are producing some amazing adoption numbers, but is a mandate the missing magic ingredient needed to drive self-booking to full-blown market acceptance? There is no disputing that senior management support is essential in implementing a self-booking strategy, but depending on your corporate culture, a mandate may produce a new set of problems. All travelers and trips are not the same. A simplistic mandate that only directs the company to use the tool to plan travel doesn't recognize nuances representing the different roles and functions associated with the reason for the travel. A simple mandate may in fact cause resentment from the traveler population, and in some cases it could even create an underground resistance movement to fight the corporate rule. This is worsened as the growth of Internet shopping casts doubt on the accuracy of self-booking tools. Add to that the fact that self-booking functionality is still at a fairly rudimentary level, and a poorly conceived mandate could lead to some real problems. Jumping from an adoption rate in the teens to a 70 or 80 percent level can be a nightmare to implement and support, resulting in irreparable harm to overall traveler and travel arranger acceptance. Please don't misinterpret the message here—mandates overall are a very positive development, but the implementation of the mandate requires careful planning and execution.

Successful Marketing and Training Strategies

Given that not all reservations and travelers are equal, more sophisticated rollouts that encompass innovative techniques are required. For example, one innovative travel manager implemented a three-tier help desk, with three kinds of training and charge backs. As part of this update, I asked each vendor to describe in detail three methods it has implemented to drive adoption. Please see question 6 of appendix B for more details about these adoption strategies.

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[22] "Old Corporate Travel Policies Won't Fly," *CNET,* May 13, 2001, news.cnet.com/news/0-1007-200-5904167.html

The Corporate Self-Booking Marketplace

Changing Market Dynamics

The acquisition of GetThere by Sabre sent shock waves through the corporate travel industry that are still being felt. The last few months have seen the acquisition of e-Travel by Amadeus, and of Highwire by Cendant/Galileo. This represents a clear polarization of the market as the traditional industry heavyweights (the GDSs) take control of the new self-booking medium.

Where does that leave independent companies such as TRX, KDS, i:FAO, Yatra, and Outtask? Over the past few years TRX has established itself as an independent technology provider for the industry, lessening its role as a direct distributor to corporate customers. This is most evident in TRX's successful marketing of its mid-office quality assurance product, EnCoRRe, to both American Express and Rosenbluth International. KDS, i:FAO, Outtask, and Yatra face an uphill battle to win market share and need to implement next-generation tools to differentiate their products and develop strategic relationships to survive.

Self-Booking Trends

When Will The Mainstream Embrace Self-Booking?

Mainstream adoption of a new technology is generally triggered when the technology provides a solution to a critical problem. It is my belief that the elimination of agency commissions on March 14, 2002, is the definitive event that will cause the market finally to embrace self-service reservation systems. But lower revenue (increased costs) is only one trigger; the growth of the consumer travel e-commerce sector has caused many senior executives to ask, "Why don't we just book everything over the Internet?" In this context, many corporate buyers see self-booking as a defensive measure designed to satisfy senior management's automation goal. As these tools incorporate Web-only inventory into the process, acceptance will also be easier. Helping fuel the boom are dramatic success stories that highlight the increased policy compliance

associated with self-booking implementations, leading to lower average ticket prices. Yes, we are about to "cross the chasm," but as Geoffrey Moore has often described, after the chasm comes the tornado.[23] Being inside the tornado puts a tremendous strain on suppliers, buyers, and implementers.

Pre-trip Authorizations

The market seems to have come full circle on the subject of pre-trip authorizations. Initially, the trend was to eliminate a paper-based process that proved to be nothing more than a rubber stamp. More recently, self-booking tool applications have embraced pre-trip authorizations with a new twist: integration with a workflow engine to send authorizations to managers based on specific business rules.

Decision Support

Most self-booking vendors have added or enhanced their reporting capabilities to provide a single view of not only self-booked reservations but also all trips booked through the designated travel agency. The Web-based reporting modules allow slicing and dicing of the information by corporate hierarchy, and some systems allow line managers to access reports. Another important new feature is the ability to track unused e-tickets and offer them as part of the booking process to the traveler.

Meeting Management

Historically, meeting attendance, whether internal or external, has been a major reason for business travel. For larger meetings, the process of registration and synchronization with the normal GDS booking process has been complicated. With the introduction of DirectMeetings,

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[23] Geoffrey Moore, The Chasm Group, www.chasmgroup.com/publications.htm

GetThere has triggered a trend to add meetings reservation and management to the self-booking process. Most of the suppliers interviewed for this study have announced either internal developed solutions or relationships with third party vendors such as B-There, seeUthere or StarCite to add meeting reservation and management capabilities to their products.

International Capabilities

Implementing self-booking technology outside the United States goes beyond language and currency features. Europe is not a single, homogeneous market, and despite liberalization each country has specific rules and processes that need to be taken into account when implementing any technology. Privacy laws are quite different than in the United States and may restrict the integration capabilities with ERP or HR systems. The relationship between the corporation, supplier, and travel agency may be more complex, and it varies by country and region.

Apart from localization (language, currency, and business process), a key functionality needed to compete outside the United States is a robust fare-quoting capability. Differences do exist across systems. Please refer to appendix B for a more detailed description of specific vendors' international capabilities.

Second-Generation Reservation Systems

A New Platform for Corporate Travel E-Business

The most exciting innovation in the self-booking and offline travel reservation world is the emergence of the new middleware platform for e-business. This trend will help bring together the offline and online worlds in a way that helps drive efficiencies and flexibility. The new infrastructure is essential to drive the market to the next level.

Planning-Based Systems and Recommended Itineraries

Calendar-based systems will again be a hot item over the next few months. A tool that automatically generates a set of suggested itineraries that match corporate policy and a traveler's personal preferences will be a major selling feature of a product that will launch in July 2002. Whether the traveler will accept recommended itineraries without going through the search process is yet unknown and may dictate the ultimate success of this approach.

Dynamic Travel Management

Integrating a sophisticated reasoning engine in front of the process and filtering information from the GDS (or other sources) to provide a weighted ranking of recommended itineraries still has merit to the industry. A major change occurred in business travel after September 11. More and more, each trip is now equated with specific business goals. An inference engine that evaluates a traveler's preferences, role, and trip purpose as a filter to recommend the best itinerary helps ensure that each itinerary matches overall corporate objectives.

Whether these approaches take hold or others emerge, there is a clear need to go beyond the basic "availability, price, and book" metaphor to help bring self-booking to the next level of market acceptance.

Consumer-like User-Interfaces

Online travel sites have invested heavily in designing a simple and efficient user interface. Corporate self-reservation applications have also strived to improve their user experience, but have been restrained by the dependence on traditional GDS fare quoting technology. With the emergence of Orbitz, the consumer has grown to expect a wide variety of fare choices on a single screen. The new independent middleware platform combined with the implementation of independent fare quoting software will enable corporate self-booking vendors to provide a more

grid-like display to the corporate user matching their consumer experience. This will be critical enhancement to enable the next level of user adoption.

Evaluating Corporate Technology

Business Relationships

Neutrality

Some buyers consider third-party neutrality an important selection criterion. This is not a black-and-white issue; neutrality comes in many different flavors. Some feel that non-GDS-owned solutions bring an ability to maintain an objective stance in the face of a changing technological landscape. Others feel more comfortable with a GDS-developed solution because of those systems' critical role in fulfilling and supporting the current travel reservation process. On the surface an ERP-based solution may appear independent, but it may also lock the buyer into a single-source solution. Again, this is not necessarily a negative point, as this dependence may fit well with a corporation's current IT strategy. There is also the issue of linking the self-booking application with a specific agency. An interesting market development is that many corporate agencies have actually positioned themselves as the primary integrator of self-booking technology in a vendor-neutral mode. Considering the market dominance of GetThere, e-Travel, Highwire, and Trip Manager, all solutions owned by the major GDSs, the issue of neutrality seems to have been overridden by market realities.

Market Position and Stability

As self-booking tools begin to enter the mainstream, smaller companies have either been acquired or emerged as larger entities, creating a number of viable choices. Questions such as how many corporate customers are using the product with what level of acceptance are still important, but the leaders described in this study clearly have established significant market presence to sustain continued growth. Associated with market presence is the question of

stability. Will the company be around to support and evolve this solution as the industry dynamics continue to change? GDS ownership has actually helped mitigate this issue.

Support

Support is the single most important factor that can cause a self-booking rollout to succeed or fail. In this context, support is multifaceted, involving the methodology used to manage the project, corporate system integration, and ongoing maintenance and technical support. Additionally, how the system integrates with the current agency GDS technology and agency backroom systems and how or whether it enables an integrated assisted e-commerce approach are essential elements that need to be considered.

Implementation

Implementing a self-booking tool is a major undertaking and thus requires project management. The roles of the supplier, agency, and corporate buyer must be clearly defined. Successful implementations of self-booking tools require detailed tracking of tasks that rivals that for other complex corporate implementations. As stated earlier, most of the large corporate agencies have repositioned themselves as project managers and system integrators for self-booking technology. Clearly defining who does what at the start, before the contract is signed, is important for a better understanding of the total cost of the product. Given the new fee-based environment, agencies may add specific charges for implementation services. Also to be considered are the costs associated with the time expended by corporate employees.

Corporate System Integration

Corporate system integration becomes even more essential as self-booking tools gain market acceptance and usage. HR downloads; e-mail compatibility, and integration with such tools as ERP-based workflow and decision support products are becoming a greater priority. The self-

booking system's capabilities as well as who is ultimately responsible for the integration are key implementation and support issues.

Integration becomes very complex if a company's policy and infrastructure are different across operating units. Even those companies that have standardized with a single ERP product may find that a given operating unit has implemented Oracle or SAP differently and thus requires a modified self-booking integration.

Ongoing Maintenance and Upgrades

As new versions come to market, ongoing maintenance and handling of upgrades become a hidden cost not always included in the evaluation process. Over the next 12 to 18 months the second wave of travel-planning software will begin to impact the market. Personalization software such as BroadVision[24] and behind-the-scenes itinerary-planning tools such as calendar-based planning will put pressure on self-booking vendors to enhance their current product lines. Technology companies constantly struggle to provide their installed base with the latest and greatest technology advancements. The cost and timing of these enhancements are important considerations in the TCO analysis.

Agency Relationship

Integration with GDS Technology

Regardless of whether or not you believe that direct supplier connectivity is the distribution model of the future, the reality today is that self-booking technology must integrate with the GDSs. The most critical area involves the reservation itself, in the form of the passenger name record (PNR), which is still the anchor of the travel process. Business travel is about change. Even if the initial

[24] BroadVision, www.broadvision.com

reservation is executed through little or no human agent intervention, a change may require a 24-hour service center's assistance. Therefore, a technology that enables the sharing of this information across the self-booking platform and agent desktop is essential. The technology deployed must work seamlessly with the current travel agent reservation process as well as the current automation platform.

Integration with Agency Systems

In a similar fashion, agency backroom systems, such as TravelBase, provide the basic foundation for most agency corporate reporting. This legacy technology requires specific remark fields to be placed in the reservation in order to capture the data needed for a company's management reports. Self-booking technology needs to work with midoffice software to ensure the accurate file finishing of every reservation and proper insertion of the correct PNR remarks.

