Selling Complex Leisure Travel Online

Focus on Dynamic Packaging Technology

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

PhoCusWright Inc.

Selling Complex Leisure Travel Online: Focus on Dynamic Packaging Technology

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"Demystifying Emerging Technologies
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PhoCusWright Inc.

Section 1

Dynamic Packaging Overview

Introduction

Not long ago, consumers who wanted to purchase a vacation package had to sift through a pile of brochures that contained pre-assembled options, many of which did not match their needs. Traditionally these static packages were developed by wholesalers and sold through offline travel agencies. The Internet has permanently altered the way vacation packages are created and marketed. Consumers can now purchase packages from a variety of sites such as online agencies, hotels and airlines; the options have never been so broad. And within the dramatic increase in Internet travel sales, the surging packaging sector has emerged as a new growth category.

Joint research recently conducted by PhoCusWright Inc. and Vividence Corp. found that:

- Online purchases of vacation packages are expected to at least double by 2006, as consumers and suppliers alike realize and reap the value-added benefits of bundling products, including activities and events, into one pricing scheme.
- Packages are no longer available solely from top online agencies, as supplier, destination and other sites are now offering combinations of products.

Under the broad category of vacation packaging, a single technology has surfaced as the "killer app" for the leisure travel industry: dynamic packaging. However, this term is used so commonly in different contexts by different vendors that a standard definition is needed. What exactly is dynamic packaging? There is no dispute that dynamic packaging involves assembling components into an itinerary with a single price, but it is generally not clear what makes a package dynamic. Among the questions raised by dynamic packaging developments are:

- Are there common technologies being deployed to achieve a balance between consumer preferences and supplier marketing goals?
- Is there a difference between dynamic pricing and dynamic packaging?
- What technologies are emerging that will drive next generation dynamic packaging engines?

Purpose of Report

In early 2004, PhoCusWright Inc. and Travel Tech Consulting Inc. embarked on a joint project to help the industry understand the current and future trends in dynamic packaging. One goal is to clearly define terminology with respect to custom online packaging techniques. The report also examines the underlying technologies

that enable dynamic packaging, and profiles 13 companies that offer packaging solutions. In addition, it explores emerging technologies coming to market that will further enhance the online vacation planning experience.

Report Methodology

This research is the result of interviews conducted in January-June 2004 within multiple sectors of the leisure travel industry. To cover the topic completely, these in-depth interviews were conducted with three types of companies:

- Traditional tour operator software vendors
- Internet-based leisure travel distribution platform vendors
- Online travel agencies

A clear picture emerged from these interviews of the evolving technology platform being developed for dynamic packaging. Though there were differences in approach and strategy, all companies agreed that dynamic packaging is the wave of the future and that current systems are in the infancy stage of the development process.

Consumer Behavior Methodology

PhoCusWright Consumer Travel Trends Survey Sixth Edition
Online travelers were identified through successive waves of ICR's EXCEL Omnibus survey Sept. 4-Oct. 5, 2003. Respondents indicated if they had: 1) personally taken a trip by commercial airline in the last 12 months, and 2) used a computer, either at home or at work, to connect to the Internet in the last month. A total of 504 interviews were conducted from ICR's centralized telephone center. The error interval for the sample is +/- 4.4% at the 95% confidence level.

Vacation Packages: A Consumer Tracking and Discovery Study, 2003
In November 2003, PhoCusWright and Vividence began a large-scale exploration into the online vacation planning process. To conduct the research, Vividence recruited 1,500 Internet users in various stages of vacation planning. Travelers were asked to conduct real-time Web research and make arrangements for an actual trip. Each user click and page view was captured and analyzed.

Definitions

The travel industry needs to establish some standard definitions around the subject of packaging. In an effort to establish some basic guidelines, the following definitions are offered to help clarify traditional industry classifications and capabilities within the package categories.

Traditional Fixed Packaging

There are four types of traditional fixed packaging:

1. Package – A combination of two or more different travel components, such as an airline flight with a hotel reservation, offered at a single price.
2. Tour Package – A package with the addition of activities such as sightseeing or meals, all offered at a single price; traditionally inflexible in terms of schedule and supplier.
3. Escorted Tours – A tour package conducted as a group, offered at a single price; itineraries are pre-determined and the group is lead by a guide.

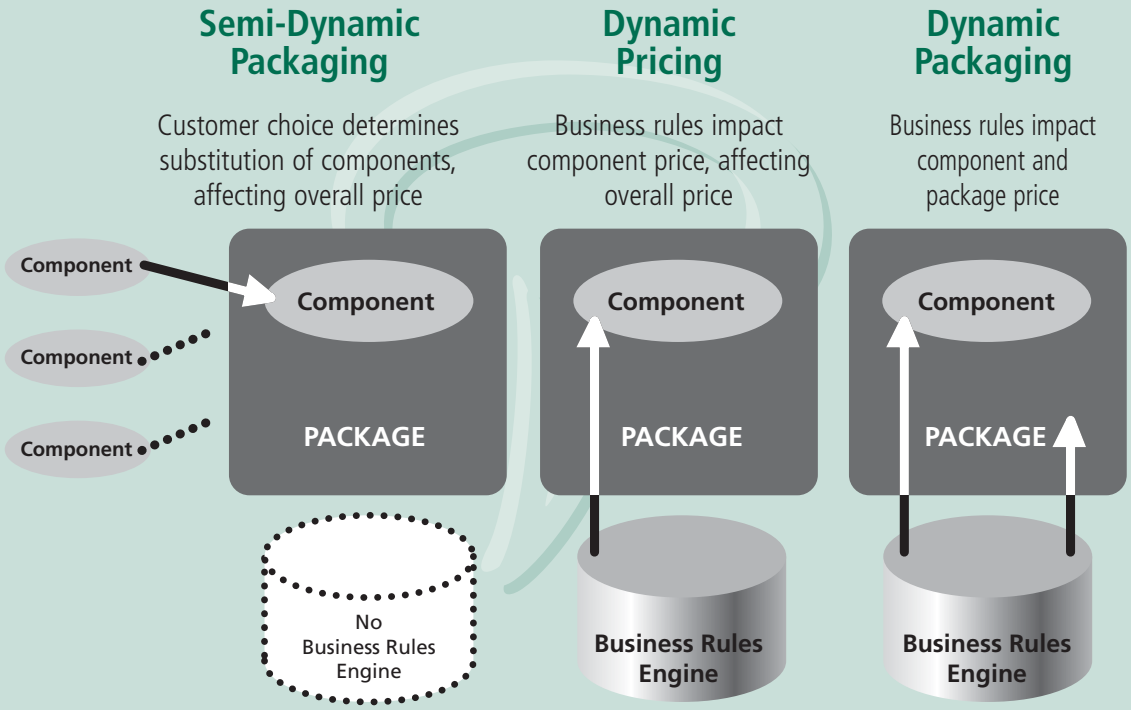
4. FIT Travel – A combination of separate travel components to form a managed itinerary at a single price, though the individual component prices may or may not be known; a FIT (Flexible Itinerary Travel, also known as Foreign Independent Travel) was originally a highly customized tour provided to wealthy travelers, with itinerary and all other details managed by specialized tour staff or a travel agent.

"Static" Versus "Dynamic" Packaging

The term "dynamic packaging" is used by a variety of suppliers in different ways. On closer examination, the key capabilities that separate dynamic packaging capabilities depend on how individual components and the overall package price change based on business rules (see Table 1.1).

1. Static Packaging – A package with fixed components defined by suppliers, for which component prices do not change based on customer input or business rules (itinerary dates may be flexible but the component options are fixed).
2. Semi-Dynamic Packages – A static package with swappable fixed components (i.e., the component prices do not change based on customer input or business rules, but overall price may change based on customer substitution of different fixed components, e.g., hotel or room type, or activities). This package is dynamic in one sense as the price will change based on customer choice of individual components, but static in that the individual component prices do not change based on business rules.

Table 1.1
Types of Dynamic Packaging



Source: PhoCusWright Inc. and Travel Tech Consulting, Inc.

3. Dynamic Pricing – A package for which the overall price is affected by price changes in components based on business rules (e.g., the combination of package elements, the value of the customer to the retailer, or the mark-up target of the intermediary).
4. Dynamic Packaging – A package for which the overall price and component prices change based on business rules (e.g., the combination of package elements, the value of the customer to the supplier, packager or intermediary).
5. Opaque Pricing – The price of individual components of the package is not disclosed to the consumer.
6. Opaque Brand – The specific supplier brand of package elements is not disclosed to the consumer until after a purchase is made (e.g., products from Priceline, Hotwire).

Key Findings

- Most packaging consists of air with hotel and/or car. Attractions have been added with increasing frequency, representing a major growth opportunity.
- All parts of the value chain are becoming package retailers.
- A common platform is emerging to enable connections with multiple sources of supply and flexible pricing across components.
- Dynamic packaging user interfaces are at a very early stage of development and will dramatically change over the next 18-24 months.
- Traditional tour operator software vendors are recasting and modifying their systems to support packaging for traditional travel agencies and suppliers, combining a change in architectural design and system functionality with a repositioning of the software as a solution to multiple market segments.
- Electronic integration of multiple procurement sources is just starting; the process is led by progressive tour operator software vendors, new leisure distribution platforms and the online agencies.
- Traditional tour operators face a mounting challenge from online retailers/ wholesalers as they increasingly add functionality to enable complex vacation planning.
- The ultimate goal of matching consumer preferences and supplier distribution targets remains elusive.

Section 2

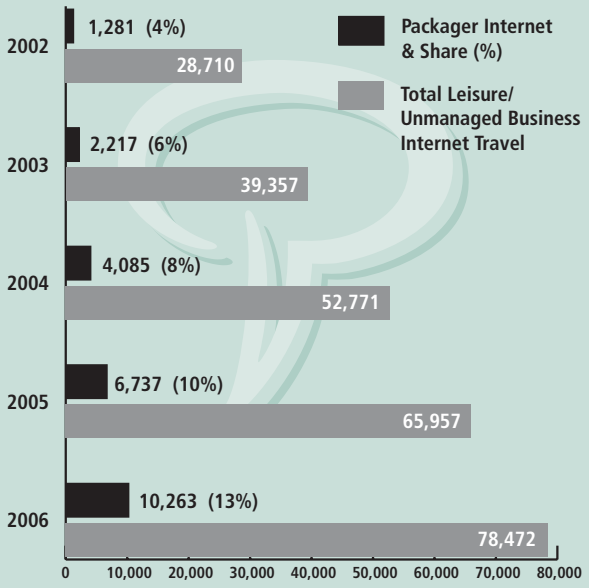
Leisure Travel Technology: Selling Vacations Online

Size of the Online Packaging Market

In 2001, PhoCusWright stated that "selling cruise and vacations online presents both the greatest opportunity and the greatest challenge for the travel industry." Only a miniscule number of packages were actually sold online, mostly static, pre-packaged tour operator products. Fast-forward to 2004, where the challenges remain but the opportunity has changed considerably. Online travel agencies are no longer selling travel packages as agents for tour operators. Over the last few years, the online agencies have largely eschewed the partner model for travel packages, eyeing the bigger opportunity to better control margins and customer data by contracting their own inventory and assembling their own packages.

Online travel agencies now represent 80% of all packages sold online, with tour operators selling the remaining 20%, according to *PhoCusWright's Online Travel Overview: Market Size and Forecasts 2004-2006*. In total, PhoCusWright estimates that $2.2 billion in packages were sold online in 2003, a 14% share of all (online and offline) packaged travel sales (see Table 2.1). By 2006, PhoCusWright projects that online package sales will reach $10.3 billion, a 368% increase in three years. By that time, 13% of all air, car and hotel sales booked online will be booked as part of a package (see Table 2.1).

