

TRAVEL BOOKING SYSTEM

Actual context and market needs

Business evolution

During the past decade the wholesalers competed in technology, service availability and quality, volume and market share. Many of them offer today intuitive booking web interfaces in order to ease the agent's work while booking.

Due to the evolution of web technologies, standardization was possible and the wholesalers begun offering the tools to integrate their reservation systems with third party applications, bringing their service availability closer to tour operator's needs.

Why join a wholesaler?

Making the reservations through a wholesaler is far more productive for the tour operating agency, without doubt.

The main advantages for the tour operating agency:

- Does not have to handle several travel service providers contacts and contracts, price negotiations and market strategies with each of them but rather a single contract with the wholesaler
- Obtain the lowest rates based on high sales volume made by the wholesaler
- Obtain incentives for certain sales targets
- Pay for multiple reservations in a single invoice periodically and simplify the internal accounting procedures
- Benefit of a greater availability and the guarantees of the wholesaler

Today market needs

Working with more wholesalers at the same time empowers the tour operating agencies to offer an even greater variety and availability at the lowest available price. On the other side, this implies some major disadvantages:

- Agents must be trained to work with each interface of each wholesaler
- Necessity to sequentially search in each system, manually select the desired hotel among multiple results and make the reservation
- Impossibility to allow tour operating agency affiliated resellers to work with more wholesalers

Given the complexity of travel business today, a unitary system was needed to integrate at a higher level all the wholesalers, allow the tour operator to control the content, the availability and best price, manage resellers and offer them a selling platform and all in an automate fashion.

- **What if the tour operator can have access to more wholesalers, at the same time, into the same interface?**
- **What if the tour operator can fully control the resellers?**
- **What if the best search result is automatically selected for the reseller based on tour operator rules?**

Travel Booking System (TBS) is the solution to process several wholesalers and resellers management. It offers the perfect features and functions to fully control the tour operating business.

Introducing TBS

Travel Booking System was born and grown as a complex wholesaler integration solution, focused on content quality, availability, volume, management and automatism.

Started from the idea of a comprehensive computer reservations system, the project was enriched with mid-back office features in order to create a complete solution and give the tour operator all the tools needed to fully control the business.

TBS represents an advanced system which integrates at a higher level several hotel wholesalers. The accommodation service passes through the tour operator's rules, filters and restrictions to the reseller.

How is TBS different?

- Allows sales through resellers, corporation accounts and online sales, even with credit card payment.
- Allows white label to put the booking engine on any site to sell on your account
- Developed using the last technologies available in web development, being continuously improved by DCS team.
- Optimized to work with more external wholesalers by using parallel processes and multitasking, ensuring high-speed operation
- Stores its own internal database, built and periodically updated upon wholesaler's databases and uses the communication with the wholesalers only for availability and booking, ensuring small response time and low network bandwidth.
- Search results are unique. The system matches the elements replicated into multiple wholesalers (countries, cities, hotels) by joining them into a single element. This ensures coherent searches and uniqueness of elements. When booking, the system wisely selects the wholesaler which is more convenient for the tour operator, based on a set of defined rules.
- Uses digital maps to place the hotels and the surrounding landmarks
- Allows content quality management. The tour operator can sell the hotels as they come from the wholesaler or adjust the quality of descriptions, details, images, facilities, customizing the content that it sells.
- Allows multi lingual content and management for each language

- Further associates countries with continents, and cities with regions and islands, allowing the reseller to search by these elements.
- Manages the resellers in 2 ways:
 - Credit – the reseller can book within the credit limit, without payment
 - Prepayment – the reseller can book but the voucher cannot be issued until the reservation is paid and confirmed by the tour operator
- Uses automated management:
 - Automatically manages the reservations, keeps track of voids and refunds
 - Auto cancels the reservations which are due to enter cancellation fee limit, according to setting
 - Automatically issues invoices for certain reservations
- Manages different levels for mark-up (wholesaler, market, reseller, promotion) applicable one at a time
- Manages commissions per wholesalers and resellers
- Manages complex promotion schemes per different elements and combinations
- Manages selling targets and incentives for set thresholds, per different levels
- When booking a hotel which exists in more wholesalers databases the system uses complex wholesaler selection scheme (e.g. best price), defined by rules set, per different scenarios and levels (wholesaler, market, reseller, city, hotel)
- Uses advanced documents templates manager to allow design of different layouts for documents (vouchers, proformas, invoices, annexes), ensuring flexibility and adaptability.
- Allows the resellers to search and make reservations, manage their reservations, extract their vouchers, invoices and proformas into a reseller interface, into their account, based on given credentials.
- Uses e-mail alerts and warnings – configure different warning to be sent by e-mail (reservations which are about to be cancelled, communication errors, etc.)
- Advanced reporting tool, both for tour operator and resellers
- Keeps comprehensive logs which include each operation and message inside the application, from communication with the wholesalers to booking operations.
- Autotests itself by periodically executing each command and generates error reports which sends by e-mail to the administrator

Basic architecture and concept

TBS is built on the latest generation kernels and integrates new programming concepts and techniques.