Careful evaluation of the agency process should be part of a comprehensive self-booking selection. If using the tool adds additional time to the quality assurance (QA) process of the agency, part of the cost savings benefit may be lost. Here the focus needs to be on how the integration with mid-office QA software helps provide agentless PNR finishing techniques. For example, if a traveler books an itinerary and stores the record and then subsequently goes back and adds a car and hotel, the GDS pricing record may be corrupted, since it is based on segment positioning (i.e., a car segment now has been inserted as segment 2, and the flight has been bumped to segment 3). This apparently minor change can seriously affect the way the back office reads this information and the integrity of the client reports. Midoffice file finishing can catch this problem, provided it has the level of sophisticated programming needed to identify and correct this type of discrepancy.

Assisted E-Commerce

The last general consideration concerns the subject of assisted e-commerce. All the tools evaluated for this study can handle simple bookings, and most are maturing to handle more complex itineraries. In the near term a significant amount of volume may still need human intervention. A system that inserts the travel agent into the process at the point where the "shopping cart is abandoned" is critical in implementing a more comprehensive e-commerce strategy.

Many vendors and agencies have launched dedicated support centers for online booking assistance. To qualify as true assisted e-commerce, these centers must enable the call center agent's desktop to mirror the consumer online experience in a "super user" mode, allowing the agent to view the partially created booking, push content, and even take control of the browser to assist in completing the reservation. The ability to successfully execute a complete assisted e-commerce support service may hold the key to greater user adoption of any of the current self-booking tools.

International Capabilities

With the flurry of corporate acquisitions and mergers over the past 10 years, many travel management programs have expanded well beyond U.S. borders. Travel managers need to build on their international view of the world and look at self-booking technology in the context of a global rollout. The leading U.S.-based vendors are working to adapt their systems to international needs, while European vendors are bringing their products to the U.S. market.

There are two levels of international capabilities to consider: the user interface (UI) and the underlying engine. The UI needs to adapt to multiple languages and international formats (date, military time, etc.). This is a fairly straightforward process that has been implemented by many vendors.

The underlying engine presents a more complex issue. The self-booking engine needs to be able to price international itineraries (a complex task) and incorporate the use of net remittance fares, referred to as consolidator tickets in the United States. Despite the advancements in GDS technology, many complex international reservations are still done manually by skilled rate desk personnel. In addition, unlike U.S. travelers, European and Asian travelers commonly use net remittance fares for business travel. The price showed on such tickets does not represent the actual charge to the corporation. Displaying the correct price but ticketing the published fare is an important self-booking tool feature needed for the international marketplace. In some countries net remittance fares are stored in databases created by either the agency community or third parties, but in other countries special fares are still faxed to the agency and stored in binders. Dealing with this issue is complicated and requires tight integration with international business processes and agency partners.

Analysis Methodology

General Process and Conclusions

Travel Tech Consulting, Inc., conducted supplier interviews and received demos as well as gathered research from actual implementations of self-booking projects. This study is not designed to rate individual suppliers against a set of standard features or capabilities. No single supplier has the “best” product. Each has strengths and weaknesses. It is essential that corporate buyers evaluate travel technology based on how it matches corporate goals, IT infrastructure, and objectives. The true validation of supplier capabilities can only be achieved through implementation. Therefore it is recommended that the reader use the supplier evaluation responses contained in this study as a starting point of available features that need to be further validated through discussion with actual users of the product.

Benchmark Evaluation Criteria

Appendix B contains each self-booking supplier's responses to the supplier questionnaire. The questionnaires were updated for this April release. It is strongly recommended that the travel buyer, as part of a comprehensive evaluation process, conduct a more detailed evaluation. The suppliers' questionnaire contains the following nine broad categories.

Market Position and Adoption

This section describes the supplier's account base and adoption level and includes strategies employed to increase the use of self-booking technology.

Pricing

This consists of a general description of how the self-booking vendor prices its products and services.

Profile Management

The profile management section includes information on where the self-booking profile resides and how it interfaces with the GDS and corporate HR systems.

Integration with Corporate Systems

This section highlights the system's abilities to integrate with ERP, general ledger, HR, corporate e-mail, and expense management, as well as with third-party decision support technology.

Architecture

Architecture is significant in terms of the flexibility, reliability, and scalability of the solution. For example, the methodology by which the system interacts with the GDS can affect the speed and robustness of the information. In this category, the supplier's XML strategy is also explored.

Administration

Because these systems operate in an application service provider mode (the supplier houses the software and the client connects via a standard Web browser), the flexibility of the administrative module is important. This section includes the how the product handles corporate policy as well as vendor contract implementation and maintenance.

Functionality

Most buyers view functionality as a major decision point in choosing a self-booking vendor. In reality, all the major suppliers reviewed for this study have comparable functionality. In addition, due to the highly competitive nature of the market, specific product features that may be superior to those of the competition when introduced are generally added to competitive products in future releases. This section of the analysis explores the flexibility of reservation screens, the way the system handles negotiated rates, and its international capabilities.

Support

As previously discussed, support can be a tremendous hidden cost of implementation. This section reviews integration capabilities, training, and ongoing support, as well as the subject of PNR finishing.

Product Vision and Future Direction

The technology world often refers to “Internet time” as representing seven years of activity compressed into a one-year time frame. With the rapid changes in the travel industry and advancements in Web-based technology, a company’s strategic direction is an important evaluation criterion.

GDS Products

Amadeus's E-Travel

Background and Update

Amadeus's purchase of e-Travel in July 2001 signaled another shift in the market. Amadeus is a Madrid-based GDS provider. Air France, Iberia, and Lufthansa own the majority of shares in the company, with 40.08 percent held by the public.

Initially, the addition of e-Travel seemed simply to represent a way for Amadeus to gain a greater penetration of the U.S. market, complementing its existing corporate portfolio approach. At the time of my last update, Amadeus had three self-booking products on the market—SAP R/3 Travel Planning, Lotus Notes, and Amadeus Corporate Traveler—each with a slightly different corporate focus but with a primarily European presence. The biggest immediate change at Amadeus is one of internal structure, not product. In March of this year, Amadeus announced that it had merged all of its e-commerce activities into a new unit, called e-Travel. This includes Amadeus's leisure, direct supplier, and online initiatives. This organizational change has a significant impact on the market and in turn sets the stage for a common technological platform across both leisure and corporate products.

Market Position and Focus

In the near term the European product Amadeus Corporate Traveler has been rebranded and is now called Aergo Global. The former U.S.-based e-Travel product is now called Aergo U.S. The SAP product remains strong in Europe and is gaining customers in the United States. Amadeus has discontinued the Lotus product. In the supplier direct arena e-Travel provides the underlying booking capabilities for 34 airlines, including Air France, Iberia, and Qantas, as well as the recently launched European Orbitz-like site called Opodo.

What synergies does e-Travel hope to achieve by combining all its online initiatives under the e-Travel umbrella? As an explanation, e-Travel quotes recent information from Forrester Research, which states "36 million out of 54 million—or 67%—visitors to travel Web sites are employees who are surfing the Web during business hours." The integration of all Web-based reservation activities under the e-Travel brand addresses the very issue mentioned earlier in this study—that the leisure and corporate customer is one and the same. The experiences a customer has as a leisure consumer spill over to corporate booking behavior. As e-Travel launches its new integrated platform, the knowledge gained by this single organization focused on leisure, online, midmarket, and supplier direct will be applied to the new Aergo corporate platform. ***Architectural Changes and New Features***

The organizational change has set the stage for a significant structural change as well. Amadeus is working on a new common Java 2 Enterprise Edition (J2EE) framework that will support all the e-Travel products. This open, object-oriented, component-based architecture will allow multiple product lines to plug and play components for different customer segments, such as corporate (single), multi corporate/small-medium business, distributors, enterprise systems, suppliers, online, and agencies. This architecture is XML based, enabling flexible site setup and navigation, and it interfaces with external systems for profile synchronization (OTA standards) Aergo Global has an online tool-kit setup that enables site customization. More than 1,000 parameters are available, and inclusion of logos, change of colors, faring method, and other similar customization features are available.

The SAP Travel Planning product is the outgrowth of a joint development effort between the SAP and Amadeus. The product includes an auto creation and back-end feed of agency PNRs to the corporate database. This enables a global travel data consolidation from all booking sources. The SAP Travel Planning module is fully integrated with the SAP Travel and Expense System, which

is currently available with a large number of country-specific legal and tax compliant travel and entertainment packages.

Amadeus has also partnered with BroadVision to create an integrated travel commerce platform. The BroadVision platform gives dynamic portal functionality to the Amadeus portfolio of products by providing an individualized portal front end to the system. Aergo Global is the first corporate product to have full integration with the BroadVision platform, but as all the products migrate to the new J2EE platform, BroadVision integration will become available globally. BroadVision customers using the application for their internal portals will be the first likely target group for this integrated offering.

Analysis

The addition of the former e-Travel group strengthens Amadeus's U.S. presence. The integrated organizational structure will allow the new e-Travel unit to apply knowledge and technology across the multiple market segments, giving it a unique perspective.

SAP is a major provider of ERP systems worldwide. By embedding the Amadeus corporate booking function in the SAP platform, Amadeus has created a tightly integrated enterprise solution. For example, a travel plan is created in the SAP system regardless of where the travel transaction begins (self-booking tool, travel agency telephone call, or expense report through the expense management module). Amadeus will benefit from the influence SAP has in the corporate market. This influence may manifest itself in a recommendation from corporate senior management to use the SAP R/3 Travel Planning module as part of an overall SAP IT strategy.

Because of its former ownership by Oracle, Aergo U.S. has integrated Oracle functionality, such as workflow and decision support, into its booking engine. Aergo U.S.'s pre-trip approval application has had strong market acceptance, particularly with the downturn of the economy and

the impact of September 11. The company has continued to add more direct supplier links with Hertz, Pegasus, Amtrak, and National Car Rental.

E-Travel supports the Delta Airlines–introduced Mind Your Own Business Travel (MYOBTravel) Web site, using the Aergo U.S. booking engine to power the site. With Amadeus's owning 20 percent of ITA Software, e-Travel has integrated ITA into the MYOB site. Further integration of the ITA engine is likely across all the e-Travel product lines. The flexible use of XML and Extensible Stylesheet Language (XSL) allowed e-Travel to provide a highly customized Web interface for the MYOB site.

As the line continues to blur between corporate and leisure, the new e-Travel organizational structure and future integrated open platform will be able to respond quickly to changes in the market and cross-utilize functions and strategies to drive adoption of the Aergo Global and SAP R/3 Travel Planning products.

Galileo International's Highwire

Background and Update

In July 2001 Cendant purchased Highwire. Earlier last year, Highwire had grabbed the attention of the corporate travel industry by winning the Microsoft account. The company's corporate self-booking product, then called Travelport, was originally developed by Seattle-based Metropolitan Travel and deployed to the agency's corporate clients. In January 2000 Highwire was spun off as a separate entity and began beta testing. In March 2001 the company implemented the Microsoft account and signed strategic marketing partnerships with several large travel agencies and a major airline supplier. Galileo International had owned a minority share in the company.

At first it appeared that Cendant would be maintaining both Galileo's internally developed Corporate Travelpoint 2.0 and Travelport. After Cendant's acquisition of Galileo and Highwire, the new management decided that a single product would be sufficient to satisfy the multiple needs of the market. The new product, simply called Highwire, will incorporate some features of Corporate Travelpoint 2.0 but essentially represents an enhanced offering of the Travelport product rather than a melding of the two products.

