Did you know that Amadeus is working with Munich and Copenhagen airports to optimise their operations?
Diversification into new businesses

The digital evolution in our society is heavily impacting the travel industry. Ideally, travel providers such as airlines, hoteliers and airports would like to know where the traveller is at any time, to be able to optimise their operations and provide better services. All players, including Amadeus, need to adapt to this new environment. For example, in the future, a mobile device will facilitate check-in/out of hotels and also serve as the key to the assigned room.

Francisco Pérez-Lozao - Senior Vice President
New Businesses Amadeus IT Group
In addition to our Airline IT portfolio of solutions, we are gradually expanding into the provision of IT solutions to other travel providers. Building on our unique experience in delivering mission-critical systems for airlines, Amadeus is working in partnership with other providers to develop next-generation solutions for new businesses. We intend to leverage our technology base, shared community IT platform and expertise in the travel industry to expand our portfolio to new businesses such as Airport IT, Travel Intelligence, Rail, Hotel, Payments and Mobile Solutions.

**Airport IT**

The provision of technology solutions for airports and ground handlers is a key element of the Amadeus diversification strategy. After achieving a leadership position in airline departure control systems, in the space of three years the Airport IT business unit established a significant portfolio of 55 ground handler customers by December 2013.

Amadeus understands the increasing challenges that ground handling companies face in operating efficiently within an airport environment. They must engage with a number of different airline departure control systems (DCS) every day. This complexity of pairing ground handler systems with the systems of their airline customers leads to high IT operational costs, productivity issues, the need for hiring more ground handling staff, high training costs, and low flexibility.

This enhanced level of integration results in increased productivity for ground handlers and provides higher quality services to airlines and their customers. In 2013 we signed an agreement with Map Handling of the AMC Group to pilot Amadeus Airport Contract and Billing, a new end-to-end solution to manage and control all the administrative processes related to ground handling contracts. This solution ensures that ground handlers achieve improved tracking, reporting and billing of all services delivered to airlines.

Driven by the success of our passenger servicing systems for airlines and the adaptation of our DCS technology for ground handlers, Amadeus has decided to take a step forward and also offer IT solutions for airports. This new business brings challenges, many of which are technological. Furthermore, different players within the airport (airports, ground handlers and airlines) tend to have evolved with very different IT systems, making integration and data sharing between partners an expensive, complex and time-consuming task.

At the same time, very often some airports ‘fly blind’: lack of information relating to which passengers are at the airport, where to locate aircraft and baggage, or potentially about disruptive situations means that airport operations are under constant strain.

Our portfolio of solutions will permit an airport to benefit from an integrated suite of IT applications ‘that speak to each other’ and work in a seamless manner with the IT systems of the airport’s stakeholders: airlines and ground handlers. By sharing a common technology between airports, airlines and ground handlers, the flow of data between the different airport players is more fluid, easing the collaborative decision-making process and resulting in smoother processes for passengers whilst at the airport.
Amadeus’ portfolio for airports is a set of fully integrated solutions which are also integrated with other relevant Amadeus customer systems, such as Amadeus airline systems.

In addition, with a connection to the Amadeus network of travel retailers, airports and ground handlers, Amadeus enables airports to increase revenues, and facilitates passenger convenience by allowing them to purchase airport services at the time they are buying their trips.

Our strategy is to provide a full airport management system; to deliver an integrated suite of products to serve a broad range of the IT needs of airports, from passenger processing to ground operations to flight management.

The overall airport IT portfolio will comprise 20 software components to respond to needs of both customer groups at the ‘terminal and ramp’ and ‘movement areas’ at the airport. Nine components of the portfolio have already been launched or developments publicly announced. Our solutions are being designed and developed in collaboration with airport representatives. Airports are taking part in the different stages of the creation of our products: from design to development, testing and piloting of our solutions.

Better integration is key to the success of airports in the future, which is why we are supporting the players of the airport ecosystem by providing solutions that follow a Community Platform model approach to technology with the advantages inherent to the community model.

Our objective is to become a market leader for airport IT products and services by offering a full suite of integrated applications.

Diversification into new businesses

Amadeus modular suite of solutions covers all airport operational areas.