Table 2.1
U.S. Package Internet Gross Bookings, 2002-2003 and Projected 2004-2006 (US$M)



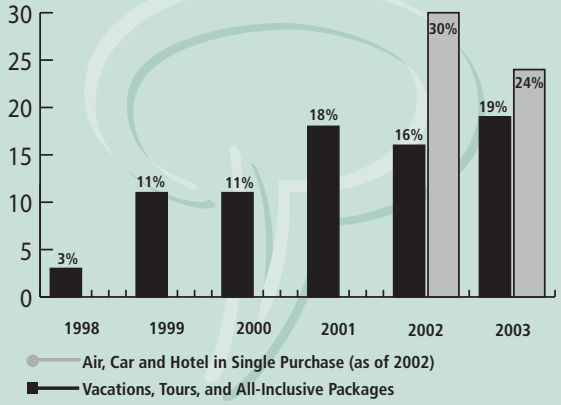
Source: *PhoCusWright's Online Travel Overview: Market Size and Forecasts 2004-2006*

Why all the optimism?

Recent statistics from *The PhoCusWright Consumer Travel Trends Survey Sixth Edition* (see Consumer Behavior Methodology, p. 1.2) show a steady increase in the number of packages purchased online that were all-inclusive, from 3% in 1998 to a

projected 19% in 2006, while 24% of respondents said they put together their own package (see Table 2.2). The vast majority of online package purchases, however, are still a la carte.

Table 2.2
Online Travel Purchased by Segment, 1998-2003



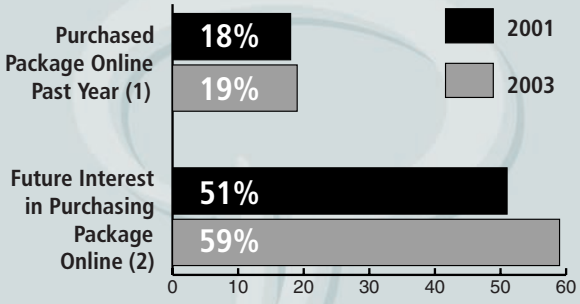
Base: Online Travel Buyers
Source: *The PhoCusWright Consumer Travel Trends Survey Sixth Edition*

In addition, future interest in purchasing a package online is high. According to *The PhoCusWright Consumer Travel Trends Survey Sixth Edition,* 59% of online travelers are interested in purchasing a package online in the future, though actual purchasing behavior is low (see Table 2.3).

The Challenge of Selling Complex Components Online

Early users of the Web simply purchased individual components for air, hotel and car reservations. The appearance of merchant rate hotels in the late 1990s signaled a new era of opaque pricing and ushered in the online retailer/wholesaler

Table 2.3
Future Interest in Packages



Base: (1) Online Travel Buyers, (2) Total Respondents; "Very/Somewhat Interested"
Source: *The PhoCusWright Consumer Travel Trends Survey Sixth Edition*

model. In 2001-2003, the growth of merchant rate hotel inventory coincided with an economic downturn that fueled the volume of inventory put into this channel. Around this time, the industry first began using the phrase "dynamic packaging" to describe the assembly of travel components online to be delivered for a single price. Most online dynamic packages today still consist of simple multi-component itineraries (air, hotel and/or car rental). Recently, some sites have added activities such as sightseeing, attraction passes and event tickets.

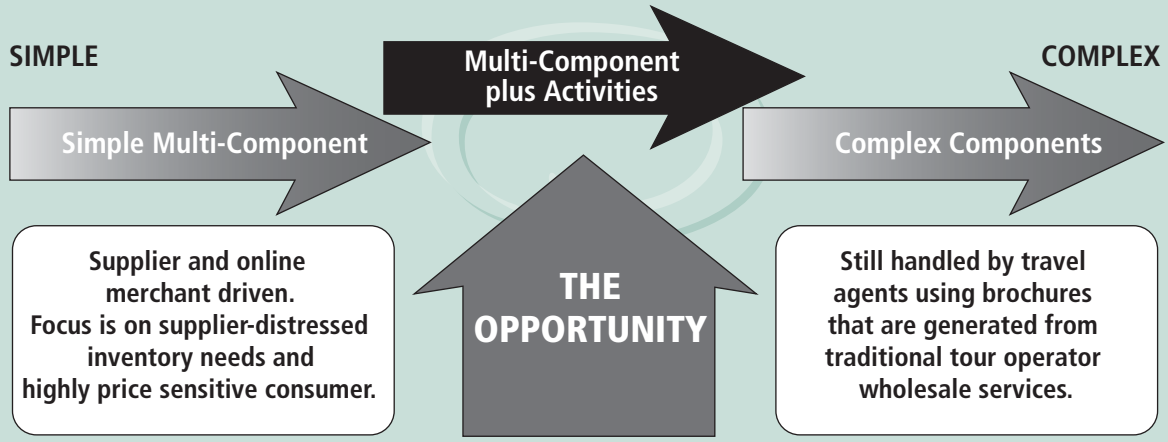
Adding activities to basic multi-component packaging represents a tremendous growth opportunity for the online travel industry. The ultimate goal of most sites is to capture the multi-city, international type of dynamic package, but given the current state of technology and adoption, the ability to fully automate this complex travel planning process will be limited for some time. Table 2.4 illustrates this point, as the largest opportunity for dynamic packaging lies in adding activities to the multi-component sale.

Consumers Demand Flexibility

The PhoCusWright Consumer Travel Trends Survey Sixth Edition clearly shows that most consumers prefer creating their own packages over purchasing pre-packaged tours. According to the survey, nearly one-fourth of all travelers who purchased travel online in the past year did so with some type of air, car and/or hotel package. The majority of these, 79%, made their purchases by creating their own package, while the rest bought the components prepackaged (see Table 2.5). This underscores the importance of dynamic packaging in directing what online travelers purchase through online agency and supplier Web sites, as well as the perceived value of creating a package versus purchasing a pre-packaged one.

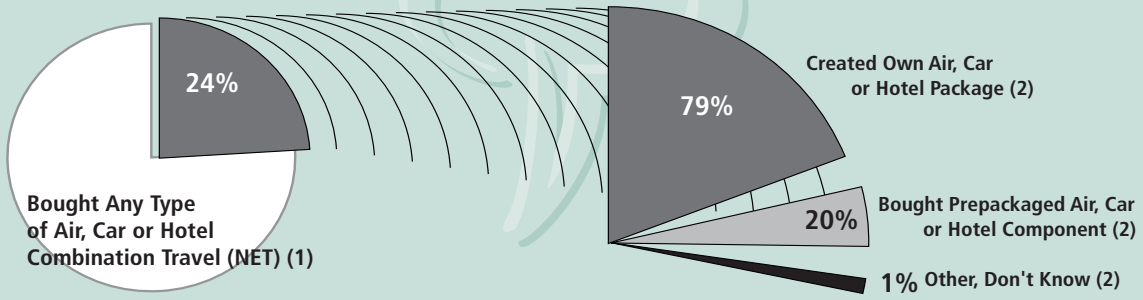
Barriers to purchasing relate to the package interface. According to the PhoCusWright/Vividence research,

Table 2.4
Opportunity by Level of Complexity



Source: PhoCusWright Inc. and Travel Tech Consulting Inc.

Table 2.5
Type of Combination Package



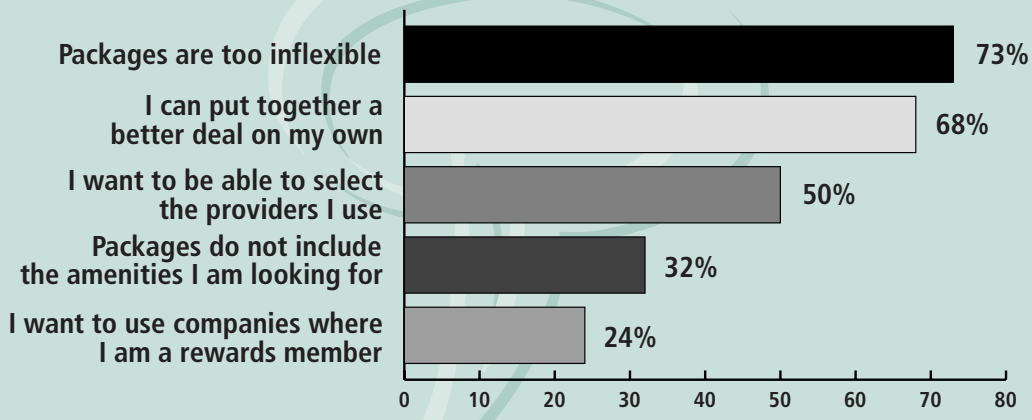
(1) Respondents Who Purchased Travel Online, Past Year(2) Respondents Who Purchased Any Combination Air/Car/Hotel in a Single PurchaseSource:

Source: *The PhoCusWright Consumer Travel Trends Survey Sixth Edition*

Vacation Packages: A Consumer Tracking and Discovery Study (2003), 73% of respondents said they would not consider purchasing a pre-packaged vacation because packages are too inflexible, while 68% simply thought they could get better pricing on their own (see Table 2.6).

These recent research reports clearly demonstrate a strong desire among consumers to customize vacation packages online. The gap between consumer desires and behavior is partially due to the limitations that currently exist in dynamic packaging technology. Section 4 of this report examines the technology of dynamic packaging systems and explores efforts to drive these systems to the next level of functionality.

Table 2.6
Barriers to Purchasing Packages



Source: *Vacation Packages: A Consumer Tracking and Discovery Study, 2003,* PhoCusWright Inc. and Vividence Corp.

Section Three

Packaging Impact by Segment

Packaging, by its multi-component nature, impacts nearly every travel segment. Traditional tour operators rely on consumers' interest in purchasing multiple components in a single product for the benefits of convenience and/or lower price. For online travel agencies and suppliers, packaging represents an entirely new opportunity. While the majority of their sales are single component, technologies now allow them to cross-sell, upsell and create an entirely new marketplace – introducing a new concept to consumers who may never have purchased a package in the past.

The following discussion looks at the impact of packaging on four segments: (see Table 3.1).

1. Traditional Tour Operators
2. Traditional Travel Agencies
3. Online Travel Agencies
4. Suppliers

Traditional Tour Operators

The traditional owners of the wholesale package process face many challenges with the growth of online dynamic packaging. In the U.S., the traditional tour operator industry is a highly fragmented set of more than 1,600 individual companies. These privately owned firms generally specialize in specific geographic destinations and are often run by second- or third-generation family members. The technology used to manage the tour company is usually based on mini-computers that have been highly customized to meet the company's specific needs. In some cases, the original vendor for these systems is no longer in business. The proprietary nature of these legacy systems has prevented many tour operators from implementing an effective e-commerce strategy. There are a number of third party vendors that do provide the tour operator industry with more modern solutions to solve this dilemma, but with the industry malaise of the past three years, only a few tour operators can afford the investment required to shift their entire operation to a more open, flexible system.

Traditionally, these tour operators create static packages that are then published in brochures used by the travel agency community. Despite efforts by more progressive tour operators to automate the reservation process, the majority of interaction with travel agencies continues to be conducted by telephone. Further blocking the implementation of online solutions is the fact that many of the tour operator call center agents still utilize text-based interfaces that lack the tools to handle Web-based transactions.

One of the most unproductive aspects of the traditional tour operator process is the

Table 3.1
Segment Focus

Traditional Tour Operators

- **Strength:** specialty destinations
- **Technology**: mini-computer systems
- **Top challenge:** proprietary technology
- **Strategy:** migrate to open systems, broaden choices
- **Outlook:** many lack investment capacity to upgrade technology

Traditional Travel Agencies

- **Strength:** control the experience
- **Technology**: some embrace wholesale/retail model
- **Top challenge:** capturing data from customer interaction
- **Strategy:** target cruises and tours
- **Outlook:** may lose more market as dynamic packaging matures

Online Travel Agencies

- **Strength:** pioneered retailer/wholesaler concept
- **Technology**: online; implementing direct supplier connections
- **Top challenge:** maximizing advantage
- **Strategy:** use packages to bolster margins, volume
- **Outlook:** ability to use mass and local media provides competitive advantage

Suppliers

- **Strength:** control over product
- **Technology**: online; launching packaging capabilities
- **Top challenge:** retain control by initiating package sales
- **Strategy:** capture market, strengthen brand loyalty
- **Outlook:** bundling activities (esp. for resort sector) is growth opportunity

reliance on fax communications with suppliers. Historically, block space has been given to the tour operator that communicated the status of rooms sold to the hotel through a barrage of faxes. Though block space arrangements still remain, the industry is moving away from this type of allocation concept to more "free-sell" types of agreements. In a free-sell arrangement, the tour operator sells rooms based on individual demand and then reports the sale to the hotel. Hotel management can shut off the supply of inventory for future sales, but current sales are honored based on this free-sell agreement. The ability for the hotel supplier to work through other channels, particularly using dynamic packaging technology, is one factor causing this shift.