Overall the impact of the Cendant acquisition of Galileo has been quite dramatic. The new management is taking a much more aggressive stance in the market and is changing its internal business practices as well. For example, at the recent PhoCusWright Travel Technology Conference, Mickey Lutz, Galileo's new CIO, stated that he was no longer willing to approve any internal development project with longer than a seven-month delivery cycle. This clear focus on quickly delivering innovation is a common theme of the new Galileo organization. Lutz went on to describe how Galileo is embracing the Web services concept and transforming its architecture to a more open systems environment.

Market Position and Focus

Despite prominent wins with companies such as IBM and Visa International, Galileo's Corporate Travelpoint 2.0 had not achieved significant market traction. In contrast, Highwire was quick to build, deploy, and capture significant market share. Initially, Highwire focused on the mid-sized corporate market. The company's success with Microsoft, combined with another strategic win with Deloitte and Touche,[25] catapulted this new entry into the spotlight. Highwire demonstrated a combination of innovation and nimbleness. The innovation comes in the form of a flexible, integrated platform that combines a robust booking engine with a multifaceted portal. The nimbleness afforded by being a small company allowed Highwire to customize its solution quickly to meet the needs of both large and small customers. Given the equally aggressive and innovative style of Cendant, it is easy to understand why the decision was made to move to a single platform. Galileo has also reached an agreement with KDS to private-label the KDS corporate product in Europe under the new Special Agent brand.

Architectural Changes and New Features

The new open systems approach discussed by Mickey Lutz will likely impact the Highwire product in future releases as a common Web services architecture is deployed between the application and the GDS host. Further information on this new architecture was not available at the time of this update.

Both Corporate TravelPoint 2.0 and Highwire were built on XML Select, the common application interface from Galileo. The foundation of the single Galileo offering is still Highwire, but key functionality from Corporate TravelPoint 2.0 will be added, such as the Quick-Step Wizard

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[25] "Cos. Consider Sabre Alternatives in Face of Added Fees," *Business Travel News,* June 25, 2001, www.btnonline.com/db_area/archives/2001/06/01062517.htm

interface, which offers a "best-fit" itinerary based on policy, profile, and preferences. This allows Highwire to offer three unique user interfaces that can be customized to fit particular clients' needs. In addition to the Quick-Step Wizard, Highwire's prepackaged option presents multiple itineraries without the selection of individual segments, while segment-by-segment interface allows travelers to select multiple journey legs.

Galileo's XML Select product takes advantage of the structured data calls inherent in this GDS middleware platform. Structured data has allowed Highwire to communicate more efficiently by retrieving a greater number of responses with a smaller number of calls to the GDS. Traditional GDS fare-shopping technology delivers a limited number of best-fare options, generally forcing the user to shop by individual legs and then price the itinerary to obtain his or her desired schedule.

The booking engine is built on Microsoft's latest technology and is operated in an application service provider (ASP) mode. Highwire's infrastructure also allows travelers to conduct transactions easily through a PC, cell phone, or hand-held computer. Highwire intends to leverage this architecture to extend the product to a wide variety of customer-contact devices.

Highwire's unique portal approach is built with Java and uses the Site2 software development platform, which enables the tracking of individual behavior and the matching of preferences to customized content. One important architectural difference of the Highwire portal is its component architecture. This allows elements of the portal to be easily integrated into existing corporate intranet Web sites, allowing the Highwire portal to work with the standard corporate interface, if desired by the client. This feature is an important one that helps bring travel portal technology into the mainstream enterprise framework.

Highwire includes its own finishing tool that helps complete records without human intervention and uses a single sign-on approach to simplify interaction. The product has a flexible profile

structure that can either act as the master profile record that feeds the GDS (for reservation creation) or be synchronized with agency proprietary profile systems. This open architecture also allows easier integration with corporate HR databases.

In addition to its open, component-based architecture, the Highwire portal contains customizable areas for each of the four travel stakeholders—the traveler, the corporation, the core supplier, and the agency. The corporation and traveler sections are present in most agency-sponsored portals, but the inclusion of direct supplier input and the underlying personalization technology have broad implications for the market. In this sense the portal can be viewed as a front end to the booking engine rather than a home page. Highwire's portal technology allows the supplier representative to promote specific content to targeted individuals in the corporation with the blessing of the corporate travel manager. What this really means is a true one-to-one marketing capability to assist both supplier and corporate goals. The individual portal Web pages are generated dynamically, customized to individual travelers. Highwire is providing one of the first examples of a CRM platform for the corporate market. The travel agency is equally represented on this individualized portal page and can offer leisure specials or extend special customer service opportunities to the individual traveler.

Galileo's Project Data Store is still in development. The goal of Project Data Store is to create a common framework to allow a more effective customer service approach online and through Galileo-powered agencies. The moving of profile information off the mainframe represents a significant shift in GDS strategy and could provide the platform for enhanced CRM activities by the suppliers who ultimately foot the bill for GDS technology.

In February 2002 Galileo International announced the delivery of a new GlobalFares database built on a Unix-based platform. This announcement reflected the previously cited trend of shifting processing off of costly mainframe systems to a more open, flexible, lower-cost, server-based technology. One aspect of this shift in fare platform also involved the complete automation of the

ATPCO fares and rules transfer. The traditional manual lag in uploading all ATPCO fares and rules was one of the technological obstacles to timely GDS access to Web-only inventory. Of course, the bigger business issue of permission to display and ticket Web-only inventory remains. Like all of its competitors, Highwire is investigating interim solutions using robotic Web search engines for Web-only fare integration.

Analysis

The acquisition of Galileo by Cendant has represented a new era for the GDS. The emergence of Highwire as the single corporate booking solution will allow the more aggressive Cendant a single more focused approach to the market. The changes internally at Galileo are both cultural and technological. I anticipate major innovations from both Galileo and Highwire over the next 12 to 18 months as projects are streamlined and the infrastructure is converted to a more innovative open architecture.

GetThere, a Sabre Company

Background and Update

GetThere evolved from a small start-up to become the leading provider of both corporate self-booking tools and supplier booking engines. Its first corporate installation was completed in the mid-1990s, enabling GetThere to evolve its product dynamically to meet corporate buyers' needs. Its successful IPO in 1999 provided additional capital for expansion of its engineering resources, executive management, and overall infrastructure. In the fall of 2000 the self-booking world was turned upside down when Sabre, the largest GDS and the marketer of the second leading self-booking product, BTS, acquired GetThere.

In September 1999 GetThere formed a strategic partnership with the largest travel management company, American Express. This relationship resulted in a private-label version of DirectCorporate, called Corporate Travel Online.

No company has been watched more closely or has been under greater attack by both competitors and customers than GetThere. Despite this pressure, GetThere has continued to dominate the market and innovate its product, driving toward a dramatic new platform. Sabre has had little direct influence over GetThere's strategic direction. Ironically, though GetThere was the company that was acquired, the major challenge over the last 18 months has been servicing the BTS client base while continuing to enhance the core DirectCorporate product. The company is now in the third part of its life cycle; it has matured from small start-up to fast-growing dot-com wonder to its current position—settling in as the dominant market player. According to the recent PhoCusWright online corporate travel report, GetThere holds a dominant 61.3 percent share of the corporate online market.[26]

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[26] Susan Steinbrink, *The PhoCusWright Report: Online Corporate Travel 2001–2003* 2002).

Market Position and Focus

GetThere has two primary customer bases: supplier booking engines (DirectAirline) and corporate travel self-booking tools (DirectCorporate). GetThere provides booking capabilities for Air New Zealand, Alitalia, All Nippon Airways, America West Airlines, Northwest Airlines, and United Airlines. Hundreds of corporations, including Cisco Systems and Xerox, use GetThere's DirectCorporate self-booking tool. With this established base of buyers and sellers it is easy to understand the driving forces behind the GetThere Marketplace initiative. The strategy is to use this connectivity to allow buyers to connect directly with their large suppliers. Forty suppliers have signed up to participate in the GetThere Marketplace.

In 2000 GetThere acquired the ATS faring engine and AllMeetings Corporation (DirectMeetings). Both products have been added to enhance the functionality and offering of the DirectCorporate solution.

Architectural Changes and New Features

The company has completed most of the enhancements to DirectCorporate for the migration path for its BTS account base. The most significant added function is the ability to change reservations online.

For this update GetThere provided a demonstration of its next-generation integrated direct connect platform. This new product represents a dramatic shift in both the underlying architecture of DirectCorporate and the related features. The architectural change involves a move to a more open J2EE platform with a robust middleware layer that allows the integration of multiple GDS, direct connection, and Web-only inventory into a single display. The demonstration showed the first glimpse of the ATS faring engine, which was able to produce a grid-style display (reminiscent of the Orbitz-style ITA Software grid), allowing the user to sort by number of stops and other criteria. Web-only and supplier direct inventory were seamlessly integrated into the single display.

This new architecture represents the fulfillment of the Marketplace theme launched by GetThere in 2000. GetThere is using OTA XML schemas for direct connections with two undisclosed hotel chains. These will involve connections right into the hotel central reservation system (CRS) rather than going through Pegasus. The airline direct connect strategy preempts the OTA standards and thus involves GetThere's own customized XML interface. Given GetThere's work on the supplier direct side of the business, it is clear that the company has benefited from its familiarity with the airline CRS as it created its new direct connection capabilities. The company recently announced a direct link with American Airlines.

Analysis

DirectCorporate's major strength continues to be flexibility. The company was founded on a history that involved customized programming. The product was actually modified for early Internet Travel Network clients based on their specific requirements. Custom programming works well for a small start-up, but as GetThere grew, this flexible approach has evolved into something closer to a mass customization strategy. GetThere demonstrated an administrative module that allows hundreds of customized elements. In this way GetThere now offers a variety of options for its booking interface, much as Dell Computer allows you to "build your own system online." For many years GetThere has successfully combined multiple GDS data into a single availability response, combining, for example, a Southwest booking through Sabre with a Galileo PNR. This capability is significant as it demonstrates how GetThere has been using the GDSs as a data source for some time.

GetThere's new integrated direct connect platform is the realization of its two-year effort to directly connect its top airlines, hotels, and car rental companies in a business-to-business Internet travel marketplace. GetThere believes that providing suppliers with a lower-cost distribution technology will encourage suppliers to open up their Web-only marketing efforts to the GetThere client base. This is an as yet unproven premise, and as an interim step GetThere will

be partnering with an unnamed Web search engine to robotically extract Web-only inventory into its integrated direct connect platform.

Worldspan's Trip Manager

Background and Update

In September 1999 Worldspan purchased the source code for TRX's ResAssist, which was the foundation for the company's Trip Manager product. By owning the source code, Worldspan has been able to enhance Trip Manager's functionality and differentiate it from the competition. Prior to this purchase Worldspan faced a challenge in which all modifications required the involvement of TRX. With the source code in hand, Worldspan has integrated Trip Manager with its other Internet offerings to provide a more comprehensive solution to the market.

In 2001 Worldspan launched a revised version of Trip Manager that showcased new functionality that was a direct result of this internal development. Beginning in late 2001 and early 2002 the Atlanta-based GDS began an aggressive effort to increase its market share in the corporate self-reservation market. Part of this new effort was a shift from dependence on agency distributors to a more direct corporate sales approach.