The application runs on a central server which stores the databases and is accessed both by tour operator administrators interface and by resellers users using a web browser based on user accounts, with no other extra software, over TCP/IP protocol standard connection.

TBS has been designed with a flexible and modular structure, with user access per module and an easy to use plug-in system. The core of TBS is DCS Engine™, a structured and ready

to use development framework, which consists of a collection of libraries, module management, user access granting, auto-complete, XML requests, web service, etc.

Web based software has major advantages:

- Accessibility and scalability
- Low cost implementation and maintenance



Accessibility and scalability

The application is accessible virtually from anywhere. Any member, whether is an administrator managing the database and mark-ups or a reselling agent searching for hotels, can access the system based on his credentials from any location, needing just a terminal and a network connection.

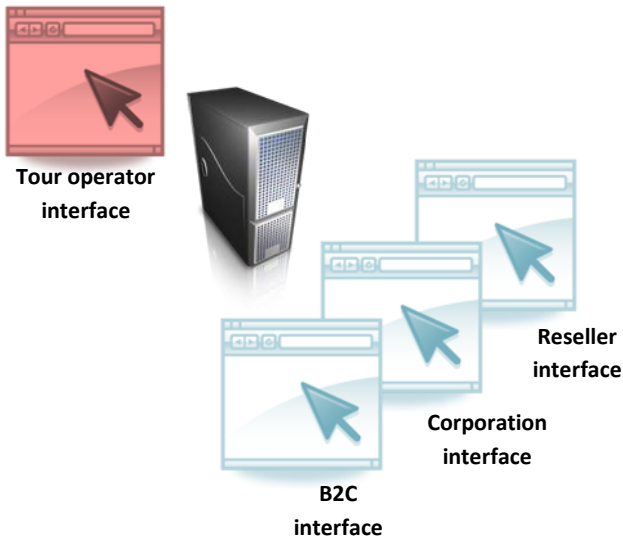
Extension of resellers number, adding more users, relocation or any other changes in the structure have no impact in application operation and usage. The architecture adapts to the new structure. The system can accommodate to various changes and grow as much as needed, limited only by central server hardware performance and network bandwidth.

Low cost implementation and maintenance

The system physical implementation supposes the application installation on central server only. All its clients can access the software over network, from their terminals, using standard operating systems (e.g. Microsoft Windows®, Linux, Apple OS, etc.) and standard web browsers (e.g. Microsoft Internet Explorer®, Mozilla Firefox, etc.)

The connection to the central server is based on TCP/IP networking protocol, over an existent network infrastructure, very common these days in Internet business.

All application updates, maintenance operations, routine checks, monitoring are made only on the central server. TBS requires no special maintenance on users terminals.



TBS presentation

The system has 2 branches:

Admin interface – the main part of the system offering all the tools to the tour operator to fully control the providers, database, services, prices, reservation and resellers, and extract comprehensive reports. All setups and operations for the tour operator are made under this interface. It basically handles the entire system.

Selling platform – the selling interface, opened to the resellers, corporations and online visitors to search for services, book, manage reservations, issue travel documents, manage invoices from the tour operator and even extract reports.

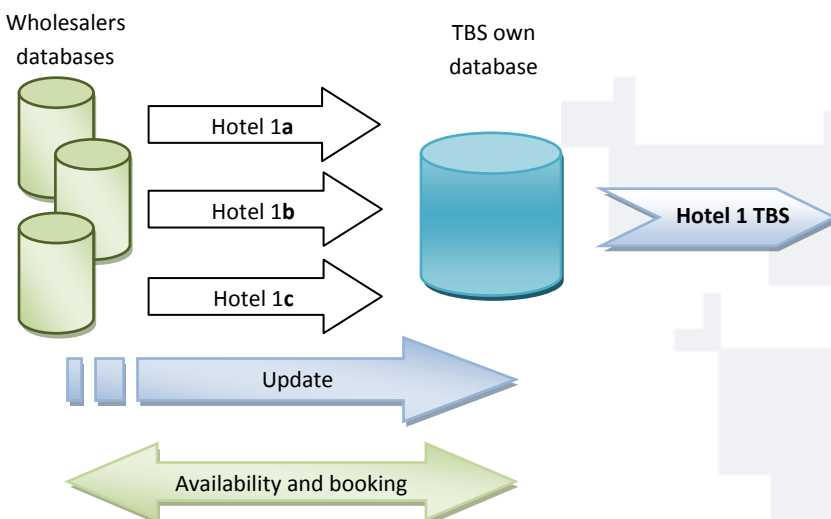
TBS own database

Update

TBS communicates with each of the wholesalers systems over the network based on communication protocols (XML files) extracting the data from their database, in order to build its own database, later used to serve content to the resellers.