Tour operators also historically lack rich customer databases. With their reliance on travel agency distributors, tour operators often don't receive customer information until the vacation is booked. Their inability to understand the buying behavior of customers puts them at a further disadvantage as the new online retailer/wholesaler launches more sophisticated dynamic packaging technology.

Traditional Travel Agencies

Facing standard commission cuts, many travel agencies have targeted cruises and tour packages as an important revenue stream, because these suppliers still pay commissions of 15-20%. It is important to note that for the majority of vacation packages, traditional travel agencies still own the customer purchasing experience. When a customer interacts with a traditional travel agent by telephone or in person, an active conversation unfolds. Here, the consumer's needs are expressed and the experienced travel agent acts as a true consultant, providing various options in the form of packages or customized itineraries. Given the economic challenges of the last few years, often these recommendations are made for an ever-narrowing set of preferred suppliers, as travel agents limit their recommendations to a short list of preferred vendors that pay higher commissions.

Unfortunately, most traditional travel agencies have no way to capture the key elements of the vacation planning conversation with the consumer. The very essence of this conversation is what dynamic packaging technology is trying to duplicate by tracking customer preferences and providing flexible itinerary options via the Web. Like traditional travel agencies, online agencies also promote preferred suppliers, but thanks to the scale of these companies, the variety of supplier choices is far greater. More progressive travel agencies have recognized the need to move online and are embracing the new wholesale/retail model, competing with tour operators by negotiating their own net inventory and using new leisure distribution technologies to assemble packages dynamically in the backroom or at the agent's desktop. As dynamic packaging matures, traditional travel agencies will continue to lose business to competitors that offer flexible online vacation planning.

Online Travel Agencies

Online agencies have quickly embraced packaging as a means to bolster margins and increase volume. These companies essentially pioneered the concept of the combined retailer/wholesaler. The growth of the online merchant model corresponded to the economic downturn and excess hotel supply, allowing the online

agencies to establish a broad range of merchant rates for use with dynamic packages.

These companies are also implementing direct connection technology to communicate electronically with suppliers, eliminating the need for faxing. The ability of the online agency to promote dynamic packaging through mass and local media advertising is a strong competitive advantage. Online travel agencies are expected to account for 83% of all U.S. online package sales in 2006.

Suppliers

Suppliers have traditionally offered vacation packages marketed under their brand that are outsourced and managed by a third party. The goal is to capture the lucrative vacation planning market while ensuring that the customer stays brand loyal.

In an effort to capitalize on the emerging dynamic packaging market, many suppliers have launched dynamic vacation planning capabilities on their sites, either through private label agreements with online travel agency systems (e.g., Expedia's WWTE or Travelocity's Site59) or by using technology from companies such as the Neat Group. Other vendors either from the traditional tour operator software space (e.g., Accovia, Fourth Dimension Software) or Internet-based distribution arena (e.g., Datalex, EzRez), are actively pursing direct relationships with suppliers to help facilitate dynamic packaging directly from the supplier Web site or through an established distribution network.

In the hospitality sector, the type of product offered can impact the value of dynamic packaging. In fact, for hotels there is a full range of offerings for the consumer, from the basic commodity-type hotel room to a full service resort. Packaging simple hotel inventory with air, car and activity components can help sell distressed or high demand inventory opaquely. The resort sector is a bit different but can also benefit greatly from dynamic packaging technology. Often, because resorts are in more remote locations, the inclusion of air to bring customers to the property is necessary. Activities available at the resort may be an integral part of the vacation experience, and are often an important source of revenue; thus selling dynamic packaging has a core value to the resort segment.

Section Four

Technology Trends

Common Technological Themes

Most tour operator technology has its roots in mini-computer or client-server architectures. All information was input into a central database that was used primarily to create static packages and power the call center. In today's environment a more flexible, modular system is needed, with information captured from multiple sources and distributed to a variety of front-end systems. This modular approach utilizes the latest IT theories regarding service-oriented architectures (SOAs).

SOAs are quickly becoming the standard approach to travel system design. Service-oriented architecture is essentially a collection of services that communicate with each other. The communication can involve either simple data-passing or it could involve two or more services coordinating some activity. SOAs are not new. The first SOA used DCOM (Distributed Component Object Model) or Object Request Brokers (ORBs) based on the CORBA (Common Object Request Broker Architecture) specification. DCOM, developed by Microsoft, is a protocol that enables software components to communicate directly over a network in a reliable, secure and efficient manner. CORBA is an open, vendor-independent architecture and infrastructure that computer applications use to work together over networks. In more recent years, Java or .NET have become the standard connection technologies for SOAs. Java is a cross platform language and architecture that allows the creation of powerful, enterprise-worthy programs that run in the browser, from the desktop, on a server, or on a consumer device, and .NET is a set of software technologies developed by Microsoft for connecting information, people and systems. In a true SOA architecture, the service must be a function that is well-defined, self-contained, and does not depend on the context or state of other services.

The N-Tier Internet Computing Model

A common architecture for dynamic packaging is emerging across suppliers and categories reflecting an N-tier computing model. N-tier architectures create a flexible and reusable application. By separating an application into tiers, developers only have to modify or add a specific layer, rather than rewrite the entire application for modifications. In the term "N-tier," "N" signifies any number of distinct tiers used in the architecture (such as 2-tier or 4-tier). In our sample case, there are three layers (see Table 4.1):

- Procurement Layer
- Business Logic Layer
- Presentation Layer

Each layer plays a crucial role in accessing, managing and presenting information for dynamic packaging capabilities.

Procurement Layer

At the heart of this emerging architecture is a multi-source procurement engine. Historically, tour operators used a database as the main source of inventory for their packaging systems, reflecting block allocations from hotel suppliers. As suppliers change their business practices and move away from blocked space, newer systems need to adapt and capture "just in time" inventory. True dynamic packaging enables individual inventory components to change based on business rules.

Suppliers want to maximize yields while intermediaries want to achieve the highest possible mark up on the total package. The emerging architecture for dynamic packaging engines described here is ultimately designed to satisfy both supplier and consumer goals, while most systems in place today have not achieved these dual objectives. By assembling inventory dynamically, the price can fluctuate based on pre-determined business rules. This gives more control to the supplier.

The seamless integration of multiple inventory sources represents an important aggregation point for leisure travel distribution. Wholesalers or tour operators have always acted as aggregators of disparate inventory. The difference in the emerging dynamic packaging systems is the ability to assemble inventory at the point of sale and alter the components based on business rules that reflect the goals of the supplier and ultimately the customer.

Connecting to Multiple Sources of Procurement

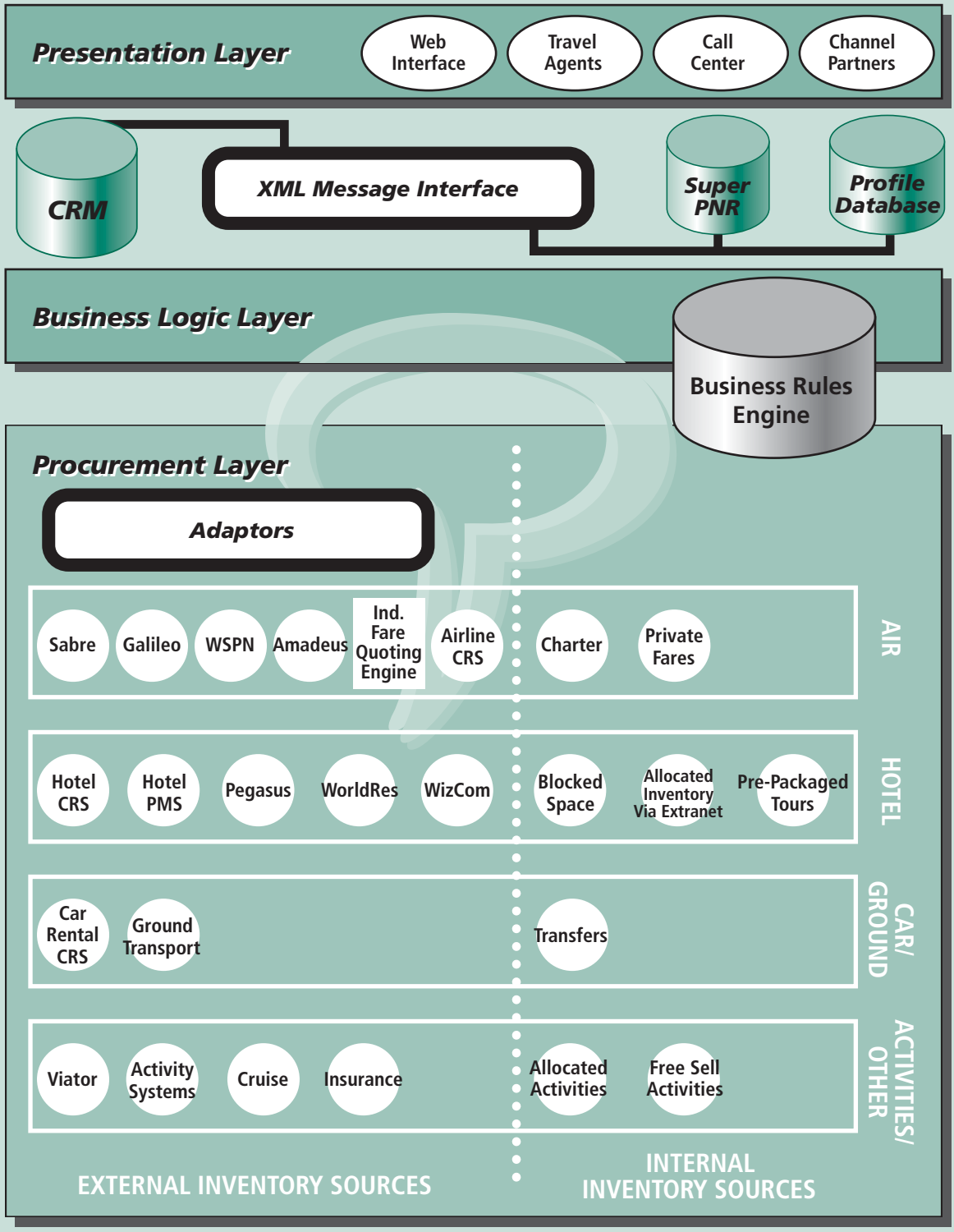
In standard computing terminology, enterprise application integration (EAI) is often made easier by a set of standards that is used to connect disparate systems. In the travel industry, the Open Travel Alliance (OTA) has published Extensible Markup Language (XML)-based schemas that represent various parts of the travel transaction. However, as in the case of many attempts at standardization, the schemas sometimes lack the necessary detail to be utilized fully as a solution for all parts of the procurement challenge. As a result, vendors often start with the standard, but then customize it to meet their specific needs.

The emergence of Web Services standards is also helping to drive some commonality among solutions. It is important to note that system integration requires that both ends of the connection provide an open interface into the system's functionality. Unfortunately, many legacy travel systems lack the ability to allow access to all system functionality despite the emergence of these new tools. While most leisure distribution companies are embracing XML and Web Services standards, the types of inventory sources targeted depend on the vendor's approach to the market. Some vendors are only creating procurement interfaces based on specific customer needs, while others have a targeted strategy to automate all major sources of procurement.

Air

Integrating different types of air components has always represented a challenge

Table 4.1
Emerging Common Architecture for Dynamic Packaging



Source: PhoCusWright Inc. and Travel Tech Consulting, Inc.

to traditional tour operator systems. In some severe cases it was not uncommon for the tour operator to access air inventory from different systems and then manually combine the results. Global Distribution Systems (GDSs) have traditionally been the source for published air and block inventory, and charter inventory and negotiated rates were stored in the tour operator database. Comparing these choices in real-time has been a major obstacle to efficiency for traditional tour operators. Automating this process is crucial for dynamic packaging systems. It is essential to apply business rules to these inventory sources in order to obtain the optimum price for a given itinerary.