Market Position and Focus

Worldspan has gained a reputation as an aggressive and nimble competitor. Through its Worldspan Wired initiative, the company became an early pioneer of Web-enabled travel e-commerce. The Worldspan engine is the backbone for a number of high-profile travel Web sites, including Expedia, Priceline, and Orbitz. This experience in the consumer online market has provided the Worldspan management team with valuable insight into the behavior of the online travel buyer.

In the context of the corporate market, the purchase of the ResAssist code signified a definite shift in strategy. A significant amount of energy and resources has been put behind Trip Manager to create a unique, differentiated product. As a result, Trip Manager can no longer be considered a "me-too" private-branded offering but has emerged as a distinct product. This shift is significant

and demonstrates the company's commitment to the corporate market. In repositioning Trip Manager, Worldspan has added a sharper focus to the entire selling and support process to maximize the impact of Trip Manager's online tools on each corporate customer's bottom line.

Architectural Changes and New Features

The new Trip Manager interface introduced in July 2001 uses the Business Objects Services System (BOSS) architecture. The company has cited a 20 percent increase in operational efficiency since it updated the underlying code that interfaces with the host mainframe. The new interface provides a more dynamic approach to travel planning, with fewer screens needed to complete an itinerary. The primary emphasis of this new release is on traveler efficiency, reducing the time needed to complete a reservation. Other interface enhancements include the following:

- Immediate notification about new information on the Daily Briefing page upon login
- Convenient access to traveler profiles and past trips
- Flexibility to view current itinerary as it is being built
- Pre-trip approval functionality

When Worldspan obtained the ResAssist source code, it focused on completely separating the transaction layer from the presentation so that a new user interface could be implemented. Trip Manager's BOSS architecture separates the Trip Manager presentation layer from the Trip Manager business logic. This architectural change allows other applications access to Trip Manager's business logic, such as contract pricing, policy rules, seat maps, and so on. This new type of multi-tiered software architecture has enabled Worldspan to add new functionality:

- Easier and more robust private labels
- Architecture for multi-language
- Easier and faster product enhancements

- Ability to take advantage of development such as Worldspan on the Web and wireless
- Improved product reliability, scalability, and capacity
- Code reuse
- Incorporation of new developments such as itinerary via the Web

This new architecture affords Worldspan a greater degree of flexibility, enabling it to roll out new enhancements to Trip Manager every month rather than in quarterly releases. Worldspan is taking a portal design approach to the user interface by tying in destination information, itinerary access, and reporting to an integrated single Web address.

A new middleware layer will be implemented soon using an established third-party platform. Once this is added, Trip Manager will have the same multi-tier architecture as other products described in this summary, allowing it to access multiple GDSs. Worldspan is evaluating various third-party vendors to enable access of Web-only inventory as well as pursuing a more direct interface with ATPCO information.

Analysis

Worldspan has clearly taken charge of Trip Manager's destiny and is aggressively marketing it. Given the strong position the company holds in the Internet travel marketplace, Worldspan is able to benefit from lessons learned through working with such successful sites as Expedia, Priceline, and Orbitz. As the GDSs become unbundled, Worldspan has recognized the importance of middleware technology. Worldspan's work supporting Orbitz demonstrates the company's flexibility and willingness to redefine its role in the travel process. Despite initial rhetoric regarding direct connections to its owner airlines, Orbitz recently signed a 10-year agreement with Worldspan, demonstrating the value of its partnership. Worldspan's GDS profile and the Trip Manager profile are completely synchronized, ensuring that the Worldspan call center agent and the traveler have the most up-to-date, accurate information. Other major enhancements include a

new hotel module that allows corporations to assign priority numbers for preferred hotels, to deactivate contracts without removing hotels from the system and then reactivate them when desired, and to choose whether to see the list of hotels with available rooms or to see all hotels regardless of availability. In addition, a new coin graphic on the hotel list was added to indicate rate ranges for properties without contracted rates.

Worldspan's new aggressive direct corporate bottom-line approach has been highly successful, with a number of new corporate clients added during the first quarter. In addition these new direct corporate customers have achieved a significantly higher degree of adoption of Trip Manager (versus prior distributor-driven contracts), as Worldspan assumes the role of strategic consultant with a single-minded focus to drive increased adoption.

Third-Party Vendors

KDS Corporate

Background and Update

Klee Data System (KDS) is a European IT consulting services and advanced technology development firm. Founded in Paris in 1994, KDS began development of a corporate self-booking engine in 1996. The company has grown to be one of the major self-booking vendors in Europe, forging alliances with Galileo and Carlson Wagonlit Travel. The recently announced Galileo agreement positions KDS as the pan-European solution for Galileo.

Market Position and Focus

KDS Corporate has been successfully deployed to more than 500 companies in 11 countries—France, Norway, Sweden, Denmark, the United Kingdom, Switzerland, Belgium, the United States, Italy, Japan, and Australia—making KDS one of the leading suppliers of self-booking products outside the United States.

In November 2000 Carlson Wagonlit announced that it was investing in KDS, taking a 14 percent share of the company and signing a nonexclusive contract for the distribution of KDS Corporate. In 2001 KDS hired a new vice president of sales for North America, signaling a dedicated marketing effort in the United States.

Architectural Changes and New Features

From the beginning the KDS technology was built on an open multi-tiered architecture. This is of note as much of what is discussed in this document as the “latest trend” in middleware development was actually part of the KDS Corporate product’s initial design. A key advantage of the KDS middleware technology is that it creates an important flexible layer between the inflexible transaction engine and the business rules that are needed to drive a self-booking engine. The

business logic layer is an important factor, as an increasing amount of non-GDS information becomes part of the transaction. By deploying different tiers that separate the Web server, the business logic layer, and the data services layer, KDS Corporate is more scalable and flexible. KDS Corporate uses multithreaded parallel processing, which allows simultaneous communication to the GDS host. This increases the speed of the communication by providing multiple responses to a single query. KDS is now going beyond this initial architectural advantage to fully implement Web services standards (XML, SOAP, WSDL, and UDDI). This further embracement of open standards gives the KDS Corporate product added flexibility for integration with internal and external systems.

KDS Corporate has its own fare-quoting engine, but it has a different approach from other initiatives such as ITA Software and the new GetThere faring engine. The KDS Corporate faring product can best be described as a meta–faring engine: it extracts rules from multiple sources (for example, GDSs, Swissair, and private rules) and applies a master set of business logic against a given itinerary. Rather than replacing the faring capabilities of the GDSs, KDS has chosen to extract the best elements of the GDS faring technology in a flexible, open, integrated approach. To refine its fare-quoting technology further, KDS works with ATPCO and Unisys and is an active member of the Standard Dataset for the Exchange of Net Rates (StaDaF), a European standards initiative that is driving standards in the exchange of net rates.

The KDS Corporate middleware enables communication with multiple GDSs, direct supplier links, personal databases, and corporate systems. KDS Corporate currently has direct links with the train providers EuroStar, U.K. Rail, Deutsche Bahn, and Amtrak and with the car rental suppliers Avis and Europcar. It is working on new direct connections with hotel suppliers as well. To handle the Web-only fare challenge, KDS is implementing its own Web search technology to incorporate European low-cost carriers such as Easyjet and Ryanair as well as U.S.-based mega sites such as Expedia and Orbitz.

Because of its European roots, KDS Corporate has a number of localization features. Two examples are KDS Corporate's rail-booking functionality and the system's ability to handle net remittance fares. To capture short, recurrent trips in Europe, a rail-booking capability is essential—a functionality still not available in many of the U.S.-based products. KDS's rail-booking capability is seamlessly integrated into the availability. Net remittance fares are similar to consolidator fares in the United States, with the exception that in many countries these fares are actually part of the corporate negotiation process. Since the true cost of the ticket does not correspond to the fare quote in the GDS, presenting the correct value in the self-booking tool and on the ticket presents a challenge to many self-booking products. Net remittance fares are the standard for business travel in Europe, Asia, and Australia, and this capability gives KDS Corporate a competitive advantage.

KDS Corporate's Live Agent allows the travel agent to connect simultaneously with the online user, enabling the agent to collaborate with the user and drive or push content. The travel agent can mirror the corporate user's online experience in a "super user" mode, allowing the agent to view the partially created bookings, push content, and even take control of the browser to assist in completing the reservation. This ability to successfully execute a complete assisted e-commerce framework may hold the key to greater user adoption of KDS Corporate as a corporate self-booking solution.

KDS Corporate also applies policy rules on a situational basis dependent on the business objective of the trip. In this way travel is more closely aligned with corporate objectives. The system also uses past itinerary choices to anticipate hotel and car preferences, simplifying the reservation process.

Analysis

KDS Travel is part of the Klee Data Group, an IT consulting services and advanced information system design company. This strong technological foundation makes KDS Corporate one of the more advanced self-booking platforms. For it to succeed in the market, further alliances are needed. As of this writing KDS is exploring a relationship with major enterprise software vendors that could lead to additional market strength. An example of this type of strategy is the recent announcement regarding a strategic partnership with Ariba. The added expertise and staff in the United States has made KDS a viable competitor, particularly for those companies wishing to standardize on a single global tool. The idea of using past itinerary information to anticipate and influence reservation options is an important development. As all self-booking vendors drive to increase adoption, having a tool that remembers preferences and uses that information to accelerate the booking process is an important capability that they will all need to implement.

i:FAO

Background and Update

i:FAO is a German Internet software developer that provides technology for the booking and management of corporate travel. The company originally grew out of a well-established 23-year-old German travel agency, FAO. i:FAO launched its first Internet travel-booking engine in 1997 in conjunction with Siemens Corporation. In 1999 i:FAO executed a successful IPO and opened North American offices in Detroit. In August 2000 i:FAO purchased the San Ramon, California–based QuixData, a data-mining software company.

2001 saw further U.S. acquisitions as i:FAO purchased PowerTrip from XOL. This purchase included the account base and some personnel. With the acquisition of PowerTrip, i:FAO has emerged as a major player in the U.S. market.

Market Position and Focus

Since it was founded in the late 1990s, i:FAO's main focus has been in Europe. With the addition of the PowerTrip account base the company now has over 1,300 corporations using its products. Cytric is the company's solution for larger businesses, while PowerTrip is geared toward the midmarket. The company has a significant European presence, with hundreds of customers using its Cytric booking system in over 10 countries. The company has positioned Cytric as a travel e-procurement solution. i:FAO's initial emphasis was on enabling travel agencies to add value in the new electronic booking environment with a focus on achieving sustainable reductions in agency costs. In fact, the primary selling strategy of i:FAO continues to be through distribution. In addition to travel agencies, i:FAO has a strategic relationship with Siemens Corporation, which resells the i:FAO solution directly to corporations. In Europe i:FAO has partnered with travel management firms such as American Express, using the Cytric self-booking technology to complement traditional agency services. Cytric has also been positioned as a communications

tool that allows travel managers to broadcast key messages to selected groups of travelers based on travel patterns or organizational level.

Architectural Changes and New Features

With the release of Cytric v7 i:FAO introduced an enterprise-class infrastructure based on a multitier architecture. Cytric v7 is entirely written in Java using the Enterprise Java Beans framework. This enables the product to run on Red Hat's Linux, Microsoft's Windows 2000, or Sun's Solaris Operating Systems on Intel or Sun hardware using an Oracle database. Cytric v7 uses the BEA Weblogic application server. This new architecture provides greater scalability and security features. Integration with the other enterprise applications is simplified using Cytric's XML APIs.