- Countries
- Cities
- Hotels

All the data comes to TBS internal database during the updating process, periodically ran by the tour operator. While some elements come as new entries, others get expired and are removed from the internal database.



Unique elements

The elements might be present in more than one wholesaler database. TBS matches (manually and automatically, based on comparison algorithms) each replica of the same element and creates an unique element in its own database which is to be further addressed when searching. This way, when requesting hotels in a city, each hotel will be unique, regardless of how many wholesalers have availability. If is available in at least one, then it is a valid result.

Content management in multilanguage

The tour operator has full power over the content in TBS own database. From changing the name of the hotel/city/country to changing the descriptions, images, locations, geocoding, and even add additional information, the tour operator can customize and personalize the content shown to the resellers.

All hotel details are stored for each language. TBS is build with multilanguage support for greater adaptability to customer needs.

While working just fine with the elements as they come from the wholesaler, TBS offers this extra possibility to increase the quality of the content.

Resellers and wholesalers management

Credit and prepayment resellers

TBS manages and all de details of a reseller and handles 2 types of accounts:

- Prepayment
- Credit

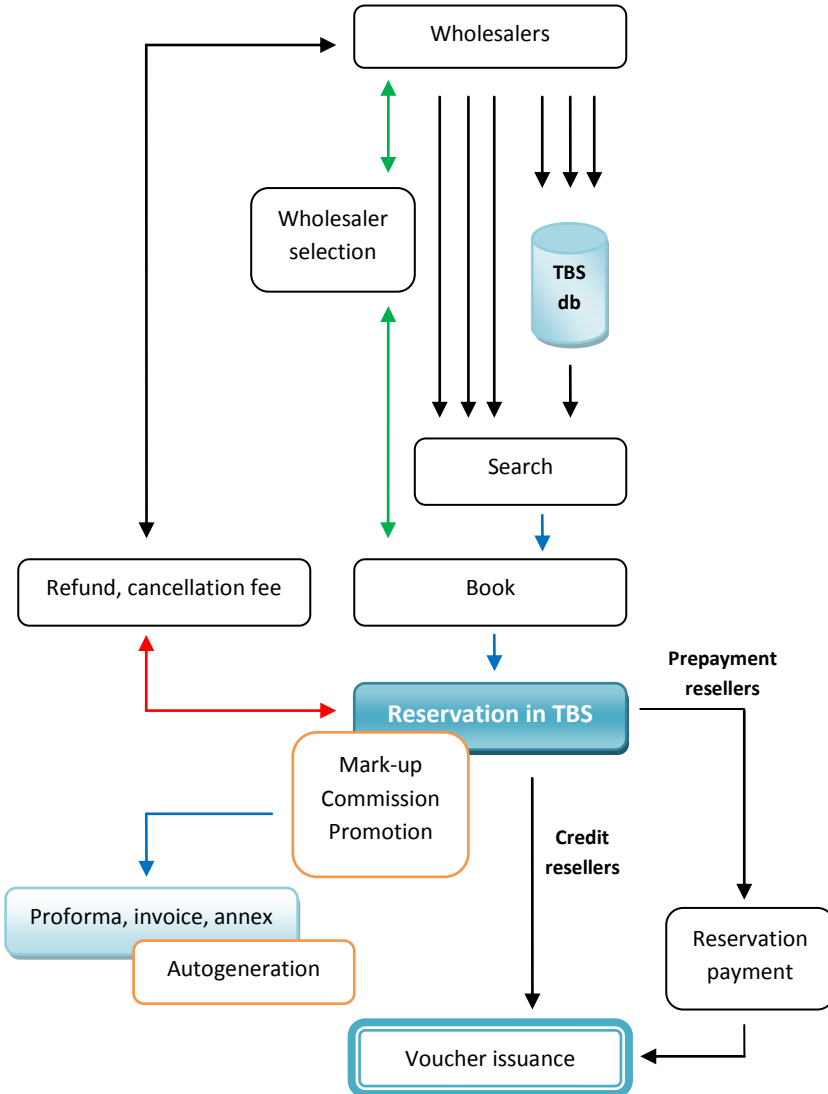
The system automatically deducts the credit when booking and reinstates it when the reservation is paid.