The Department of Transportation (DOT) had sunset all rules regulating the GDSs after July 31, 2004. As a result, accessing a single GDS may not provide complete access to inventory. With GDS deregulation, suppliers are free to distribute inventory in any way they choose, and thus may not house the same level of inventory in all four GDSs or may opt for a direct connection strategy. More progressive solutions can access multiple GDSs and combine the results in a single Super PNR (passenger name record) that exists outside the GDS and reflects all itinerary elements.

Newer solutions that have recently been brought to the market, such as Accovia's *Dynamic Pricing Air Solution*, utilize third party faring technology from ITA Software to calculate the best airfare from internal and external sources. ITA Software receives a feed directly from the Airline Tariff Reporting Corporation, which includes all rules for published and negotiated fares. The system allows for unlimited combinations, prices the itinerary and checks the fare rules and availability in one call. Contracted fares are also loaded directly into the Accovia database and incorporated into the fare-quoting process. Queries to the faring engine are constructed dynamically for each request, ensuring that the latest rules are always considered. This integrated faring- and rules-based approach to the air component of dynamic packaging is essential to deliver the flexible solution needed by the supplier and the consumer.

Hotel & Lodging

The online merchant model has revolutionized hotel distribution, much to the chagrin of many hotels. Supplying wholesalers with net rate inventory has been standard practice for many years. The term "merchant model" refers to the classic business practice whereby a retailer or wholesaler acquires inventory at a net rate and then marks up that inventory for sale to the public or through another channel. The Internet has accelerated the collapse of the traditional wholesale/retail distinction. The new combined wholesaler/retailer sells the net rate inventory directly to the public.

During the economic downturn, hotels embraced the merchant model, distributing significant volumes of net rate inventory through various online sources. Often these merchant sites offered lower rates than the branded supplier sites while profiting from mark ups as high as 30%. This has caused many hotels to pull back on these third party merchant deals.

In an effort to gain control over merchant inventory, the major hotel chains have implemented price guarantees for reservations made on their Web sites. Dynamic packaging technology represents a new wrinkle in the battle for rate integrity. By its nature the components of a package are opaque and thus hotels have more

flexibility in discounting their rates without cannibalizing other market segments. The improving economy and resulting increased demand for hotels is changing the merchant model, reducing margins for the online agencies.

The growth of dynamic packaging systems has spawned a new way to sell perishable hotel inventory. The historic, highly inefficient process of reporting sales via fax to the hotel supplier is being replaced by new direct connection technology that taps into a hotel's central reservation system (CRS) or property management system (PMS). Connections through switches or aggregators such as Pegasus, WizCom and WorldRes represent other options for the establishment of electronic connectivity for hotel procurement in new dynamic packaging platforms. Pegasus recently introduced PegsTour, a new service designed to automate bookings by wholesalers and tour operators for their allocation-based hotel inventory and extra-inventory requests. PegsTour automates key booking processes in the wholesale market by enabling an electronic interface for operators and their system providers that connects them to multiple hotel CRSs.

Online agencies use extranet interfaces to allow hotels to allocate inventory. This allocation is then stored in the agencies' internal systems. Unfortunately, this type of connectivity does not allow the hotel to control inventory through traditional yield management systems that reside at the CRS or PMS level. Third party software from a variety of vendors is now available that enables hotels to manage inventory through various channels, and some of these applications do provide direct interfaces to hotel systems.

Car Rental and Ground Transportation

Car rental inventory can be accessed through the GDSs or a direct connection to rental car CRSs. Ground transportation has traditionally been handled through fax communication. Few companies have systems that enable pure electronic communication for procurement of transfers and other ground arrangements. To sell ground transportation, most wholesalers create inventory within their internal databases to enable the sale of transfers on an as-needed basis as part of a dynamic package. This provides the wholesaler with the ability to include ground transfers as part of the itinerary. The completed reservations are then faxed or emailed to the ground transportation supplier.

Activities

Adding activities such as attractions, water sports, tours and show tickets represents the most significant growth opportunity for dynamic packaging on the Web. Developing electronic connectivity to these procurement sources is not a simple task, as many service providers (often small, independent operators) lack the open systems to enable real-time electronic commerce. In the traditional tour operator model these activities are loaded into internal systems on an allocated or free-sell basis.

Online travel agencies have developed their own databases of activities and/or work with companies such as Viator (see Company Spotlight, page 4.6) for access. These activities are sold on a free-sell basis with the exception of specific tickets for shows or sporting events, which may be provided on a limited allocation basis. In the case of a free-sell arrangement, reporting has often shifted from fax to email, an improved but not true connectivity solution.

Company Spotlight: Viator

History and Company Background

Viator initially focused on delivering Web design and hosting services to travel industry clients in the Australian market. In 1999, the company entered the U.S. market via a partnership with Sabre to deliver technology services and destination travel product to its 42,000 agency users.

Viator seamlessly incorporates activities into existing dynamic packaging systems, using its consolidated database of activities worldwide. The company has introduced its own dynamic packaging plug-in enabling travel sellers to integrate activities into their own dynamic packaging systems.

Product Offerings

The company's plug-in product allows partners to include a wide range of activities in their booking path. The activities are offered to the partners at net rates, which they can mark up in the same way they mark up hotels. Viator's business logic is set around the usage rules of the activities it helps distribute. For example, if a tour requires specific payment terms, this can automatically be included as part of the reservation process.

The plug-in module takes the form of a Reference Implementation (a series of Java classes delivered as license-free source code) that the distribution partner generally uses as a starting point for integration into its own dynamic packaging system. In most cases, Viator's partners have modified the Reference Implementation significantly to reflect their own needs and designs.

Business Logic Layer

The most critical part of the dynamic packaging engine is the business logic layer. A key differentiator among systems is when and at what level business rules are applied to each individual component and the overall package. Basic static packages combine fixed prices for components and are pre-assembled. It is within the functionality of semi-dynamic vs. true dynamic packages that business rules application differs greatly.

If the supplier provides a merchant rate to an online or offline intermediary and that rate does not change based on business rules, the resulting package is actually semi-dynamic. Granted the overall price of the package may change due to inclusion or exclusion of components, or changes in dates, but if the supplier inventory remains static, these changes will only reflect a new mixture of set component pricing or vendor mark-up rules.

Component pricing is a critical aspect of true dynamic packaging. By providing static net merchant rates (generally at different pricing levels), suppliers relinquish control over their inventory. In this environment, at best a supplier can only change the amount and mix of inventory through this channel, but has little control over how the inventory is used. True dynamic packaging systems should give the supplier the ability to dynamically feed inventory to the package at the point of package creation. Suppliers need access to business rules and logic which allow them to define prices based on package variables. Ideally, dynamic package creation would combine customer relationship management (CRM) information into the process so that the value of the customer to the supplier could also be

weighed as a factor in what is offered and at what price.

Currently no system provides true CRM capability. Due to continued complaints about inequities in the merchant model, online intermediaries have recast themselves as being "supplier friendly," often delivering brand new customers based on their growing position in the market. However, unless online intermediaries can provide the level of flexibly to allow suppliers to dynamically price their inventory based on business rules rather than set merchant rates, they will never reach true supplier friendliness.

Dynamic Business Rules – Maximizing Value for Each Component

Air

Airlines pioneered the concept of yield management, using systems designed to maximize yield on individual flights. These systems are based on a supply-driven perspective on profitability rather than a true demand-driven process. Dynamic packaging engines provide new opportunities and new challenges to airline suppliers. As airlines move away from allocated block inventory, it becomes necessary to balance the price of a seat within the context of the total value of the customer and package. To achieve this, airline suppliers need to dynamically price a given seat during the purchasing process.

Some dynamic packaging systems provide rules-based capabilities that do allow the airline to alter a given price based on the relationship between components and type of package being created. However, most of these are not connected to the yield management software used by the airline, thus representing a function outside of normal pricing strategies.

In traditional static tour packages, flight selection is generally limited, often resulting in traveler frustration. This violates a basic tenet of CRM – that a preferred customer is treated the same way at every touch point. There is a danger that this same frustration is carried forth to the world of dynamic packaging, adding to consumer dissatisfaction. Airlines have a wealth of knowledge on customer value in their frequent flyer databases, and it is important to integrate that information into dynamic packaging systems. Several vendors are looking at this problem, but it is unlikely this type of tight integration will be introduced within the next 12-18 months.

Another new development would allow the consumer to redeem frequent flyer points within the context of a dynamic packaging product. Obviously this type of functionality would only be available through airline sites directly, but does represent a significant advancement in dynamic packaging technology. The integration of frequent flyer status as an element to influence dynamic packaging systems is dependent on the ability of the airlines to deploy Web Services-based interfaces to their frequent flyer databases. Look for this type of functionality to appear sometime over the next 18-24 months from various vendors.

Dynamic packaging represents a new paradigm for vacation planning; it is not a passing fad. The need for airlines to apply business logic that is gleaned from internal yield management systems and customer information is an essential part of the evolution of dynamic packaging systems.

Hotel

Hotels were the next major segment to embrace yield management technology. The hotel industry has long suffered from a set of disparate, distributed systems that do not integrate with each other. More progressive hotel chains have or are implementing the concept of single image inventory in an attempt to correct this natural conflict between property-based systems and the hotel's CRS. Without this capability, a hotel cannot take full advantage of dynamic packaging. Like the airlines, hotels need to integrate frequent guest information into the process to reflect a dynamic package that respects the true value of the customer. Hotels need to move away from a set of static merchant rates to a dynamic pricing capability that is integrated with internal yield management systems and frequent guest databases. Most yield management systems maximize hotel revenue based on demand, not individual customer value. With the deployment of dynamic packaging systems on their Web sites and with the integration of frequent guest databases, hotels have an opportunity to price a given package based on the overall value of the customer. This individualized pricing approach provides hotels with a new way to compete with online travel wholesalers/retailers.

Car and Ground Transportation

Car rental and ground transportation have generally represented secondary services to the vacation planning process. Upon more careful analysis, it becomes clear that ground transportation can significantly impact the vacation experience. A traveler's trip to the hotel can signal the start of a great experience or trigger an unpleasant first impression. From a CRM perspective, the customer should be provided ground transportation that reflects his or her value to supplier and intermediary. Offering the right ground transportation to the consumer during the dynamic packaging process requires integration with car rental and ground transfer systems.

Car rental system integration is likely to be available first, and as with the airline and hotel segments, the process should consider the value of the customer to the supplier. Car rental companies need to be able to offer upgrades and amenities to the customer during the dynamic planning process. For the foreseeable future, ground transfers will be offered from the internal inventory system. Intermediaries have an opportunity to offer enhanced ground transportation options based on the value of the package and customer, but this requires complex business rules to be associated with the ground transportation component.

Activities

As dynamic packaging systems continue to expand the number of activity options, these add-on vacation elements also need to be controlled by business rules and influenced by customer preferences. An intuitive dynamic packaging system that offers, for example, family-oriented activities reflecting the needs of that customer segment is one obvious approach, but collecting this information may present a challenge.

Different techniques and software tools have been deployed over the years to allow consumers to specify their preferences in the travel planning process. Finding the right balance between soliciting personal information and enabling an efficient travel planning process has always represented a difficult challenge. Online agencies that ask the consumer up front to specify who is traveling are able

to capture some of this information. This is a first step in the process, as it does enable the agencies to offer appropriate activities based on this data.

Presentation Layer

The area that will show the most dramatic improvement and change over the next 12-18 months is the way dynamic packages will be presented to the consumer. User interface design can be inhibited by the underlying procurement sources as well as the business logic layer. The very nature of the Web itself also prohibits the type of common operations that are found in desktop applications (e.g., drag and drop).

Many of the software vendors that are supplying the underlying technology for dynamic packaging engines have opted to provide an open-ended programming interface, offering individual companies the ability to create a customized user interface. Most also have an option to use an interface of their own design.

Companies that offer private label versions of their packaging systems generally provide a standard interface that allows customized logos but not altered booking flows. The major online agencies have deployed dynamic packaging that is integrated into their overall site design and workflow. For example, Orbitz offers a vacation planning matrix display that resembles its popular shopping matrix for single itinerary elements. Expedia's dynamic packaging engine shares familiar elements for selecting air, hotel and car separately.