Amadeus is really at the heart of the travel ecosystem, permitting a smooth interaction between all the stakeholders of the airport ecosystem.
Additionally, an agreement was reached with Icelandair to develop the Amadeus Airport Baggage Reconciliation System (BRS). This new solution will offer the carrier real-time automated loading, tracking and management of baggage. As launch partner, Icelandair will deploy this solution as of mid-2014 on all its worldwide flights handled from its hub at Keflavik International Airport. The new solution, which is fully integrated into the Amadeus Airport IT portfolio and the Altéa Departure Control System, will simplify existing baggage processes, improving overall accuracy and speed and ensuring faster turnaround and departure times for all handled flights. Amadeus Airport BRS would greatly reduce the dependency on teletype messages for managing baggage processes, thus providing substantial cost savings.

In February 2014 we announced the acquisition of UFIS Airport Solutions (UFIS), a small-sized, leading airport IT player. UFIS adds a complementary suite of airport solutions with a perfect fit for Amadeus airport strategy. It also brings key customer relationships with over 30 airports worldwide, and 25 years of unique airport IT software development expertise. The majority of UFIS’s employees are based in Singapore.

Agreements were reached with Munich and Copenhagen airports to jointly develop two of the solutions: Amadeus Airport Sequence Manager and Amadeus Airport Fixed Resource Optimiser.

In collaboration with Munich Airport, Sequence Manager optimises the flight departure sequence and increases the capacity of runways. The solution aims to minimise delays, congestion, fuel consumption and passenger frustration. Sequence Manager supports Airport Collaborative Decision Making (A-CDM), as explained in the environmental sustainability section.

Working with Copenhagen Airport, Amadeus is developing Amadeus Airport Fixed Resource Optimiser. This solution is designed to determine the best allocation of gates and parking stands for aircraft against the flight schedule and airport and airline business drivers. The solution reduces costs through an optimised use of stands and gates. Both the passenger and airline experience is enhanced with a speedier turnaround process, or an easier and quicker transfer, diminishing the risk of flight delays.

Members of the Airport IT team in Germany

An illustration of how Amadeus Airport Fixed Resource Optimiser assigns gates.
More data is generated across the internet every second than was stored on the entire internet just 20 years ago. These massive amounts of data are being generated by a global internet population that now represents more than 2.1 billion people. Smartphones, websites, business applications and individual users are creating more than 2.5 exabytes\(^1\) of data each day. This amount of digital data generated by the internet, social networks etc. is referred to as ‘big data’.

The Amadeus Travel Intelligence portfolio has been created based on an exhaustive analysis of our customers’ main business intelligence (BI) and operating needs. We have conducted a series of interviews with key clients and subject matter experts (internal and external) to collect input.

Amadeus launched the Travel Intelligence business to help our customers leverage advances in technology and analytics to transform these huge amounts of raw data into meaningful, useful and actionable information.

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**Travel intelligence**

Data has always been an asset to travel providers. The travel industry was one of the first to embrace data analysis for business advantage. With access to vast amounts of data that technology like mobile phones, the internet and social media are providing, coupled with the increasing sophistication of the industry, data analysis has become a complex task.

**Amadeus Travel Intelligence: leveraging big data technologies**

2.5 exabytes

Volume of data created through smartphones, websites, business applications and individual users, each day!

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Big data is about processing large volumes of data in almost real time to create immediate value. Big data is composed of approximately 85% unstructured data and can be summarised as data with high volume, high velocity and high variety.

It can represent a fantastic asset for any business to:

- Take effective decisions quicker and with more precision thanks to automated algorithms
- Make better predictions
- Access enriched analysis, thanks to the processing of a myriad of data sources and the usage of new technologies

Big data has the potential to significantly reshape the overall travel experience.

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**Every 24 months global data volumes double**

24 months global data volumes double

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\(^1\) Exabyte: one exabyte is equal to \(10^{18}\) bytes of digital information. This is equivalent to approximately 21 million tablets with a capacity of 128 gigabytes each.
Our offer: adapted to every customer’s maturity in business intelligence

The Amadeus Travel Intelligence Engine can be utilised to support the delivery of personalised services for travellers using social-local-mobile (SoLoMo) technologies:

Amadeus travel intelligence vs. traditional BI

<table>
<thead>
<tr>
<th>Traditional BI</th>
<th>Amadeus travel intelligence</th>
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<tbody>
<tr>
<td>Limited data (Structured data)</td>
<td>No data limit</td>
</tr>
<tr>
<td>Expensive to maintain</td>
<td>Cost-efficient solutions (cloud-based &amp; open source technologies)</td>
</tr>
<tr>
<td>Low scalability</td>
<td>Agility (in processing &amp; implementation)</td>
</tr>
<tr>
<td>Under-using real BI value</td>
<td>Deep travel expertise</td>
</tr>
<tr>
<td>Lacking flexibility</td>
<td>Personalised services (specialised data scientists)</td>
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</tbody>
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Amadeus’ goal is to create high-value solutions that support analysis of the entire travel cycle. We start at the moment of travel inspiration and evaluate data to personalise offers for the entire journey.