Preferred wholesaler

When a hotel is present in more wholesalers databases, TBS should chose the convenient source. The selection is made based on a set of rules, definable by the tour operator. Example: Select hotel from wholesaler 1 if price in wholesaler 2 is higher than price in wholesaler 1 with more than 10% from the price in wholesaler 1

The preferred wholesaler rules can be defined globally (for wholesaler) or in a narrower selection like market and even more precise - city and then hotel.





Data stream and coherence

All data issued inside TBS flows into a single secure and coherent stream, without leaks. No user can manually interfere inside the stream, except by using the controlled inputs. Each phase of the workflow is strictly dependent from the others. This ensures consistent reports and operations security.

Mark-up and commission

TBS automatically manages all pricing components, starting from the wholesaler price. It adds mark-up (tour operator fee) and commission (reseller fee).

Mark-ups can be defined for each depth level: wholesaler, market, reseller, promotion. Only one can apply at one time.

Promotions

The tour operator can define promotions and rules of appliance. Mark-up for promotion overrides the mark-ups from the other levels. The promotion has a validity period and a set of simple or combined filters for appliance.

Sales targets

The tour operator can define complex sales targets with different commission for incentive per different thresholds.

Reservations and invoices management

The system manages all the reservations, refunds and penalties and automatically cancels the reservations due to enter cancellation fee period, if set, but not before sending an e-mail alert.

TBS issues invoices for the set resellers. The invoices can be issued per single reservation or per multiple reservations for the same reseller (cumulative). Once issued, the invoice is ready to be downloaded by the reseller, in its account.

The reseller can extract the proforma and when reservation is ok, it can extract the voucher too, in its account.

Incentive invoices are automatically issued when set selling targets are met.

Selling platform

Parallel search into multiple wholesalers

Working with more wholesalers at the same time is a challenging task. Each wholesaler uses a custom protocol and each has a response time and lags.

When working with several wholesalers, these differences can affect the overall response time for the resellers and the application may suffer because of the weakest link.

In order to eliminate this problem, TBS does not handle the systems sequentially but rather uses multitasking, both in administrative and selling platform. This means that each wholesaler has its own task and does not affect the others.

This way the updates, searches and all other checks can be made in parallel, independent of each other.

When encountering errors, a system fails or responds with lag, it does not affect the overall system. Search results are shown as they are available in each system and no error stops the general process.

The overall response time is not the sum of all response times of the systems but rather is equal to the longest one, ensuring small response time despite the fact that several external systems are interrogated.

Resellers accounts

The resellers must login into the selling platform using their credentials from the tour operator. Within this interface they can search and book and then manage their reservations and invoices from tour operator, extract vouchers when reservations are ok.

They can create users and set permission levels to access their account, make reports based on their activity, using the reporting tools for resellers and even set e-mail alerts according to their specific activity.

Corporation access

Corporations are given extranet accounts in order to search, book and manage their reservations. Their designate persons are encouraged to access such an extranet to browse among multiple offers, find the best result and obtain the most out of the spent time, both of tour operator's and his.

Each corporate representative can make reservations and secure the accommodation service, before payment. The reservation can however be subject to auto cancellation if it is not paid in set due time.

Online sales – B2C

Open the sales to the whole world! Select, book and pay in less than 5 minutes, without even contacting the travel agent!

This extra feature allows the tour operator to sell online on a catchy site. Special setup is required for this interface, for parameters like Online service fee, proforma details, payment details, auto cancellation deadlines, credit card options, online sales reservation special management, etc.

The online visitor searches among large hotels database, books, selects the payment option, extracts the voucher and can go on the trip. Everything is very simple for the visitor, with as little effort as possible from tour operator's side.

If the traveler chooses to pay with the credit card, he does not even have to contact the tour operator!

Automatically sends by e-mail confirmations and messages to the visitor which can always access his account and manage his reservations

Administrative tools

Documents template manager

TBS includes an extensive documents design tool, allowing the tour operator to create multiple layouts for the documents, in order to adapt to resellers and market needs.

The document data can be overlaid on multiple layouts, designed inside TBS.

An invoice, annex, proforma or voucher can look different according to the documents layouts.

E-mail alerts

TBS can send e-mail alerts to the tour operator when certain events are triggered, like:

- Not enough credit (for credit type resellers)
- Wholesaler due date warning
- Reseller reached the next target level
- Error generated by wholesaler XML (communication error)

Operations log

The system logs all operations, from the internal commands and communication with the resellers to the messages exchanged with the wholesalers. TBS records the date and time, message content and event description. This way the tour operator is always in control of his activity, being able to search into the log at any time.

Reporting tools

The tour operator can define his reporting templates and the extract comprehensive reports, depending on the selected source

- Reservations
- Matched/unmatched wholesaler data
- Resellers (users, targets, invoices)

The reports are very useful for prediction, when planning long term strategies. The tour operator can use data mining to extract important information related to his business activity.