Customized Interfaces

Vacation packaging technology is at the infant stage of development. The level of frustration voiced by consumers is directly related to the lack of flexibility and control of many dynamic packaging systems. Underlying most online travel design is the lofty goal of emulating the offline experience with a seasoned travel counselor. Unfortunately, most systems lack the interactive give-and-take response of human interaction. Over the last few years, some smaller companies (e.g., TripleHop, VacationCoach) have brought to market interfaces that have tried to utilize interactive preference techniques, but these companies have not been widely successful. Some supplier sites have embraced preference- and content-matching technologies from firms such as BroadVision or ATG Software. It is logical to predict that a number of innovations will be introduced in the next two years to move the industry to a more customer-centric vacation planning process.

Personal Preference Profiling

There is a basic conflict that exists between collecting personal preferences and protecting the privacy of individual consumers. Despite this, the collection of personal preferences by both explicit and implicit means is becoming part of the fabric of Internet commerce. The willingness of the travel consumer to go behind simple vendor loyalty identification to share specific preferences with a travel vendor or intermediary is directly related to three factors: 1) the ease of use of supplying this information, 2) the trust the consumer has that the information will be kept private and not misused, and 3) the value derived by delivering this information.

Most major travel Web sites (intermediaries and suppliers) already use sophisticated analytics to understand their customer behavior. Bringing this knowledge into the dynamic packaging process will

be subtle at first but grow as more value is derived from preferences that are provided by or inferred from consumer interaction.

Search Technology

Search technology is a staple of Internet commerce. Despite this fact, no comprehensive comparative shopping engine has been deployed that compares packages across vendor sites. According to the PhoCusWright/Vividence research, half of all vacation-planning consumers search the Web an average of five times before booking. Dynamic packaging technology allows the consumer to evaluate and compare multiple vendor properties and flight options within a given site, but does not address the over-arching need to simultaneously compare the offerings across the sites. Traditional search engine providers (e.g, Google, Yahoo!) certainly are well aware of this opportunity and are working on search capabilities to address this need. Former executives from Travelocity, Expedia and Orbitz have formed a new company called Kayak that is focused on travel search and may provide some technology for comparative shopping of dynamic packages across sites. The major challenge for any of these cross-site search initiatives is the ability to properly evaluate similar package elements within a single search, a daunting task considering how different sites assemble their dynamic packaging offerings.

Interaction with CRM Systems

Another immediate change to dynamic packaging interfaces will come when these systems are more tightly integrated with existing CRM technology. Companies have invested in systems and processes to measure the value of each customer and provide personalized service at all touchpoints. The value of the customer should ultimately be taken into account as part of a dynamic package, helping to drive more customer-tailored package choices. Existing databases (frequent flyer/guest) and applications (e.g., Siebel) need to be integrated into dynamic packaging to more closely align package offerings with customer value. This trend may ultimately lead to travel specific pricing for a vendor's best customers. Using CRM techniques within dynamic packaging will be a key emerging battleground between supplier and intermediary as each positions its brand to be the dominant consumer choice.

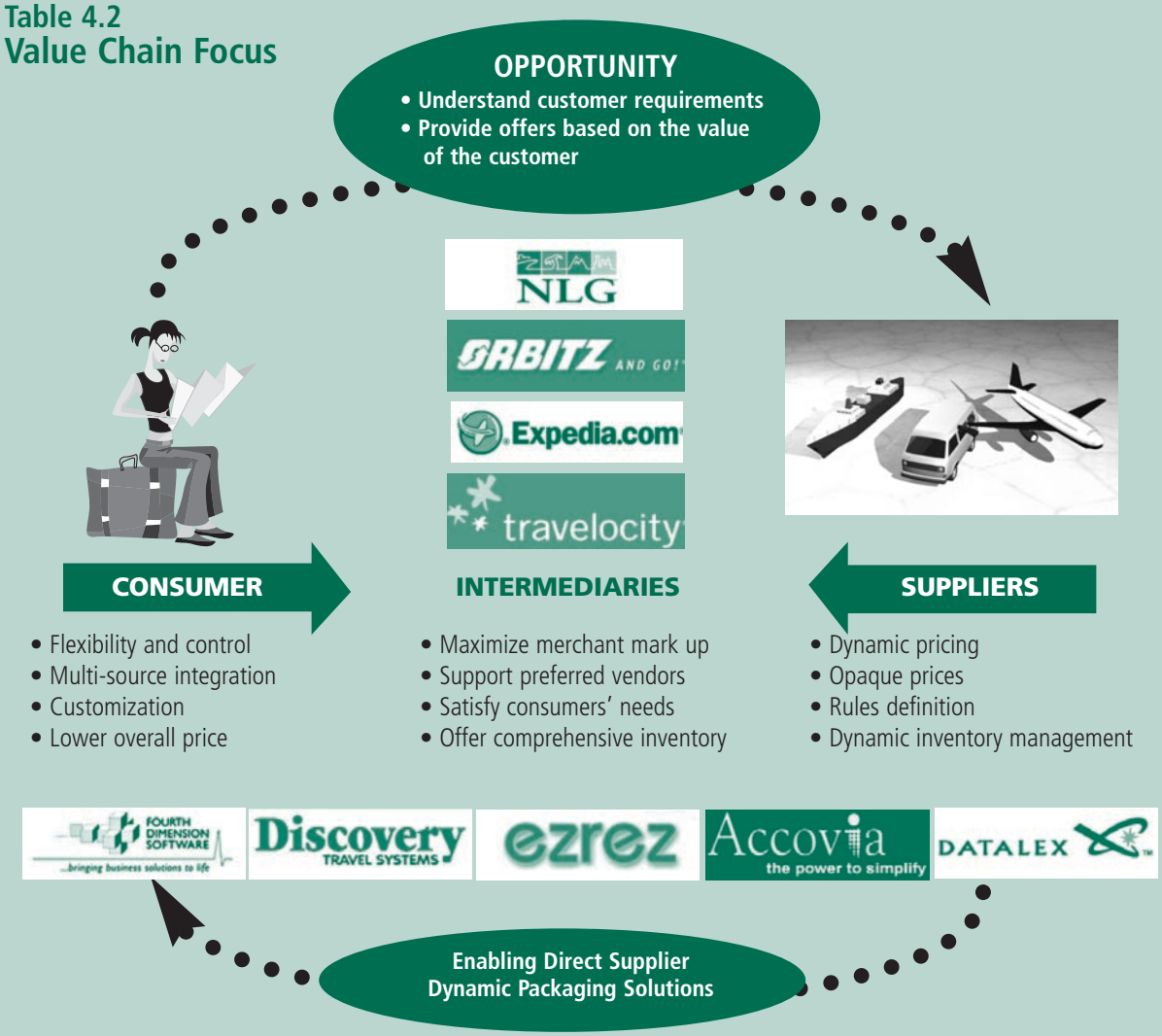
Table 4.2 describes the current focus of the various parts of the dynamic packaging value chain:

- Consumers are looking for control and flexibility integrating multiple sources of supply. Ultimately consumers want to be provided with a customized solution that delivers a combined vacation package at a lower price than the individual components.
- Intermediaries want to maximize their merchant mark up rate while supporting the needs of their preferred suppliers. Ultimately these firms are very consumer-focused and want to satisfy their customers' needs by offering a comprehensive set of inventory choices.
- Suppliers want to offer opaque pricing, but still be able to control that price dynamically based on defined rules. An ultimate goal is to integrate dynamic packaging with inventory management systems so that package inventory is included in overall inventory management goals.

In addition, integration of dynamic packaging systems with CRM systems would

allow suppliers to better understand customer requirements, and ultimately to dynamically alter offers based on the value of a given customer. A number of traditional tour operator software packages as well as newer Internet-based distribution platforms are enabling suppliers to offer dynamic packaging directly from their Web sites.

Table 4.2
Value Chain Focus



Source: PhoCusWright Inc and Travel Tech Consulting, Inc.

Emerging Technology Trends

In general, travel software development follows overall technology trends. For example, emerging technologies such as Web Services are playing critical roles in the way dynamic packaging systems access multiple sources of supply, interface business rules with traditional yield management techniques, and provide an open-ended presentation layer to allow integration with other applications.

The Impact of XML and Web Services Technology

The term Web Services describes a standardized way of integrating applications using the Extensible Markup Language (XML), Simple Object Access Protocol (SOAP), Web Services Description Language (WSDL) and Universal Description, Discovery and Integration (UDDI) open standards over an Internet protocol backbone. Most systems don't share information, either internally or externally with trading partners, on a real-time basis. 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 Web Services protocols, systems can "serve" information to other systems both internally and externally. The Internet today contains "human readable" Web sites providing content and e-commerce functions

Company Spotlight: OpenJaw Technologies Ltd.

"Web Services technology and the adoption of XML standards will change the face of travel distribution over the next few years, by simplifying and standardizing connections to suppliers. As these technologies use the Internet for communication, one data connection can be used to connect to all partners. Adoption of the industry standards by travel suppliers will reduce the need for custom software development." – John Lambe, Chief Technology Officer, OpenJaw Technologies Ltd. – from OpenJaw Technologies white paper, *How Web Services and XML Will Change Travel Distribution*

History and Company Background

OpenJaw Technologies Ltd. is a privately held travel technology company based in Dublin, Ireland. OpenJaw was founded in March 2002 by John McQuillan, John Lambe and Seán MacRoibeáird to develop the next generation of technology for travel distribution based on XML and Web Services standards.

Product Offerings

OpenJaw's first product is called xDistributor, a middleware platform that connects to multiple suppliers and aggregates the content into a single consolidated response. The system effectively makes multiple suppliers look like a single supplier. Part of the middleware platform is a rules engine that enables business experts to create the parameters for the application (e.g., which suppliers are selected based on specific channel or product requirements). The platform can work with different XML-based schemas and then standardizes the information into a common OTA-compliant format.

OpenJaw operates on a software licensing model and therefore develops connections based on specific customer requirements. The company has used xDistributor to connect to three hotel suppliers, four car rental companies, all four major GDSs as well as other Web sites. OpenJaw is currently in discussions with clients to apply its xDistributor technology to dynamic packaging to help aggregate information from multiple suppliers and translate that into a single response. xDistributor can take a single message that has multiple components and split that into individual messages to air, hotel, and car suppliers, and then aggregate the responses into a single message for the end consumer.

that are largely unintelligible to computer clients. This makes it extremely difficult to automate standard processes such as checking multiple travel Web sites for the best deal, or multiple hotel Web sites for a room in a particular city. Web Services are playing a critical role in solving this problem. Standardization also will have a major impact as more companies embrace OTA schemas. Recently, Accovia submitted an XML schema for dynamic packaging hoping to further standardize the process.

Application Syndication Technology

Syndication techniques have been part of the Web since the mid-1990s. In fact, the idea of syndicating travel content to partner sites has been part of many successful businesses, including Hotels.com and Lodging.com. The concept of syndicating applications is a bit more complex and has had limited success. Most often a plug-in is deployed which brings the standard booking interface in a private label format to partner sites, such as Yahoo! Travel's partnership with Travelocity or Expedia's World Wide Travel Exchange (WWTE) program. In these two examples, dynamic packaging is enabled as a subset of the normal functionality found at the parent sites. With these types of private label implementations, integration into the normal booking process of a site is not possible. For example, JetBlue's implementation of WWTE requires a separate

Company Spotlight: Bowstreet Inc.

History and Company Background

Bowstreet Inc. is a Tewksbury, MA, firm that specializes in tools for rapid creation of dynamic Web applications. The company has been a pioneer of Web Services and uses a factory metaphor to apply standard production techniques for the quick creation of dynamic Web content and applications. Bowstreet has developed a technology that automates the process by which service providers distribute customized products and services. In Europe, Opodo uses Bowstreet technology to customize services from the hotels, airlines and car rental agencies as well as manage content to partner sites.