Unlimited data sources

- Web-tracking data
- Automated data
- Financial data
- Social data
- Behavioural data
- Geolocation data

More than 50 specialists are dedicated to our Travel Intelligence business. Our regional sales staff and BI business model mirrors the needs of our customers, and our data scientists deliver personalised services and consulting.

Data protection

Data protection is a key element that has to be considered when delivering any BI solutions. Amadeus strives to continuously improve data quality and ensure compliance with external regulations such as Sarbanes–Oxley and data privacy regulations. To meet compliance requirements, Amadeus has established a series of business processes and controls to manage the data subject to these regulations.
Amadeus Web Services is a toolkit that enables railways and online travel agencies to build their own web interface, selecting the train services, fares and inventory they wish to sell online.

The platform crucially allows for seamless integration with Amadeus Passenger Name Record and mid & back-office systems, making the rail booking process simple and intuitive for the agent.

The rail industry is in an expansionary phase:

- As a result of liberalisation in Europe, high-speed rail networks are expanding.
- Consumer appetite for rail travel is growing.
- Rail is taking centre stage as the global travel industry seeks to achieve a seamless journey for the traveller.

Amadeus Total Rail is a complete suite of solutions that aim to make rail and ground travel easier. They are multi-channel, multi-railway and provide availability, booking and ticketing capabilities to both travel sellers (travel agencies, online travel agencies and corporations) and railway and ground travel direct sales channels. Examples of the products that we have developed are:

- Amadeus Rail Display is a state-of-the-art rail booking solution that allows travel sellers to carry out large volumes of rail bookings quickly and efficiently using the same interface and process flow, as well as benefitting from full integration with Amadeus products.
- Amadeus Air–Rail Display is an industry-first solution that allows air–rail comparison and the option of booking rail services from the same screen as flights, enabling railways to seriously compete against airlines at the booking stage. It has been adopted by Trenitalia, Thalys and Eurostar. The Air–Rail Display makes the possibility of interlining between railways and airlines a reality, maximising the business opportunities for both.

See ‘Multimodality case study’ p. 22
Hotel solutions

Amadeus Hotel IT solutions

Amadeus offers solutions for next-generation hotel management focused on delivering a single view of rates, inventory, reservations, content and guest information, plus enhanced distribution and merchandising tools. Built to enable hotel business and brand transformation, our Community Platform model solutions are based on open technology and offered as a ‘Software as a Service’ model (SaaS). Our solutions allow hoteliers to be more agile in delivering innovative guest services, generating new revenues and responding to market changes.

Amadeus has reinforced its vision and position in the Hotel IT business with the acquisition of Newmarket, a leading provider of cloud-based IT solutions for the hotel industry. The addition of Newmarket, based in Portsmouth, New Hampshire (US), brings a strong management team and talented workforce to Amadeus that will significantly strengthen our expertise and experience in the hotel industry. The acquisition of Newmarket positions Amadeus uniquely as an end-to-end travel and hotel IT solutions provider. The combination of Amadeus’ global scale, reach and expertise in core IT areas and Newmarket’s expertise in complementary hotel solutions represents a compelling outsourcing ‘one-stop shop’ alternative for hotel chains.

Amadeus Revenue Management

The Amadeus Revenue Management solution (RMS) is designed so that hoteliers can price their rooms efficiently. Amadeus uses forecasting models combined with detailed historical and future booking data, updated in real time, to make intelligent recommendations on rates and inventory to ultimately increase hoteliers’ profitability. As a highly configurable system, users can receive customised reports and optimal price recommendations on a property-by-property basis. The solution provides dynamic best available rates, and revenue managers can accept or reject these recommendations. The Amadeus RMS produces a daily view of each property’s business to help managers make more relevant and informed revenue management decisions to drive increased revenue.

Amadeus Hotel e-Commerce Suite

In terms of the consumer experience of booking on a hotel’s brand website, Amadeus solutions do not just customise the experience depending on where the person is located or what they are looking for – they also customise the experience based on context: what the customer is doing while searching for a hotel room. This means that the search will draw on all search patterns and history to then extract the offer and send back the most appropriate content and offers for each and every individual. This is our vision of personalised hotel searching and shopping.
Amadeus’ vision for next-generation hotel IT systems

A Central Reservation System (CRS) assists hotel managers in managing online marketing and sales, allowing them to upload their rates and availabilities onto the sales channels employing the CRS.