As a prominent European vendor, Cytric has multi-language and multicultural capabilities already built into the system. Currently the system supports 14 languages and 180 currencies. Cytric also has rail-booking capabilities. The purchase of QuixData has incorporated management reporting functionality with the i:FAO booking engine to provide online decision support solution. The goal here is to affect purchasing behavior by bringing key decision support information to the point of sale. This includes extracting pre-travel information to be used as electronic authorizations (passive or active), enabling managers to better measure the impact of a trip prior to the expense.

In 2001 i:FAO announced the purchase of Iconomic Systems, a firm that specializes in “reality user interfaces.” As a result i:FAO has introduced a new user interface called Reality based on the Iconomic Systems technology. When destination information is entered, the Reality interface extracts the complete set of available fares and rules for that itinerary and loads it into the application on the desktop. The user can then manipulate the information, looking at different views based on a variety of parameters. This mirrors the consumer shopping experience and provides complete flexibility regarding fare choices. The user may also opt to access a map

interface as the driver of the itinerary process. If city pairs are entered directly into the system, the map interface graphically displays the itinerary as it is being built.

Analysis

With the purchase of the PowerTrip account base and the incorporation of the Iconomic Systems technology into the new Cytric platform, i:FAO is making a strong push in the U.S. market. The new platform is built on an open, flexible enterprise-level architecture. The introduction of the new Cytric platform will help push forward the industry's focus on innovation.

Outtask

Background and Update

Outtask is an established business service provider (BSP) based in Alexandria, Virginia. The growth of BSPs is a major trend that took off in early 2000 as companies accelerated their strategy to outsource noncore functions. BSPs offer companies a broad range of applications without their having to invest in either the staffing or the infrastructure to support them. Information technology departments are adding BSPs to their outsourcing options to purchase quickly fill departmental needs for point products such as special travel and expense reports.[27] Most BSPs are early adopters of Web services technology, which supports this new open way to provide applications remotely.

With the acquisition of Vinnet in late 1999, Outtask gained a foothold in the expense management marketplace. As a full-service BSP, Outtask offers a variety of business applications in one integrated offering. These applications include CRM, executive productivity, financial and human resource management, MS Exchange messaging, professional services, and sales force automation as well as travel and expense management. Outtask has developed a new self-booking engine, Cliqbook, which was released in the third quarter of 2001.

Market Position and Focus

Outtask has the benefit of an established customer base for both its expense management solution and its other BSP applications. To distribute its self-booking solution Outtask is working with key travel agencies as well as making a direct sales effort. Outtask offers its portfolio of BSP

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[27] "Service Providers Give Users More IT Options," *Computerworld,* February 7, 2000, www.computerworld.com/cwi/story/0,1199,NAV47_STO41175,00.html

applications to small to mid market companies, while its travel and entertainment solutions are targeted at larger corporations.

Outtask recently surprised the industry by claiming first-mover advantage by offering an integrated solution to Web-only fares and rates. Other products had already incorporated Web-only fares in an availability display, but Outtask took the functionality one step further by creating a platform that allows corporate clients to see and book Web-only inventory within the context of overall business rules and policies. Web-only fares are booked directly with the supplier or retailer site, but the advantage of the Outtask approach is the overriding customizable business logic that interprets the Web-only fares within the context of overall corporate travel policy goals. This information is then fed into the Cliqbook decision support system, giving the travel manager the ability to evaluate the impact of Web-only pricing.

Architectural Changes and New Features

The Outtask self-booking solution is built on top of Galileo's XML Select middleware, allowing access to structured data calls. The application itself utilizes the Microsoft. architecture, making extensive use of standard communication facilities. This provides a scalable platform for the development of travel and other Outtask services. Outtask has also added a more sophisticated middleware layer for communication with multiple GDSs and other information sources. This new platform is the foundation that allows Cliqbook to seamlessly incorporate Web-only fares into a single display governed by the overriding corporate business rules. The company is an early adopter of the Microsoft .NET multi-tier-architecture Web services platform, which has enabled greater flexibility and scalability.

Analysis

The integration of expense management software and self-booking tools has been overly hyped over the years. The focus traditionally has been twofold. The first involves a handoff of

information from self-booking to expense management systems to pre-populate the report. The second involves the integration with expense management workflow engines to provide pre-trip authorization capabilities. Pre-population has proven to be problematic, as booked information often does not agree with actual expensed items. Despite pre-population, expense management applications continue to require the user to reconcile charge card information manually, and as a result vendors have found little value in the self-booking export functionality. Pre-trip authorization has proven effective and, as previously stated, has emerged as an important new self-booking feature. The enterprise component architecture that is the underpinning of Vinnet is also part of the Cliqbook travel management solution. This architecture simplifies the often-expensive need for custom HR and/or ERP integration. Outtask has broad experience integrating with major enterprise applications such as SAP, PeopleSoft, Oracle, and Great Plains software.

Outtask's self-booking product also begins with a fresh approach to booking, using a map interface. The map avoids the usual fill-in-the-city approach and helps simplify the process for a new user. The recent announcement of an agreement with StarCite adds meeting functionality to the product as well.

The Outtask product suite is designed to manage the entire end-to-end travel process. Outtask's entry into the self-booking fray represents an important development. Smaller and more nimble companies such as Outtask can continue to develop solutions and execute quickly, driving further innovation in the marketplace. It is my belief that Web-only integration will become a standard feature of self-booking and agent POS systems over the next 8 to 12 months. Through its ability to quickly build and execute a solution, Outtask has taken a leadership position in this area that the other vendors must now follow. In addition, Outtask's use of its existing expense management connectivity modules may signal a new and important type of interaction between these two applications, prompting other and more extensive marriages between the two software categories.

TRX

Background and Update

In 1999 a new company, TRX, was created, combining Travel Technologies Group (TTG), International Software Products, and Online Fulfillment Services. TTG was a pioneer of electronic booking systems. ResAssist began as a Windows-based booking tool for frequent travelers, with software loaded on each individual's computer. This early version had one of the industry's first user-friendly GDS interfaces. As the automated booking tool market matured, ResAssist continued to change, first moving to a more server-centric architecture and then migrating to a Web-based user interface. During this development, TTG created a complex middleware layer of business rules and logic to help speed the reservation process and better incorporate user and corporate preferences.

Over the past two years TRX has solidified its role as a technology enabler. The company still maintains a limited direct corporate sales channel but has strategically moved away from that approach as its primary focus. As a technology enabler, TRX generally shifts implementation and support costs to the distribution partners, allowing a greater focus on product strategy and innovation. TRX's success with its quality assurance product EnCoRRe (with sales to American Express, Rosenbluth International, and others) has reinforced its position as a major supplier of infrastructure tools for the entire industry. TRX's role in online fulfillment for mega sites such as Expedia has sharpened the company's focus on the tools needed to operate an e-support center. In its drive for constant innovation, last year TRX embarked upon a comprehensive reengineering effort to change the underlying infrastructure of its ResAssist product as well as building the platform for the new agency POS product called Trinity.

Market Position and Focus

With the creation of TRX, WorldTravel BTI (WTBTI) has successfully separated its technology development group from its agency services. The bond between TRX and WTBTI still exists, as the two companies have common ownership, but the key difference is in how the two organizations behave. As a separate entity TRX is actively marketing its travel technology solutions to corporations, online travel companies, and other agencies.

As its name implies, TRX is both a technology supplier and a transaction processor. In fact, TRX represents one of the most successful examples of an ASP as well as a traditional outsourced fulfillment center. Its pioneering work supporting Expedia paved the way for the current trend toward low cost e-fulfillment centers.

Part of the strength of ResAssist's self-booking product lies in its ability to integrate with other TRX technologies such as ProfileSync and EnCoRRe. The creation of TRX and the appointment of a new Web-savvy CEO helped better position the former TTG to compete as an independent solution provider.

Architectural Changes and New Features

The newly reengineered TRX middleware platform takes advantage of emerging OTA and Web services standards. Like other initiatives mentioned in this study, this new middleware platform is designed to completely remove direct dependence on a single GDS, providing an open infrastructure for the seamless integration of Web-only inventory and direct supplier connections. The technology uses the Microsoft .NET tool set to create a multitiered environment that separates out the communication, business logic, and transaction layers. The goal is to provide a platform that delivers a lower distribution cost to suppliers and provides an integrated solution to user applications. The key differentiating point of this effort is that the same technology strategy is being applied to the new ResAssist self-booking tool and the new POS application for the call center travel agent.

As GDSs unbundle their technology, TRX is well positioned to use its new middleware infrastructure as an important open platform for its agency and supplier client base. Similar to other middleware solutions, the GDS becomes one among several data sources rather than a single source for the ResAssist and Trinity platform, enabling the next-generation self-booking tool and new agency POS applications.

During the July 2001 update ResAssist was the only vendor evaluated that included Internet fares in an availability display. Though booking capabilities were not yet implemented, the inclusion of Internet fares helped lessen the desire of the user to shop the Web for better deals.

Another advanced feature in a recent update of ResAssist is that it allows corporate management to put in the hourly cost of an employee's time as a policy filter. This helps take into account the value of the employee as a factor in defining the lowest fare. The application also uses historical trip information as a way to measure the traveler's willingness to accept penalties. The frequency of changes influences whether penalty fares are included in the availability display. Both these functions signal a broader strategy to use ResAssist's business logic and policy filters to remove undesired options before presenting trip alternatives and fares to the traveler. ResAssist trip options represent real-time seat availability, allowing travelers to make reservations based on seats and rates actually available.

TRX combines a suite of products to offer a more comprehensive self-booking solution. There are three components to the product suite: ResAssist, EnCoRRe, and ProfileSync. These three products together help alleviate some of the shortcomings previously mentioned, providing support for a self-booking reservation system.

ResAssist. ResAssist was one of the first self-booking products, and as a result its interface and functionality have been modified and improved over subsequent releases. The platform works

over multiple GDSs and is designed to support direct supplier connections (specific direct connection partners have not been released publicly).

EnCoRRe. EnCoRRe is TRX's latest version of its mid-office quality assurance software. EnCoRRe represents a departure from the limited PC-based approach of most mid-office products to a more industrial strength open systems environment. EnCoRRe incorporates both the standard CoRRe routines and the open-ended PowerCoRRe functionality. It is with the use of this PowerCoRRe functionality that TRX can provide a complex file-finishing capability. For example, TRX has programmed PowerCoRRe routines capable of handling the car and hotel post-self-booking scenario described earlier in this document. Human intervention is necessary only when a record is kicked out by the system because of unusual or special circumstances. These types of savings have a direct bearing on the TCO of a self-booking purchase.

ProfileSync. TRX's ProfileSync technology creates a separate profile in an Oracle database that not only is used to populate online reservations with ResAssist but also serves as the central platform for integration with multiple GDSs, corporate systems (ERP, GL), and expense management products.

TRX has also developed a product called DataBridge that enables communication with corporate systems in either a batch or real-time mode. DataBridge supports the major ERP systems, and TRX will add custom interfaces as needed

Analysis

With strong relationships with traditional and Internet travel agencies and suppliers, TRX is well positioned to push the market to the next-generation infrastructure needed for a more robust integrated self-booking tool. The company's progressive approach to Internet fares combined with its new middleware platform provides the underpinnings for a new product design. The ResAssist interface will be completely redesigned with consulting assistance from a prominent Web design

firm. The new product promises to push the industry to the next level of functionality and design. By using the same open infrastructure for their self-service reservation application and agency POS system, TRX is providing the underpinnings for a more complete online travel management solution.