Product Offerings

Bowstreet's Syndication Factory (BSF) enables companies to seamlessly embed highly customized services into partners' Web sites in a cost effective, scalable manner. For the travel industry, BSF is a tool that can aggregate inventory from multiple sources, dynamically configure content into customized products, and then deliver it across multiple channel partners in a highly personalized way. It is not a dynamic packaging engine, but it can help suppliers seamlessly integrate application content from partners to provide a more comprehensive product offering on their site.

The technology also can be used to distribute existing applications to partner sites. For example, hotels could use BSF to distribute their booking capabilities to online distributors, syndication partners such as local media outlets or directly to consumers. The technology could also be used to enable hotels to create (or augment) sub-sites for individual properties. The system has a Web interface that allows business owners to manage content creation and distribution.

user name and password. Application syndication technology could enable a more integrated dynamic packaging environment by integrating application content from disparate systems into a single booking process.

Rich Internet Applications

With the advent of Web-based computing, desktop functionality actually took a step back from the enhanced capabilities available in client server applications. Common desktop functions such as "drag and drop" were not available through the Web browser, limiting the way user interfaces could be developed. Rich Internet Applications (RIAs) are emerging to offer both the benefits of distributed, server-based functionality and a rich interface and the interaction capabilities of desktop applications. Macromedia, Inc. has positioned its Flash product beyond simple Web animation to act as a platform to enable the creation of RIAs. An RIA site provides functionality to interact with and manipulate data, rather than simply visualize or present it. RIAs may play a key role in the advancement of dynamic packaging interfaces by allowing consumers to book a combination of products such as hotels and activities on a single screen, thus simplifying the booking process. Macromedia earlier this year introduced Flex, a new platform for RIA development. Flex language, MXML, is similar to HTML but provides a richer, more powerful model than HTML. MXML allows programs to use familiar language to create Rich Internet Applications. Another pioneering company in this area is Laszlo Systems, which has developed an XML-native platform that enables companies to rapidly build RIAs. The company has a particularly strong focus on the travel industry. Because the Laszlo platform is standards-based, it enables companies to leverage existing developer skill sets and investments to create RIAs and enhance user experiences.

Section 5

Market Overview

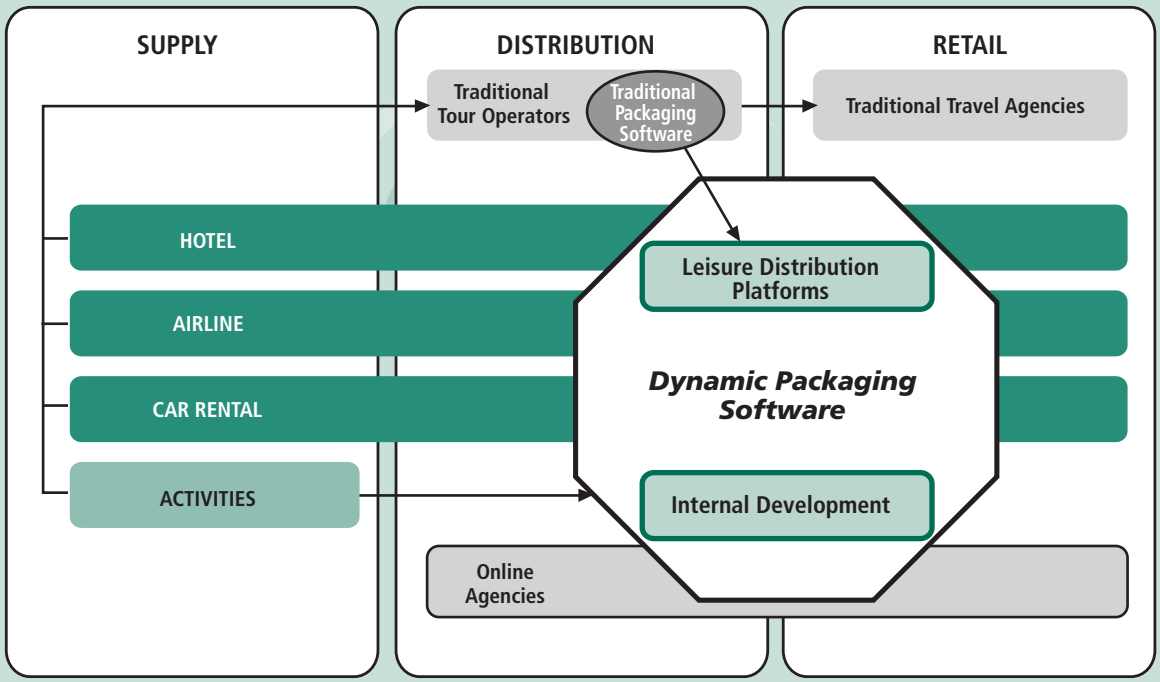
Dynamic packaging companies are grouped into three categories:

1. Traditional tour operator software vendors
2. Internet-based leisure travel distribution platform vendors
3. Online travel agencies

This categorization is a reflection of the roots of the companies, rather than a commentary on the state of their development. It is important to note that the common emerging technological architecture discussed earlier in this report is being adopted by all three segments.

Table 5.1 illustrates how dynamic packaging systems have evolved from their roots and are converging on a common market

Table 5.1
Dynamic Packaging Categories



Source: PhoCusWright Inc. and Travel Tech Consulting, Inc.

position. Historically, hotels, airlines and car rental companies have provided net rate inventory to traditional tour operators. These wholesalers used internal packaging software to create static packages published in brochures and sold by traditional travel agencies. Online agencies developed their own dynamic packaging systems while new leisure distribution platforms emerged to offer dynamic packaging capabilities directly to suppliers.

The three categories overlap as more progressive traditional tour operator software vendors evolve their systems into Internet distribution platforms offering dynamic packaging capabilities to tour operators, suppliers and traditional travel agencies.

Table 5.2 outlines the features of the systems used by 10 vendors and online retailers/wholesalers that offer dynamic packaging technology.

Table 5.2
Partial Overview of Dynamic Packaging Vendors

Technology Providers	License Software	ASP	Major Focus	Secondary Focus	Separate Air Module	Call Center POS	Presentation Layer	Private Label	Multiple GDS	Supplier Network
TRADITIONAL TOUR OPERATOR SOFTWARE VENDORS										
ACCOVIA	■	●	TO	S, TA	■	■	Std/Cus	☐	■	☐
FOURTH DIMENSION	■	●	TO	TA, S	☐	■	Cus	☐	■	☐
DISCOVERY TRAVEL	■	☐	S	TO	☐	■	Cus	☐	■	☐
INTERNET-BASED DISTRIBUTION SOLUTIONS										
DATALEX	■	●	S	TO, TA	●	●	Cus	☐	■	☐
EZREZ	■	■	S	TO, TA	☐	■	Std	■	■	■
THE NEAT GROUP	■	■	S	TA	☐	■	Std	■	■	■
ONLINE TRAVEL AGENCIES										
EXPEDIA	☐	■	OTA	S	☐	●	Cus	■	■	☐
ORBITZ	☐	☐	OTA	S	☐	●	Cus	●	■	☐
NLG	☐	■	OTA	S	☐	●	Cus	■	■	■
TRAVELOCITY	☐	■	OTA	S	☐	●	Cus	■	☐	☐

■ Indicates service provided.
● indicates partial services
☐ does not provide this functionality or service

Licensed Software – Licenses software to be operated by client at client's location
ASP – Provides an application service provider arrangement where vendor hosts software and provides Web interface for client
Major Focus/Secondary Focus – OTA = Online Travel Agency; TA = Traditional Travel Agents; TO = Tour Operators; S = Suppliers
Separate Air Module – Sells a separate standalone module to handle published, charter and negotiated air
Call Center POS – Provides a desktop application for the call center agent
Presentation Layer – Vendor provides a standard (STD) or custom (CUS) presentation for the consumer
Private Label – Vendor offers private label
Multiple GDS – Offers multiple GDS connectivity
Supplier Network – Provides net rate content from other suppliers that can be used to design dynamic packages

Source: PhoCusWright Inc. and Travel Tech Consulting, Inc.

Traditional Tour Operator Software Vendors

History and Background

Tour operator software has powered vacation package creation for the last 20 years. Often these systems were built for specific tour operators and then adapted for general market use. There are hundreds of suppliers of tour operator software worldwide.

Market Challenges and Opportunities

Traditional tour operator software vendors face a number of challenges and opportunities in the emerging market for dynamic packaging engines. Tour operators are under attack by the new online retail/wholesale market, and the true impact of this threat is only beginning to be felt. High profile public failures, such as the recent bankruptcy of Far & Wide, demonstrate the financial strain on this segment over the last few years. A large number of U.S.-based tour operators are small, family-owned businesses lacking the financial resources to deploy new systems. Atinera, the joint venture of Amadeus and Fourth Dimension Software, was an attempt to provide an application service provider (ASP) model for tour operators, but the failure of this company is another sign of tough times for the market segment.

As the economy improves, the larger, more profitable tour operators will be implementing new systems. The more progressive tour operator software vendors have already recognized the opportunity in the expanding market and are actively talking with large travel agencies and suppliers about adapting their software to meet the market need for dynamic packaging engines.

Architectural Focus

Vendors with software that still operates on mini-computers need to open these systems to bring true dynamic packaging to the consumer and travel agent. One strategy often followed is to create a Web database overlay over the legacy system. This approach creates an XML communication layer between the legacy mini-computer and a relational database. The synchronization of the two systems is usually in a near real-time fashion. An e-commerce front-end is then placed on top of this relational database, allowing the system to be accessed by consumers and travel agencies.

Since this approach relies on the mini-computer platform as its engine, functionality may be limited by the capabilities of the legacy system. For example, if the system inherently has problems with combining published, negotiated and charter air inventory, this type of functionality may be lacking in the consumer or travel agency interface. This approach may also lack the stability and robust requirements to support direct online consumer transactions.

A more dramatic architectural change that has been implemented by some of the leading traditional tour operator software vendors takes a more holistic approach to the problem. These systems have acknowledged that the legacy environment does provide some value as a source of inventory, but have shifted their development efforts to create a set of independent modules that are dedicated to the N-tier computer structure – procurement, business logic and presentation layers. These vendors are recognizing the larger market opportunity and are selling components to various segments to solve specific problems, such as complete air systems that price the itinerary and check the fare rules and availability all in one call, independent of a single GDS.

Company Spotlight: Accovia Inc.

"Everyone who currently talks about dynamic packaging is really stating a business problem that is related to dynamic pricing, not packaging. It is the dynamic price they are after." – Daniel Parayre, Director, Product Strategy, Accovia Inc.

History and Company Background

Accovia Inc. is a privately held Canadian company that was founded in 1985. Its main market focus has been in the U.S., Canada and France but its systems are installed in eight countries and in three languages (English, French and Spanish) for over 40 customers. The company has approximately 160 employees and C$23 million in annual sales.

Company Perspective and Focus

Accovia believes there are three models for providing a travel packaging solution: outsource everything, access technology from a provider with merchant deals, or acquire the technology. The first two options involve faster implementation times and lower integration costs, but outsourcing limits revenue potential and using an established channel requires sharing margins. Accovia offers the third solution, licensing software to operate the packaging system.

Accovia believes that the online retailer/wholesaler and traditional tour operator segments are on a collision course.

Accovia is currently working with two types of customers:

1. *Traditional tour operators "who get it"* – Many tour operators are not in a position to change their legacy systems, but are talking to Accovia about specific modules. Accovia's Web Services and component-based framework approach allows greater flexibility in implementing independent modules to meet a tour operator's specific requirements. The air component can be based on GDS or ITA Software for availability and pricing and on a GDS or Navitaire DirectNet for booking and ticketing. Some customers are buying the Accovia multi-channel front-end selling system which enables dynamic packaging functionality.
2. *New prospects* – The airlines, hotels, destinations and resorts, and the travel agencies and/or consortiums large enough to have negotiated deals are all fertile ground. Airlines and hotels like the opacity for both distressed and high demand inventory. These suppliers recognize the need to develop more direct dynamic packaging capabilities and have opted to be their own packager rather than outsource this function.