Property Management Systems are software applications used to cover basic objectives at the hotel property, such as coordinating the operational functions of front-office, sales and planning – check-in, check-out, guest billing, etc.

The Central Reservation and Property Management systems in the hotel industry are traditionally two completely different solutions written in different code bases and deployed as either mainframe or client/server solutions, making them expensive to maintain and difficult to deploy and evolve.

Amadeus’ next-generation Central Reservation System and Property Management System are cloud-based applications utilising the proven Altéa transaction engine, which provides hotels with a highly efficient processing solution that is modular, easier to deploy and much more user-friendly in terms of technology evolution. The Amadeus Central Reservation System, Property Management System and e-Commerce Systems are based on a single platform that shares data and information seamlessly across all systems. This fundamental strength enables hotel chains and independent hotels alike to manage their business and target their distribution in an optimal way, since all applications share the exact same information about the hotel without the need for inefficient interfaces between systems. We are also building all systems to take full advantage of social and mobile capabilities, so that the critical relationship with guests can be optimised for business performance and customer loyalty.
Amadeus Hotel Insight

We channel billions of euros in hotel revenues for hundreds of hotel provider partners through our distribution system each year. Amadeus Hotel Insight is an intuitive solution that allows our hotel chain partners to look at their hotels’ performance on Amadeus in a completely new way. Users can log on anytime, 24/7, to see the performance of their brands and properties via flexible and customisable visual dashboards.

Amadeus LinkHotel

Through Amadeus LinkHotel, we connect independent hotel properties and small to medium sized chains to the multi-GDS and online travel community, and offer a range of marketing services to help member hotels automate their distribution and promote their offers worldwide. Additionally, LinkHotel provides full commission consolidation and handling services to member hotels and booking agencies, ensuring that all hotel commissions are paid and received efficiently and on time. This service, together with booking automation, increases travel agency confidence in booking smaller and independent hotel brands. LinkHotel gives any hotel anywhere in the world the ability to distribute, market and sell its rooms to a global audience.

Amadeus Hotel Distribution

Complexity continues to define the hotel sector – both the fragmentation of the selling channel as well as changing guest preferences driven by major geographic shifts and attitudes. Amadeus brings value to both the hotelier and the travel agent by providing the content and the technology to meet the needs of today’s guests. By working in partnership with hoteliers, Amadeus is able to ensure that travel agencies and travel management companies deliver value to customers when it comes to hotels.

Via its extended hotels marketplace, Amadeus brings buyers and sellers of hotels together efficiently. We connect some 300 of the world’s leading hotel providers – chains, representation companies and hotel aggregators – and thousands of independent hotels with our global community of travel agencies. In addition, we offer high-value marketing and promotional solutions and services for hotel providers to reach the right booker with the right offer at the right time. We give our booking customers access to 650,000+ shopping options across 230,000 unique hotel properties, via custom-built reservation applications which are efficient, effective and tailored to the way our business partners operate.
Payment solutions

Amadeus payment services business expansion complements our ability to provide end-to-end payment solutions to the travel industry. We are already providing such services to a number of companies worldwide.

Together with AirPlus International, a leading global provider of payment and billing solutions for business travel, Amadeus announced in 2013 a joint initiative to offer travel agencies the Amadeus AirPlus Travel Agency Card, a new virtual payment solution. The virtual credit card solution simplifies payment to travel suppliers (such as rail, hotel and non-BSP2 carriers) and improves cash flow. Conceived as a global solution, it will gradually be deployed across different countries and regions, starting with Italy and the UK, with Switzerland and Germany to follow.

The Amadeus AirPlus Travel Agency Card, which provides guaranteed global payment acceptance via two networks – UATP and MasterCard,—enables travel agency staff to generate a virtual credit card number during a booking process and to use the number to complete the payment. The virtual credit card number is generated using AirPlus’ AIDA payment function (AirPlus Integrated Data and Acceptance), which has been integrated into the Amadeus Selling Platform. Users also benefit from a highly secure payment platform that is fully compliant with PCI DSS1 security standards. This tool will enable travel agencies to easily track and reconcile payments, in turn saving time on a daily basis and reducing errors.

2 Bank Settlement Plan (BSP). A BSP is an electronic billing system designed to facilitate the flow of data and funds between travel agencies and airlines, centralising the information, as opposed to establishing multiple relationships between travel agencies and airlines.