Datalex's Yatra

Background and Update

Yatra was founded in 1998 by a group of experienced corporate travel executives and technologists with the mission to build a next-generation electronic travel management solution. On November 14, 2000, Datalex, a major supplier of e-business infrastructure and solutions for the global travel industry, announced an $11 million investment in Yatra, acquiring 50 percent of the company. The agreement was structured to allow Yatra to offer its solution to travel agents and corporations, while Datalex would provide the corporate booking tools to third parties, such as airlines and other suppliers. The agreement created an interesting partnership, bringing this innovative technology to all sectors of the industry. Earlier this year Datalex acquired the remaining shares of Yatra and the company is now entirely owned by Datalex.

Yatra's patent-pending technology, Cognizer, is a rules-based reasoning engine that can mesh more than 50 factors at the time of booking to produce itineraries that vary depending on the type of traveler and the purpose of the trip. Cognizer can also weigh itineraries based on a comparison of traveler profiles and corporate policies.

Market Position and Focus

The Yatra solution focuses on all the stakeholders involved in the travel process: the traveler, arranger, corporate manager, agency, and supplier. The system allows for dynamic policy enforcement, recognizing that policy may need to change depending on a number of factors. These include not only the traveler's position in the corporation but also his or her role in the company, as well as the business reasons for the trip. Initially, Yatra has concentrated on the mid-market, selling through large regional travel agencies. This has given it a base of approximately 50 corporations in the beginning stages of the setup process. A recent win with a

major division of Siemens and the signing of Johnson Controls signaled the first penetration of the Yatra solution into the top end of the corporate travel market.

Architectural Changes and New Features

The Yatra solution represents a marriage between Yatra's front-end technology, Cognizer and Datalex's BookIt! Matrix infrastructure platform. The assessment engine uses fuzzy logic to evaluate multiple criteria, incorporating personal, corporate, and supplier offers into a series of suggested itineraries. This represents a radical change from traditional systems that regurgitate GDS responses and then simply filter them by policy parameters. The Yatra system ranks and sorts travel options based on the employee's role in the organization and the business purpose of the trip. To accomplish this, Yatra has built a complex rules engine that weighs the various personal, corporate, and supplier criteria to provide a mathematical score for each trip. The application's user interface that creates the corporate and personal preferences is laid out in a logical, easy-to-understand rating system, which takes into account three basic criteria for each trip: cost, convenience, and service. The system is completely configurable to specific corporate requirements.

The system is also agency-centric, providing travel management firms both an agent shell and a management tool for their corporate clients. Profiles are stored on the Yatra system, allowing the agency access to all the preferences of the individual corporation. Agency partners use the Yatra profile system for all bookings and thus alter their traditional reservation process.

Yatra was built from the ground up using XML technology. The multi-tiered approach characteristic of new initiatives by other vendors has made the product more flexible and easier to implement with corporate systems. XML is used as the common framework that connects the inference engine and the business logic, transaction, and communication layers of the application.

Datalex's BookIt! Matrix has been under development for the past five or six years. This middleware layer defines the basic elements of what a booking engine needs and provides a standard structure to parse information from multiple GDSs and direct supplier connections. The result is a supplier-neutral API that is not dependent on GDS-structured data.

The company has been exploring ways to make use of its inference engine beyond the booking function. One possible use is as a decision support tool. Cognizer is essentially an optimizing engine that when applied to travel management data could identify areas for immediate additional savings. An instance of this would be the identification of a corporate destination without a hotel agreement, prompting the travel manager to create a discount savings opportunity. This is only one example of using Cognizer in a new context. As Cognizer emerges as a stand-alone product, more examples of optimizing travel choices will become clear.

Analysis

Yatra represents the first system to manage policy dynamically, providing a compelling solution for all sectors of the industry. Corporations view travel as a means to accomplish a business goal, the heart of the reason behind corporate travel. The importance of that goal and the role the employee plays in overall corporate objectives should dictate how policy is enforced on each individual trip. The Yatra Cognizer engine is the first product that can help manage trips more effectively by directly tying them to corporate objectives. Personal preferences, corporate rules and roles, and business purpose feed into the Cognizer engine to enable it to recommend the best itinerary that fits all stakeholders. Each of the major stakeholders is represented in the product. The traveler not only can record his or her normal supplier preferences but also can assign weight to other important criteria, such as on-time performance. The Yatra platform collects information and distributes decision support to line managers, allowing them to control their own travel budgets more effectively. This reinforces the long-standing concept that it is really

a company's line management, not a single person with the title of corporate travel manager, that manages travel.

Agency Products and Strategies

American Express

Background and Update

American Express's AXI product was introduced in 1997 with great fanfare. Built in conjunction with software giant Microsoft, AXI's user interface did feature a number of positive enhancements, including more detailed mapping functionality and an easy-to-use graphical design. But if AXI was so good, why switch to Corporate Travel Online? The answer is pretty simple: source code and enhancements. As with any software, change is inevitable to keep up with competition and customer requirements. From published reports it appears that American Express's relationship with Microsoft required it to contract with Microsoft for all modifications, both an expensive and an inefficient strategy. When the American Express–Microsoft relationship is contrasted with the company's relationship with GetThere, an established market leader that is constantly changing the product to meet corporate customer requirements, the reasoning behind American Express's decision seems obvious.

American Express has shifted its focus away from creating and enhancing its self-booking software, leaving that to its development partner GetThere, instead focusing the company's efforts on the creation and deployment of very successful e-support centers. Beyond the economies of scale available with dedicated e-support, American Express has implemented technology to drive adoption and achieve a touchless travel environment.

Market Position and Focus

American Express continues to hold a dominant position in both card and travel services among *Business Travel News'* top 100. Like the other major travel management firms, American Express

has a strong motivation to embrace self-booking as a means to offset continued shortages in manpower. This emphasis is most evident in the suite of interactive products and services known as Business Travel Interactive Services. The goal here is to achieve a lower cost of operation by consolidating fulfillment for online products in dedicated call centers. These centers are an extension of the low-cost online fulfillment services introduced in 1977 for small and midsize companies.

Architectural Changes and New Features

At the time of this writing American Express was creating and deploying a multi-tiered infrastructure platform to power a new POS agent platform. Part of this initiative involves the adoption of a middleware layer to remove the one-to-one dependence on the GDS. The first phase of this redesign was announced last summer with the deployment of an independent IP network throughout the American Express network of corporate agencies. The second part of this announcement is the creation of an offline profile system that stores customer information in a separate database and synchronizes with the GDS.

The e-support centers have a customized mid-office application that performs quality control and manages the reservation with a minimum of human interaction. The goal is a “touchless” transaction. The statistics at the e-support centers are very impressive, as American Express has achieved an 84 percent touchless rate. *Touchless* refers to records that do not require any changes to the reservation before fulfillment. The drop in the number of calls per transaction is equally impressive, with the average number of calls for an e-support reservation at 0.65 versus an average of 2.5 calls per transaction in a standard support environment.

American Express has also rolled out a POS preferencing tool, Rapid Preferencing Manager. The tool's goal is to allow the agent to assist the corporation in an effort to meet the objectives of multiple overlapping supplier agreements.

Analysis

American Express's e-support emphasis signals a shift in strategy from software development to maximization of support efficiencies. Embracing a low-cost model fulfillment model is good for both the client and the travel management firm. The shared mission is to drive adoption of self-booking and drive down costs. Because of its size and market presence, American Express has also taken a more neutral position in respect to self-booking technology, supporting all the major vendors through its e-fulfillment centers.

The e-support agent represents the agency of the future. Less reliant on GDS formats and more Web-centric, the agent has the new role of driving adoption of self-service reservation tools. This combines the role of the traditional travel agent with that of a tech support agent and help desk. This has resulted in a dramatic average adoption of 45 percent on the part of clients using the American Express e-support center.

American Express is presently evaluating robotic search tools to capture Web-only fares, understanding the imperative to deploy a solution quickly to meet the needs of its clients. With its new independent platform in development, American Express is also investigating a more long-term solution to Web-only inventory through direct connections.

Carlson Wagonlit: Symphonie

Background and Update

Carlson Wagonlit Travel (CWT), the second-largest travel management firm, supports major third-party self-booking products and offers its own proprietary suite of products. CWT's technology grew out of the company's multiyear reengineering and technology development project originally called TSS. Last year CWT released the suite of products under the Symphonie brand. This includes Horizon, a self-reservation tool; Harmony, a new agent POS system, Portrait, an independent off-GDS customer profile solution, Discovery, a decision support reporting tool; and Freedom, a mobile reservation solution. Portrait is a networked database application that exists outside the GDS and houses all profile and reservation information for both the agency call center and the Horizon self-booking tool.

Market Position and Focus

When Horizon was introduced, the self-booking product was tied to the Harmony agency environment. Last year, Carlson Wagonlit Travel shifted its strategy by somewhat decoupling Horizon from the Harmony call center technology. Horizon is now available to all CWT clients and provides the ability to synchronize profiles and access productivity tools such as a view of unused e-tickets. The Symphonie suite of products represents a dedicated effort by Carlson Wagonlit to achieve GDS independence and create a separate CRM-based solution that integrates online and offline activity. In this way the effort demonstrates some forward-thinking planning by the mega-agency.

Symphonie's full profile integration is the key underpinning of this effort. CWT also has the functionality to manage unused documents. The CWT e-support centers offer support 24/7, 365 days a year. The Traveler Site tool offers the ability to assign personal PIN IDs and allows the

user to change the ID once it is assigned. The PIN ID is integrated with the e-support's telephony system so that customer information is displayed to the agent on every call. A database of unused tickets is accessed from both the Horizon and Harmony platform allowing the easy integration of unused tickets into both the online and offline reservation process.

CWT has positioned Symphonie as both a consolidated support function and an integrated call center/traveler application. CWT has invested heavily in Symphonie to enable a more independent call center platform. A corporation is given the choice of using either the CWT call center that is equipped with Symphonie technology or a standard call center environment. The corporation can then choose to implement either the Horizon product or a standard third-party self-booking tool.

Architecture

Symphonie's independent platform allows the complete synchronization of the Harmony self-booking tool with the Portrait and Harmony call center applications. CWT worked with an independent third party to build a common structured data interface that works with Sabre, Galileo, and Worldspan. The TSS product has been was built using state-of-the-art object-oriented tools that enable an open platform. Symphonie is built on an multi-tier architecture that distributes the applications and services across multiple systems. This makes Symphonie very scalable and more manageable. The software was created using Sun Microsystems' Forte 4 GL objects, again providing it with increased flexibility to allow a greater degree of customization. In addition, as with many of the systems evaluated here, the Symphonie solution uses an XML messaging layer for communication with the user interface and the GDS and with corporate databases. CWT has licensed a corporate version of the Yahoo! corporate portal technology and

has incorporated into the Symphonie suite. This front-end personalization technology provides the integrated portal approach to all the Symphonie suite of travel applications.

Analysis

The major strength of the Horizon booking tool is the common Portrait profile database shared with the Harmony call center. Any change in profile or reservation is automatically updated, regardless of whether it was made with the self-booking tool or through the call center. The Symphonie application also gives CWT the ability to easily implement Web-based assisted e-commerce functionality. As previously discussed, blending the correct level of assisted e-commerce with an online booking tool implementation is essential for a successful launch.