Company Technology and Direction

Accovia's Logitours system has been the packaging engine for many high profile sites for many years. Within Logitours, dynamic packaging has always been a basic function. The shift in the market to bring this functionality directly to the hands of the consumer or travel agent has prompted Accovia to move down a new development path. The new Accovia architecture reflects the three-tier computing model discussed previously in this report:

- Procurement Channel Manager, providing external connectors and managing access to separate components for air, hotel, car/ground and activities
- Selling System Platform with a Dynamic Pricing Rules Engine where all final pricing rules are handled, either at the

component level, within packages or at the shopping basket level, and a Contract Module defining, managing and controlling the distribution agreements
- Travel Seller, providing an open interface to a customer-designed presentation layer and workflow that enables dynamic packaging for the consumer, travel agency, or call center

Accovia has strongly embraced Web Services, which allows it to offer solutions on a modular basis. On the procurement layer, there is an air procurement manager that is Web Services-based that interfaces to ITA Software for fast shopping for validated and available published, negotiated and contracted fares. This manager can also interface with Logitours for Charter inventory that has been loaded.

The company has detached availability and pricing from the booking, ticketing and schedule change process. These are two independent streams that are recombined in the Air Procurement Manager. On the presentation side, Accovia wants to "get farther beyond dynamic pricing to dynamic offer," according to Daniel Parayre. "The product offering and packaging rules will then also change based on customer characteristics, market segment and context."

In March 2004, Accovia formally introduced its Dynamic Pricing Rules Engine, which seamlessly applies pricing rules at the individual component level or at the package level. Also in March 2004, the company gave its XML-based specifications for its Travel Application Protocol (TAP) to the OTA for use in the creation of a standards-based protocol for bundling multiple travel components under a single price.

Company Spotlight: Fourth Dimension Software

"FDS's CONTOUR has full reservation capabilities and comprehensive inventory management features."– Roman Stanell, Vice President of Business Development, Fourth Dimension Software

History and Company Background

Fourth Dimension Software is one of the oldest providers of tour operator software in the industry. The company's roots go back to custom software development for Classic Custom Vacations and DER tours in Germany in the mid-1980s and early 1990s. In 2001, Fourth Dimension Software partnered with Amadeus to create Atinera, which used Fourth Dimension's CONTOUR software in an ASP-model targeted at smaller tour operators worldwide. Due to the negative business climate during the post Sept. 11, 2001 period, Atinera was never able to gain momentum in the market and in December 2002 filed for Chapter 11 bankruptcy. Fourth Dimension continues to sell CONTOUR and has recently invested in a new marketing effort.

Company Perspective and Focus

CONTOUR contains a user-defined, rules-driven database with both dynamic and static packaging options. The system supports multi-channel distribution and provides a platform for the consumer on the Web, the tour operator call center agent, and the retail travel agent. The system supports air, hotel, car, transfers, tours,

cruises, and activities and events. As with other traditional tour operator software vendors, FDS has recognized the new opportunities that have emerged to provide packaging technology to suppliers as well as large tour operators, portals and retail agencies. SAS Airlines uses the CONTOUR platform to create its own packages. Traditionally, FDS focused on larger customers who housed or outsourced the entire technology platform while Atinera deployed an ASP model for smaller tour operators. The outsourcing option also makes CONTOUR accessible to small- and medium-sized companies that want to take advantage of the technology without the costs and burden of operating the IT infrastructure. This model (which FDS refers to as platform management outsourcing) has become a preferred method for many clients.

Company Technology Direction

Like its competitors, CONTOUR also uses N-tier architecture. At its core, the system uses HP Non-stop servers. The HP Non-stop servers (formerly Tandem) have been known for their reliability and durability. CONTOUR's business rules, content, and customer information are housed in the HP core, and over the last few years the system has been augmented using NT servers to provide a more flexible, lower cost communication layer to the core technology. It is this NT layer that feeds the presentation module to agents, consumers and the tour operator call center. The procurement layer has custom built adaptors to GDSs, car rental CRSs and activity content. These adaptors have been either custom designed or built on source-published APIs.

Company Spotlight: Discovery Travel Systems LP

"Tour operators must add value in their distribution segment… beyond the packaging of vacation elements. This value-add is the knowledge and experience to advise clients on what makes sense." – Mike Scott, Executive Vice President, Discovery Travel Systems LP

History and Company Background

Founded in 1991, Discovery Travel Systems LP began as a developer of third party cruise reservation systems. Applying the knowledge gained from building complex inventory logic and reservation systems for the cruise industry, the company created its Tour Partner software for tour operators. Over the last six months, Discovery Travel Systems is finding its greatest opportunity in a new market area: mid- to large-sized travel companies that are "reinventing themselves as new types of retailers with tour capability, with inventory management and pricing as well as dynamic packaging," according to Scott.

Company Perspective and Focus

Scott is the former CIO of Far & Wide, where he created a rich content management database that provides a full shopping experience for the traveler on the Web. Discovery Travel Systems acquired this technology and it is being tightly integrated with its call center and electronic booking tools to provide a complete solution for large travel companies.

The company aims to provide the means to translate a combination of air, hotel,

car, transfers and attractions into a logical and worthwhile vacation experience. Discovery Travel Systems brings groups of items that are interrelated (e.g., transfers with hotel and attractions) and creates a single element for use with dynamic packaging.

Company Technology Direction

The new content management database enables full shopping capability to let consumers decide how they want to make the purchase. Discovery Travel Systems believes that a hybrid (e.g., combination online/offline) model will exist in the industry for some time. Tours and cruises are more expensive and more complicated and people don't want to make a mistake without seeking expert advice. The company provides a robust platform for both online and offline support of complex vacation sales. With the addition of the content management database, Discovery Travel Systems is able to provide all the necessary ingredients – customer experience and a robust selling platform – to enable the same capabilities for traditional travel retailers and wholesalers as it does for online agencies. This is accomplished by seamlessly integrating the online shopping experience with the offline support function to service the consumer who shops online but needs offline support to close the sale.

Internet-Based Distribution Platforms

History and Background

The Internet not only ushered in a new era of e-commerce, but it brought to market a number of new technologies for connecting disparate systems. Building on this trend, a number of companies have created Internet-based platforms to help distribute leisure travel more efficiently.

Dynamic packaging is a common function offered by these companies. It is important to note that the more progressive tour operator software vendors have also embraced these new Internet technologies.

Market Challenges and Opportunities

To succeed as a new form of distribution, these entities need to provide untapped value to the marketplace. This is particularly important in an era of disintermediation. The value offered by most of the technology vendors in this category lies in providing more control to the supplier. Suppliers will value an intermediary platform as long as they can retain control over the process.

Architectural Focus

The architectural focus of this segment strongly reflects the new N-tier architecture previously discussed. Procurement is integrated from a variety of sources, business rules are applied on a component level and the ultimate presentation layer is dictated by the supplier or intermediary that offers the dynamic packaging service.

Company Spotlight: Datalex

"In order to package things and price things on a consistent basis we've 'generic-ized' a lot of concepts. For instance, if you look into our database and our data model you'll never see the word 'hotel,' you'll never see 'car rental location.' We have things called products... selling products… selling promotions… sources of media… etc. We front-ended this generic concept with all the OTA-compliant messaging and map it to our model." – Abram Richman, Chief Architect, Datalex

History and Company Background

Datalex is a Dublin, Ireland-based company that specializes in travel technology development and integration services. In 1999, Datalex purchased an independent tour operator system from Advanced Travel Systems and re-branded it as BookIt!Tour. This product was later phased out.

The roots of the company's current leisure distribution platform (recently re-branded as BookIt!Matrix) come from a joint venture relationship with Vail Resorts which began in 2000. That joint venture ended when Datalex acquired the rights to the software, though Vail continues to use the technology.

In addition to Vail, the BookIt!Matrix leisure distribution platform is currently powering LasVegas.com and is being implemented by Best Western International. Datalex also is under contract with a prominent (not yet disclosed) traditional tour operator to use the BookIt!Matrix platform.

Company Perspective and Focus

Over the years, Datalex has shifted its focus away from custom programming services to a more product-centric approach. BookIt!Matrix represents a classic buy and extend strategy whereby the client licenses the underlying platform and then works with Datalex to customize the product to meet its specific needs.

Datalex is positioning BookIt!Matrix as an Internet-based distribution and booking system for hospitality and leisure travel products. It has an open architecture that can connect to existing GDS, CRS and PMS systems. The same basic framework can be used by suppliers, wholesalers and other intermediaries to connect to multiple sources of supply and distribute to a variety of channels.

Company Technology Direction

BookIt!Matrix is built on the latest Web Services technology framework. The system was designed and built from an Internet perspective rather than adapting a traditional legacy tour product. Datalex has been a long time supporter of OTA standards, and its BookIt!Matrix product uses OTA schemas for transfer of data with third party systems.

With a flexible, open-ended architecture, Datalex notes that BookIt!Matrix will ultimately provide the framework for closer interaction with customers, allowing suppliers to acknowledge the customer and discount based on the value of that customer. Datalex is able to use CRM elements in its Boolean logic to create rules around the value of the customer. BookIt!Matrix can be deployed in an environment that includes a CRM system, for example, Siebel, that will identify the customer and return an XML message to trigger a specific business rule in BookIt!Matrix.

Company Spotlight: EzRez Software Inc.

"EzRez has a distributed network that is driven by smart search technology – meaning that each client configures its EzRez system to search these multiple sources and retrieve information and display it in the way that they dictate." – Tina Fitch, CEO, EzRez Softare Inc.

History and Company Background

EzRez Software Inc. is a Honolulu-based company that describes its system as a "Web-based travel network that connects suppliers and distributors of travel in a seamless exchange." The company was founded in 1997 and is privately held and privately funded. Currently over 850 clients and affiliates use the EzRez system.

EzRez has been under the radar of many companies because it intentionally held off promoting its product until it was in place as a proven technology. The product was developed "organically" by working with key airlines, hotels, car rental companies, wholesalers and activity providers.

Company Perspective and Focus

EzRez is focused on connecting suppliers and distribution channels – suppliers to suppliers, suppliers to wholesalers, consolidators to sub-agencies, suppliers to intermediaries – all based on rules that dictate how inventory is priced and distributed. The company has two different general service lines:

1. EzRez version 3.1 software, a complete ASP Web-based inventory management/distribution tool. Due to its modular nature, it can be used as a complete solution that includes transactional accounting, call center and inventory management, a dynamic packaging engine, individual item booking engines, charter air and group booking tools, or as an enhancement to existing legacy systems.
2. Turnkey affiliate program for portals and hotel companies that want to augment their content.

Company Technology Direction

The EzRez platform offers another example of an infrastructure using service-oriented N-Tier architecture to enable a completely modular approach built on open standards such as Linux. To connect to various sources of supply, EzRez uses XML APIs when available and has taken basic OTA-compliant schemas and enhanced them for specific supply sources. The system interfaces with all four GDSs, as well as hotel CRSs, PMSs, airline CRSs, travel insurance companies, payment gateways, online merchants, tour operator systems and activity database systems.

EzRez helps its clients facilitate consumers' desires, allowing them to compare vendors by enabling a single itinerary record number to be created by consolidating inventory from multiple legacy systems.

Company Spotlight: Neat Group

"The difference with Neat dynamic packaging technology is that it is built for suppliers with real time availability and pricing and total supplier control in the electronic realm. This is how the travel suppliers want to conduct business in the package environment." – Steve Cossette, Co-Founder, Neat Group

History and Company Background

Neat Group Corporation was formed in 1999 by a group of travel and technology executives whose goal was to create innovative methods for travel distribution. The company has been a key driver of dynamic packaging, enabling suppliers to take direct control over the packaging process. In May 2003, Neat Group was acquired by Cendant Corporation.

Neat Group's technology combines a rules-based system with merchant model capabilities and electronic settlement to enable dynamic packaging capabilities for suppliers as well as online and traditional intermediaries. With a single search, consumers can create a dynamic package that integrates components from a variety of sources. Neat Group also offers real-time dynamic packaging solutions to travel agencies, allowing them to establish their own mark up using merchant model pricing, and receive payment directly through the Airlines Reporting Corporation.