As an independent network with a separate database that houses both profile and reservation information, Symphonie may also provide an important capability for a more complete direct connection strategy. Solutions that connect directly to suppliers often focus only on the self-booking product. Given the fact that most companies have only partially adopted self-booking tools, a direct connection solution that encompasses all reservations, including those made through the agent desktop, is important. This hybrid approach to direct connections will continue to be necessary until self-booking adoption reaches 100 percent of all travel reservations, a reality that is many years away. The Symphonie platform provides a foundation for this more comprehensive direct connect strategy.

After the initial introduction under the TSS brand, CWT recognized that tying together self-booking and call center technology limits the firm's ability to achieve efficiencies. The coupling of the two products restricted self-booking gains to the limits of call centers. More important, when customers chose to deploy competitive self-booking tools, CWT lost the functionality tied to Harmony, particularly the single-source Portrait database of profiles and ticket-tracking

capabilities. When the Symphonie brand was formally introduced, these products became decoupled so that a customer could benefit from a common profile and new agency POS using a competing self-booking tool. As the second-largest travel management firm, CWT continues to support other self-booking vendors and is working on similar integration with other products. Though decoupled, implementing other self-booking technology into the Symphonie suite may result in added costs and reduced functionality.

CWT recognized four years ago the need for GDS independence, a separate customer profile, and an integrated approach to self-booking and call center management. The Symphonie product suite represents the culmination of the company's multiyear effort. CWT is evaluating a variety of robotic search tools to capture Web-only fares for both the agent desktop and self-booking application. SideStep is currently being evaluated in CWT Canada. With the independent Symphonie platform, CWT is also investigating a more long-term solution to Web-only inventory through direct connections.

Navigant

Background and Update

With the purchase of Sato Travel, Navigant International is now one of the largest travel management companies in the United States. Currently Navigant consists of geographically dispersed travel management companies spread throughout the United States, Brazil, Canada, and the United Kingdom. Navigant does not have its own self-booking product but instead supports all booking tools. The company's e-commerce strategy focuses on the business-to-business applications of Navigant.com while strategically aligning with self-booking tools that match customers' skills, budgets, and needs. Navigant's approach is based on the careful assessment of product usability rather than an insistence on always being on the leading edge. A decision to build or buy is based strictly on an analysis of what best meets a customer's needs.

Market Position and Focus

Navigant is a result of a rollup of a number of independent travel management companies. Over the past few years much of the company's efforts have revolved around creating common business and technological standards to unite all of these individual entities while maintaining the strong business relationships that exist with its regional locations and their customers.

Architectural Changes and New Features

During 2001 Navigant introduced both customer profiles and electronic itineraries that are housed in Navigant's data warehouse. The company has implemented a common IP network across all of its agency locations and has standardized on a common mid-office and back-office platform. This allows the agency to deliver a standard reporting tool for all its locations and corporate

customers. The IP network represents the new nerve center for the agency and creates an opportunity to provide common tools such as voice-over IP telephony technology.

The acquisition of Sato also brings on board some unique technology that includes a proprietary call center point-of-reservation system, Eagle, which provides a GDS-independent platform for traveler profiles. The traveler profile database is integrated with telephony technology, so that the profile is automatically pulled when the customer calls to make a reservation. Eagle has created an XML-based communication layer that synchronizes profiles with self-booking tools and the GDSs. At this point it is unclear whether Navigant will adopt the Eagle technology in a broader implementation beyond the Sato call centers. Sato also recently announced a partnership with expense management vendor Gelco to develop an automated travel management tool designed to speed up the trip approval and ticketing processes for civilian government agencies.[28]

Analysis

Rather than creating large e-support centers, Navigant is using its IP network to create virtual e-support centers across offices. This may involve the use of voice-over IP technology along with an integrated telephony database environment that would allow any Navigant office to provide a common e-support experience. The next stage of the agency's technological strategy is the embracing of OTA XML and Web services standards to create greater interoperability between offices, applications, customers, and suppliers.

The company recently announced a pending agreement with Orbitz to allow its mid-office software, Aqua, access to Web-only inventory.

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[28] "SatoTravel, Gelco to Create Management Tool," *Travel Weekly,* July 9, 2001

Rosenbluth

Background and Update

Similar to the other mega-agencies, Rosenbluth International has shifted gears away from a focus on its proprietary @Rosenbluth tools and toward efforts on its three-year-old e-fulfillment centers. With its alliance with Galileo, Rosenbluth has begun a strategic distribution relationship for the Highwire product.

Rosenbluth International still uses its proprietary software components to help differentiate its overall service offering. This includes portal development, Web-based reporting, DACODA, and fare-search capabilities.

Market Position and Focus

Recently the agency announced a comprehensive Web-only fare project called Web Central with technology developed by TRX. The goal is to provide Web-only fares to the agent's desktop and integrate this information into all of Rosenbluth's decision support products. In addition to the Highwire relationship, Rosenbluth provides support for all the major self-booking vendors.

Rosenbluth's e-fulfillment solution strategy supports clients with multiple service access channels. These include phone, e-mail, Web chat, collaborative browsing, intelligent FAQ, and self-help.

The Rosenbluth e-fulfillment centers use the following technologies (some of which are still in development):

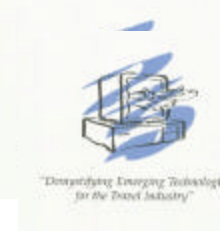
- E-mail management system
- Targeted outbound e-mail campaign management
- Chat capabilities
- IVR/VRU—interactive voice response system

- Customer relationship management
- OLAP/DSS data warehousing—online analytic processing and decision support system
- Web-based reporting
- Yield management
- CTI (computer telephony integration)
- AI (artificial intelligence)—used to generate FAQs and e-mail templates
- Portal personalization—through the CRM to create personalized home pages
- Customer service applications for PDAs and Web phones
- CCA screen pops with customer's profile based on customer input of specific identification information

Architectural Changes and New Features

At the recent PhoCusWright Travel Technology Conference, John Dabek, Rosenbluth's CIO, laid out his vision for a multi-tiered open platform to support agency call center operations and provide a more flexible computing environment. Elements of this strategy include a new agent POS interface and a middleware infrastructure that provides GDS independence. Dabek said this new environment would take advantage of OTA XML standards wherever possible and would support Web services standards for an open computing platform. A separate off-GDS profile system will interface with multiple systems, allowing for seamless integration of Web-only fares, direct supplier connect information, and multiple GDS information. Dabek indicated that a vendor for this project would be selected within 60 days, with implementation of this platform by the end of 2002.

Rosenbluth has already invested in a number of unique technologies to add additional functionality to the reservation process and decision support capabilities of its clients. Res-



Monitor is a proprietary fare-quoting software acquired by Rosenbluth International in the early 1990s from Travelmation, a forerunner to systems such as ITA Software. The Res-Monitor software calculates the lowest fare through proprietary algorithms that exist within the system outside the traditional GDSs.

Rosenbluth's Discount Analysis Containing Optimal Decision Algorithms, or DACODA, is a proprietary decision support technology that analyzes a corporation's travel patterns and contractual relationship, identifying the true value of corporate contracts based on the actual availability of discounted fares. Rosenbluth has brought the DACODA technology to the POS of its call center agents, prioritizing options based on this analysis. The POS adjustments based on DACODA recommendations are controlled by the corporation.

Analysis

Similar to other initiatives discussed in this analysis, the recently announced Rosenbluth open platform initiative represents a dramatic change for the agency call center and POS environment. The agency's aggressive stance on Web-only inventory and comprehensive set of e-support technologies continue the drive toward equipping the offline agent with the tools necessary to support the online world.

With its success supporting Oracle and Internet travel sites, Rosenbluth is leveraging its e-fulfillment services as a way to drive adoption of all self-booking tools. The company's shift to a more neutral position on self-booking reflects the overall trend to provide comprehensive e-support services for all vendors.

TQ3 Maritz Travel Solutions

Background and Update

TQ3 Maritz recognized the need to implement an independent IP-based network and customer profile system four years ago. The underlying TQ3 Maritz infrastructure technology represents an architecture that others are just now building or implementing.

TQ3 Maritz's focus has been on providing consulting services on the selection and implementation of self-booking tools, and it has dedicated specific staff to provide those services. The company has built a number of proprietary technologies, including ProView, a robust agent POS application and profile management system. The ProView product includes profile synchronization technology that houses the traveler profile outside the traditional GDS. Maritz has incorporated this technology into its self-booking implementations.

TQ3 Maritz Travel Solutions continues to support all self-booking vendors with dedicated e-support and traditional support. Both options use the ProView technology to provide a single integrated customer experience.

Market Position and Focus

On February 5, 2001, TQ3 Travel Solutions was founded by two of the world's leading travel management providers - U.S. based Maritz Corporate Travel and TUI Business Travel of Germany. The formation of this single company represented a shift for Maritz away from a network alliance structure to a more direct partnership on a global basis. TQ3 has offices worldwide. The company has emphasized its consultative approach to travel management. With the acquisition of McGettigan Partners in late 2001, TQ3 has positioned itself as the leading provider of corporate meeting and event planning services.

Architectural Changes and New Features

As a major supplier of corporate meeting services TQ3 Maritz introduced meeting software to automate the entire planning and registration activity. TQ3 Maritz's Meeting software called HQ is a flexible meeting planning and management tool. It allows online registration for meeting and follows the client through the entire meeting management process.

Analysis

TQ3 Maritz is actively testing a number of vendors who provide solutions to Web-only fares. Because of its open architecture, incorporating both self-booking and agency POS Web-only fares solutions are much easier. The ProView profile can track all Web-only purchases. This profile is used for all support centers and thus represents an important immediate solution to tracking off-GDS reservations and feeding this information into the agency decision support platform, Northstar. The data warehouse and ProView agency POS application now contains a record of unused tickets, allowing the TQ3 Maritz agent to offer unused tickets as part of each transaction. TQ3 Maritz is also working with all the self-booking vendors to integrate this information into their applications. The agency has also incorporated its online and call center Meetings Management tool to help clients more efficiently manage all types of meetings electronically.

The TQ3 Maritz architecture and POS applications provide a model of where the industry is heading. The open, flexible architecture of its infrastructure represents the reservation and support framework that other agencies are just building or implementing.

WorldTravel BTI

Background and Update

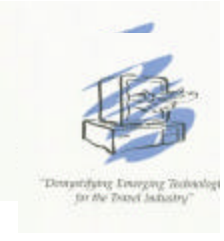
With the acquisition of McCord Travel Management, WorldTravel BTI has grown to become one of the largest travel management companies. The suite of tools used by WTBTI is a hybrid of TRX technology and developments from the WorldTravel Partners Interactive (WTPI) division.

Market Position and Focus

WTBTI has grown rapidly over the past two years through acquisition and merger. WorldTravel Partners (WTP) created WorldTravel Interactive (WTI) specifically to offer an integrated suite of TRX technologies, as well as to develop a platform that can easily integrate with *all* self-booking and expense management systems. WTPI launched a number of initiatives, including WorldTravelNet (WTN), a turnkey extranet solution for WTBTI's corporate customers, and a WorldTravel intranet, designed to bring a single IP-based platform to the entire company. WTBTI has implemented or is currently implementing GetThere, e-Travel, ResAssist, and other vendors' self-reservation software for various clients. The suite of software products and integration tools used for ResAssist is being expanded to include these other products, supplementing their functionality and providing a more comprehensive self-booking solution.

Architectural Changes and New Features

The WTI solution set is a combination of TRX automation tools (Profile Manager, EnCoRRe) and an IP-based network that is designed to create a personalized turnkey solution for the traveler and travel manager. The open systems architecture is designed to work with all major booking products, providing quality control and profile synchronization regardless of the capabilities of the individual product.



WTN's strategic focus is to provide a single, personalized Web address for WTP corporate accounts. This site incorporates all travel-related information and can be customized to provide the client's corporate look and feel. In addition to booking and expense services, the site contains content aggregated by WTPI and designed to provide added destination, dining, and other services to the road warrior. WTPI includes access to reporting information. Depending on customer preferences, selected leisure content may also be offered. In addition, WTPI will provide WTN content to wireless devices through the use of wireless access protocol.

As WorldTravel BTI has grown, the company's focus has continued to expand. World Travel Interactive has successfully won contracts with non-WTBTI accounts such as PricewaterhouseCoopers, deploying its portal technology. WorldTravel BTI continues to expand its dedicated fulfillment centers and is working on a new agent platform called Trinity, which is being developed by TRX.

WorldTravel Partners has added a number of new features in its implementation of the ResAssist products. These include the following. (Note: these items refer to WTBTI's implementations of the TRX ResAssist product. WTBTI supports all major self-booking vendors, and its goal is to enhance all implementations with similar functionality.)

ResAssist feature released since last update:

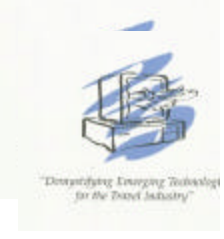
- Direct access carrier availability for suppressed classes of service not available in general GDS availability
- Clients have the ability to set up single sign-on features from their internal networks.
- Clients can quick-jump to specific functions such as profile update and start a new trip.
- Internet fares now apply to one-way and circle trips. American Airlines has been added to the list of sites searched.

- The number of schedules returned to a user has been increased by three.
- Enhanced reports available to site administrators now include travel planner associations, membership numbers for air, car, and hotel, and credit card numbers. This new feature allows reports to be custom-designed and placed on the Web site for administrator access.

Analysis

The new Trinity platform represents a major shift for the mega-agency. Built on the TRX middleware platform, the new product is designed to give WTBTI GDS independence at the point of sale. The agents will still have access to the GDS, but the call center display will allow for greater integration with Web-based applications as well as non-GDS fare sources. The platform for Trinity is complete. Now the focus shifts to adapting this robust independent architecture to the POS of the WTBTI agent.

WTBTI has used the TRX Web-only search technology at the agent POS for some time, and this function will be expanded with the introduction of Trinity as well as incorporated into EnCoRRe so that Web fares can be checked robotically for each reservation dictated by corporate guidelines.



Navitaire—and the Former Via World Network

Market Update and Analysis

Earlier this year a new company was formed, combining *via* World Network with PRA Solutions (another company funded by Accenture, formerly Andersen Consulting, that provides software and services for airline revenue accounting) and Open Skies, a reservation platform for smaller airlines purchased from Hewlett-Packard. The new company, Navitaire, is shifting management structure and changing its focus to operate as both a technology solutions vendor and a business service provider. The *via* World Network corporate self-booking product is no longer being marketed by Navitaire.

The company will continue to offer an integrated direct connect platform "inside" the service offerings of other distributors and airlines on an outsourced basis. Navitaire is now positioned as an ASP, providing direct connectivity services to other channels. Though *via* World Network is gone, expect Navitaire to “inside” as an underlying direct connect solution for self-booking and agency POS applications.

Understanding Your Corporation's Technology Strategy

Before beginning a corporate travel technology selection process, it is essential that you understand your corporation's technology strategy and infrastructure. Here is a list of questions that you should answer to ensure that a self-booking solution matches your company's IT strategy:

- Is your company standardizing on an enterprise resource planning (ERP) system such as SAP, Oracle, PeopleSoft, or Baan? Will there be a push to use the ERP travel solution?
- If they are not part of an ERP system, what products does your company use for the general ledger, accounts payable, and human resources systems?
- How does other software interface with these systems? How can external systems integrate with your internal systems? Are there standard interfaces?
- Is your company embracing Web services? How will that impact your need to integrate travel technology with your company's enterprise systems?
- Has your company adopted XML to interface between internal systems and vendors?
- What security systems are in place that may restrict software usage (both on-site software and software used through a service bureau)?
- What is your standard corporate e-mail system? How easily can third-party software work with the corporate e-mail?
- Is your company implementing an e-procurement solution such as Ariba, Commerce One, or SunOne?
- How important are features such as access via cell phones and PDAs to your overall corporate philosophy?

- Is your IT department willing and able to support your self-booking implementation?

Summary

A Holistic Approach to the Process

The question is often asked, “Who has the best corporate travel technology?” The true answer to this question is that no single product is superior. Travel managers need to take a holistic approach to selecting a technology. Simply put, the vendor selection truly depends on what is important to your corporation. Part of this process involves calculating a supplier’s TCO as it relates to how the product meets your specific corporate needs. A self-booking vendor’s value may be based not on functionality but on relationships. Is the vendor closely aligned with your agency? Perhaps this is important. Others may feel that agency independence is key. How important is GDS bypass? How important is integration with your enterprise systems? Are international capabilities a key determining factor?

The answers to such questions will dictate the value of the vendor for your particular needs. Again, no vendor is superior, but differences do exist across vendors. Some of those differences lie not in a product’s features but in its approach and direction. I encourage you to use the attached TCO tool to begin evaluating the relative importance of the basic issues involved in selection. If you can isolate the areas most important to your needs, you can then target potential vendors. I’ve designed this study to help you see the market from a 10,000-foot level. I strongly recommend that a traditional RFP process follow this first-level analysis to determine the right product for your company’s strategic needs.

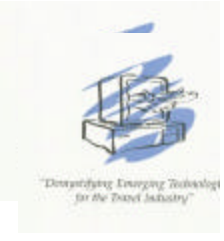
Self-booking technology is one piece of a larger process of travel procurement. Treating self-booking as a pilot or test as a defense against Internet bookings is a much too narrow analysis.

Self-booking is not a trend but an *evolutionary* step toward a more automated process. Adoption is a function not only of product features but also of how the products match your actual reservation process. An important first step is to understand how the process is performed now. How many reservations are done by the travel arranger versus the traveler? Do different cultures exist in your company across divisions, departments, or functions? How are other items purchased? How will self-booking allow you to implement a more strategic travel procurement practice?

Finally, don't lose sight of the true power of the Internet as a vehicle to communicate with your travelers. In this way self-booking is bringing to the traveler or travel arranger information that has historically been locked away in cryptic GDS formats. Evidence is building showing that as a direct result of better information, travelers using self-booking seem to embrace lower fares and conform more to travel policy. In this sense, self-booking is providing frontline decision support to the traveler. This will continue to improve as self-booking becomes more tightly integrated with other decision support tools. Self-booking allows you to touch each of your travelers or travel arrangers at the point of sale. This provides an important opportunity to educate and communicate with your best clients.

Innovation and Adoption

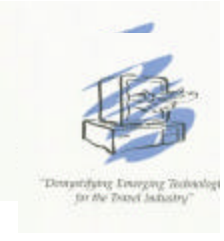
The corporate travel industry has often overlooked the relationship between innovation and adoption. Corporate travel managers seem to believe that low rates of self-booking tool adoption are primarily a result of poor internal marketing or management weakness (lack of mandate) rather than shortcomings in technology. It is my belief that self-booking technology will reach critical mass only when the experience of using the tool is *better* than picking up the phone to call an agent or handing the task over to an administrative assistant. I am confident that many of the



second-generation innovations described in this update will spark a new level of adoption. This is truly a real-world example of “If you build it, they will come.”

Things to Watch During the Next Six to Eight Months

The past six months have seen some dramatic shifts in the corporate online market and overall industry. We are on the cusp of a dramatic new infrastructure for both self-service reservation systems and agency POS platforms. This new, open XML-based environment promises to provide a new way for buyers and suppliers to transact and interact. At the same time, as the line between leisure and corporate travel continues to blur, more turbulence is ahead, so fasten your seat belts!



Appendix A: TCO Tool

Description

This tool is designed to complement, not take the place of, a thorough RFP process.

- The tool will help you quantify the survey responses in the context of your corporate priorities, allowing you to develop a single TCO rating for the vendor.
- The sections contained under each category correspond to self-booking survey categories completed by each supplier (see appendix B).
- Areas in which a vendor scores low on a highly weighted category may signal additional costs of contracting with that vendor in an area important to your company.

Instructions

This tool is designed to allow you to evaluate vendors based on their survey responses only. You should supplement these questions with a formal RFP process

1. Review the summary categories below and assign a relative value to each of the seven categories. The total must equal 100. The statements below each category correspond to some of the specific points you should consider for each of the categories.
2. Read each vendor's completed questionnaire and assign a rating of from 1 to 5 (low to high) for the overall answers to the category. For example, Vendor A receives a score of 3 for profile management.
3. Multiply the relative value number by the rating to calculate a score for each category.
4. Add all the categories together to calculate an overall score for the vendor. Scores will range from 100 to 500 (low to high).

Example

SELF-BOOKING VENDOR TCO TOOL	RELATIVE VALUE	× SCORE	= WEIGHTED SCORE
Vendor Name Self-Booking Vendor A			
PROFILE MANAGEMENT	10	3	30
INTEGRATION	10	2	20
ARCHITECTURE	15	1	15
ADMINISTRATION	10	2	20
FUNCTIONALITY	15	5	75
SUPPORT	25	5	125
PRODUCT DIRECTION AND BUSINESS ISSUES	15	1	15
TOTALS	100		300

SELF-BOOKING VENDOR TCO TOOL	RELATIVE VALUE	× SCORE (1–5, low–high)	= WEIGHTED SCORE	COMMENTS
Vendor Name _____				
PROFILE MANAGEMENT	_____	_____	_____	
The flexibility and integration capabilities of the tool's profile management				
INTEGRATION	_____	_____	_____	
The self-booking tool's capability to integrate with my travel agency processes and systems				
The self-booking tool's capability to integrate with my corporate enterprise systems				
ARCHITECTURE	_____	_____	_____	
The need for the system to be built on open, flexible architecture that allows maximum performance and customization				
The self-booking technology's capability to provide a direct link to my large suppliers that bypasses the traditional GDS				
ADMINISTRATION	_____	_____	_____	
The capability of the self-booking technology to provide an easy-to-use administrative module for entry and modifications of supplier contracts and policies				
FUNCTIONALITY	_____	_____	_____	
The capability of the tool to provide a customizable interface that meets my corporate requirements				
The self-booking tool's overall ease of use				
The importance of the self-booking tool's international (non-U.S.) capabilities				
SUPPORT	_____	_____	_____	
The level of support provided by the self-booking vendor for integration, training, and ongoing maintenance				
PRODUCT DIRECTION AND BUSINESS ISSUES	_____	_____	_____	
The long-range strategy for the product				
The importance of the business relationship with the self-booking vendor as part of a larger strategic supplier strategy (not in questionnaire but part of the evaluation)				
The financial stability and market position of the vendor (not in questionnaire but part of the evaluation)				
TOTALS	_____		_____	
129	***Must equal 100 points***		***Total score for the vendor***	

Appendix B: Vendor Questionnaire Responses (separate document)