Company Perspective and Focus

One of the most important and innovative aspects of Neat Group's technology is its ability to allow suppliers to take direct control over the way merchant inventory is distributed. Neat Group technology permits the supplier to dictate the pricing rules based on other products in the package and the channel utilized. In one way, Neat Group has automated the traditional manual process that has existed between suppliers for years. Historically, an airline marketing manager might partner with a hotel to target a specific geographic market to sell distressed inventory. Neat Source provides a browser-based, easy-to-use navigation environment that allows the supplier (or travel intermediary) to create targeted campaigns by specific markets or channel, or with specified partners automating this process.

Company Technology Direction

Neat Group technology was created to work within the existing travel industry framework of pricing, recognizing the need for suppliers to apply revenue management techniques to dynamic packaging. For example, airline suppliers file fare rules through the normal process (e.g., Airline Tariff Reporting Corporation). Neat Group accesses these fare types and allows suppliers to create dynamic packaging combinations using existing inventory classifications. During the reservation process, real-time availability is checked to ensure that the given inventory is available for the package. The rules engine is at the heart of the application and allows the supplier to specify which inventory is used, with which partners, and through what channel. The application, an ASP model that is controlled through a browser, is used by Cheap Tickets for its packaging solution.

With a strong focus on supplier-direct distribution, a next logical step in the evolution of Neat Group technology will likely be to incorporate loyalty redemption as part of the dynamic packaging process. By incorporating a customer's loyalty status into the dynamic packaging product, Neat Group will enable suppliers to target unique offers to their best customers while allowing strategic cross selling.

Online Travel Agencies

History and Background

In the mid-1990s, Microsoft and Sabre recognized a new opportunity was emerging with mass market adoption of the Internet. No single offline leisure travel brand was dominant nationwide. Seizing the self-service nature of the Web, both companies launched successful online travel agencies that helped galvanize consumer acceptance of travel e-commerce. As the market has matured and consolidated, the big three players, Expedia (originally part of Microsoft but now part of IAC), Travelocity (Sabre) and Orbitz (soon to be acquired by Cendant) continue to expand their market share domestically and throughout the globe. Dynamic packaging is a core strategy for all three companies, creating a battleground where features, functionality and consumer acceptance for online package purchases will ultimately dictate future success of each player.

Market Challenges and Opportunities

Consumers have historically used the Web to purchase single components for a trip. Air sales were an early hit, especially with the introduction of Web-only fares. Merchant hotel programs played a key role in the growth of the online agency segments, particularly during the soft market that followed Sept. 11 and the economic downturn. Expedia first introduced packages in January 2001. This signaled a major shift in online travel purchasing, allowing consumers to create multi-component itineraries for a single price. The PhoCusWright/Vividence study highlights the strength of online travel agencies in the area of dynamic packaging (see Table 5.3).

Despite their innovations, the major online agencies interviewed for this research all agreed that dynamic packaging on their sites was at the earliest stage of development. The three market leaders all are making a major investment in enhancing their dynamic packaging capabilities over the next 12-18 months.

Table 5.3
Online Travel Agency Strengths and Weaknesses

STRENGTHS	WEAKNESSES
■ Strong brand awareness among traveling consumers ■ Volume and merchant model pricing translates to better package pricing for vacationers ■ One or more of top four included in all package researching ■ Perceived as an amalgamation of data from many sites, reducing traveler time to search multiple sites ■ Perceived ability to create packages compared to all other travel purchase channels	■ Perceived as generalists and not destination specialists beyond mass vacation spots ■ Search capabilities lack flexibility and brand affiliation

Source: *Vacation Packages: A Consumer Tracking and Discovery Study, 2003,* PhoCusWright Inc. and Vividence Corp.

Architectural Focus

From an architectural perspective, online agencies have a strategic advantage over traditional travel companies simply due to the timing of their internal development. The three online leaders emerged between 1995 and 2000 and thus were able to create robust infrastructures for e-commerce based on service-oriented architectures using J2EE or .Net technology. During the research process for this report, company executives for the most part were reluctant to disclose detailed architectural descriptions of their dynamic packaging products due to competitive issues. Their comments served as more of a barometer of overall market views and perspectives rather than a true validation of the common architecture discussed earlier in this report. Despite this limitation, all three vendors clearly are using Web Services standards to access various sources of supply, and are deploying sophisticated rules-based engines to control the way packages are assembled and priced.

Company Spotlight: Expedia Inc.

"Eighty-seven percent of the customers who show up at an Expedia special rates hotel are first time guests at the hotel." – Stuart MacDonald, Senior Vice President, Marketing and Packages, Expedia Inc.

History and Company Background

As the leading online travel agency, Expedia Inc. has consistently set the trends for the industry. The company helped pioneer the merchant rate hotel model with the acquisition of Travelscape in 2000 and was the first site to introduce dynamic packaging in 2001. The acquisition of Newtrade Technologies in 2002 was a clear signal of Expedia's intention to automate the hotel inventory communications process. With a strong financial structure and an ever-expanding customer base, Expedia is the company to watch as it enhances its dynamic packaging capabilities.

Company Perspective and Focus

Expedia's message to its suppliers emphasizes new customer acquisition. Hotels use an extranet to enter rates and availability based on room categories and receives information on sales activity for their property. The system pulls published, negotiated and charter flights seamlessly into the booking process.

The Newtrade technology replaces some of the activity that is performed on the extranet, moving it to an electronic communications platform. Through the Newtrade gateway, hotels can use yield management techniques to offer different package rates for different types of customers. The goal is to make it easier for hotels to communicate with Expedia and give them greater control over their inventory.

Expedia uses a sophisticated business rules engine to create dynamic packages. The company's pricing algorithms calculate the overall package price in real time, taking into account the desired goals of the supplier and potential available mark up. Expedia also has made a variety of activities available as add-ons to its dynamic packaging engine. These are primarily on a free-sell/stop-sell type of model. Selling add-on activities is a major growth area for Expedia.

In 2002, Expedia surprised many in the travel industry with the acquisition of Classic Custom Vacations (CCV), a tradi-

tional wholesaler of premier vacation packages to Hawaii, Mexico, North America, Europe and the Caribbean. The company operates as a separate subsidiary of Expedia. It is important to mention CCV within the context of a report on dynamic packaging due to the company's historic approach to the marketplace. Rather than creating static packages, CCV built its market position by providing luxury customized vacations that fit specific client needs. This is an ultimate goal of many vendors in the emerging dynamic packaging market and it will be interesting to monitor how CCV under the management of Expedia adapts its product to the Internet.

CCV is still committed to selling its product through traditional retail travel agencies. The first innovation came earlier this year when the company introduced a new booking platform for travel agencies. Consumers can go directly to CCV to obtain a vacation quote, but they still must either go to a retail agent or telephone a CCV vacation specialist to book their reservation. The types of high-end suppliers and variety of inventory choices (e.g. the presidential suite) available through CCV represents the more complex high end of the market than the traditional Expedia inventory. The evolution of the CCV platform will be of interest as all vendors move into selling more complex vacation products online.

Company Spotlight: Orbitz

"Our first goal is to provide the best shopping and purchasing experience for the customer. Our second goal is to leverage the capabilities that we have built for the Orbitz air, hotel and car product lines to complete and continually optimize the technical and operational structure required to sell dynamic packages directly, ultimately leading to a more streamlined and consistent customer experience."
– Alan Josephs, Director of Packaging, Orbitz

History and Company Background

In just three short years Orbitz has emerged as the third largest online travel site. Orbitz's MATRIX has quickly become the standard for comparative fare shopping on the Web. With the additional capital raised by the company's successful IPO early this year, Orbitz is committed to funding further innovation. In September 2004, Cendant Corporation bid $1.2 billion to acquire Orbitz, and this new investment will help further fund its dynamic packaging capabilities.

Orbitz works with leisure travel provider NLG and has launched a dynamic packaging capability that displays vacation options in its familiar MATRIX format. In addition to this current partnership, Orbitz has launched its own dynamic packaging technology.

Company Perspective and Focus

Orbitz's current dynamic packaging offering is a hybrid approach, combining in real time NLG inventory with Orbitz's hotel and air product. The system is built on a service-oriented architecture (using Java) that separates the presentation layer from the booking engine, isolating it from intricacies of procurement. Orbitz uses XML to communicate with NLG and with suppliers where available. Orbitz's key differentiator is the ability to show multiple flight options from a single packaging request.

Company Spotlight: NLG

"[NLG's goal is] to move the right product at the right time at the right price points, ensuring that the overall experience, both online and offline, is excellent, driving loyalty and bringing the customer back in a competitive market." – Ken Surdan, CTO, NLG

History and Company Background

Over the last 20 years, NLG has grown from a small start-up with a focus on last-minute travel to become one of the largest retailers of vacations and cruises. The company acts as both traditional retailer and wholesaler and sells vacation packages through major online sites such as Orbitz, Yahoo!, Priceline, CruisesOnly and Vacation Outlet. NLG developed its own dynamic packaging engine based on a flexible open technical architecture.

Company Perspective and Focus

NLG is unique in that it offers both parts of the solution – a dynamic packaging platform married to the traditional agency support environment, capturing both the online and offline consumer booking experience. Its technology is built on a robust service-oriented architecture that fully accesses inventory from multiple sources. This architecture allows NLG to combine its own merchant hotel system with any combination of third party hotel systems.

"NLG's fundamental assumption around our dynamic packaging design is that we would be doing real-time availability and pricing from the home page search," said Surdan. "NLG has accepted the investment of building engines that are fundamentally real time to insure that when NLG shows a price to a customer that the price is the right price and that it is available the dates that they want."

NLG believes that in the next 18-20 months, loyalty program inclusion in dynamic packaging will explode, and that people will struggle with this, especially with overlapping loyalty programs.

Company Spotlight: Travelocity

"There has been a significant and continued focus at Travelocity on understanding and actually predicting what the customer will be looking for and then making sure we're appealing to those wants and needs."
– Bryan Saltzburg, Vice President, Packaging and Cruises, Travelocity

History and Company Background

Travelocity, a division of Sabre Holdings Corporation, is the second largest online travel agency in the U.S. and is investing heavily in dynamic packaging technology. The company also powers the booking engine for both Yahoo! and AOL, and offers dynamic packaging on all three sites. Travelocity is in discussions with suppliers about using its engine to enable dynamic packaging on the suppliers' sites.

Company Perspective and Focus

The Travelocity dynamic packaging engine was built internally with the aim to create a platform that has multiple purposes, such as connecting consumers with suppliers, or helping one supplier connect with another to create the package components.

Hotels can enter their information via an extranet, based on established rate codes and inventory types. Travelocity uses its Sabre GDS as the foundation for its hotel allocations. The company also uses XML as a means to automate the hotel communications process. XML is used to capture real-time availability feeds, and real-time sales reporting.

Travelocity has its own merchant agreements with several hundred suppliers. The company has added attractions which can be purchased after a dynamic package has been created, using the Viator plug-in. The system is flexible, with component-level pricing that allows any element to change based on business rules.

Summary and Conclusions

The online travel industry is still relatively young, and its dynamic packaging technology is truly at the infant stage of development. This is the start of a marathon, and the ultimate winners will have to satisfy two major, and sometimes conflicting, sets of interests: The consumer's desire for control and flexibility, and the intermediary's or supplier's need to maximize profit. To get to the next level of market maturity, dynamic packaging will need to move beyond a narrow focus on distressed inventory and into the broader arena of true online vacation planning.

A common N-Tier architecture is emerging that provides the infrastructure for this evolution. Technology will continue to play a critical role in the way suppliers connect to intermediaries and ultimately to the consumer. Intermediaries need to use technology to allow suppliers to gain better control over pricing through integration with current yield management systems. Integrating supplier CRM efforts into online vacation planning is another crucial evolutionary step. Ultimately, inserting the true value of the customer into the booking process should be a common goal of any dynamic packaging initiative. Over the next 18-24 months, there are likely to be some important technological developments in the area of dynamic packaging, including some dramatic changes in the user interface design and expanded use of Web Services to access multiple sources of supply.

In the meantime, the traditional market definitions of retailer, wholesaler and supplier will continue to blur. Traditional offline tour operators and travel agencies face an ever-increasing threat to their core business unless they embrace this new architecture for dynamic packaging. Growing consumer demand for dynamic packaging will drive further innovation and profits for those progressive companies that exploit this expanding market opportunity.

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