Introductory presentation

February 28, 2020
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Amadeus is a leading technology player in the travel industry. We are at the heart of travel. We connect the travel ecosystem—travel providers, travel sellers and travelers—at every stage of the journey. Our technology allows travel players to manage their operations with greater efficiency and serve their customers better.

Amadeus serves airlines, travel agencies, meta searchers, corporations, airports, hospitality businesses, railway companies, car rental companies and others, by operating two complementary and synergistic segments:

- Distribution: we are a connected and collaborative platform offering comprehensive, neutral, real-time search, pricing, booking, ticketing and processing solutions that enable commerce and transactions between travel providers, travel sellers and them with travelers, worldwide.
- IT Solutions: we offer a broad and growing set of technology solutions that enhance a wide variety of core operations to travel businesses such as sales, analytics, inventory, revenue management, departure control and payments.
We believe our leadership and success lies on 4 core strengths:

- **A deep, global footprint.** We are the leading travel technology player with the most extensive local presence. This allows us to serve our customers more effectively and to anticipate market trends better. We also believe we attract the best talent in the sector, commanding vast experience, and who are committed to our vision. More than 17,700 Amadeus employees work every day to make our vision a reality.

- **Innovation and technology.** Technology is a means to improve quality, productivity and profitability. Amadeus seeks to anticipate industry needs through innovation. Amadeus has pioneered many technologies, from early on being the first to offer neutral flight availability to being the precursor of cloud-based solutions. Our investment focus has always been and remains to lead the industry in our ambition to be an “end-to-end” provider of the best travel solutions.

- **Robust commercial relationships.** We have long established lasting commercial relationships with the most relevant global players in travel, from global operators to niche players. This gives us unrivalled breadth and depth in our understanding of the world’s travel industry.

- **Long-term focus and proven executional capability.** We have demonstrated time and time again over three decades, our ability to deliver on complex needs. These have included some of the most ambitious technology developments and migrations ever carried out, while delivering on our commitments to our shareholders. We have had a successful track record of creating value year-on-year in terms of revenue growth and EPS enhancement. What has enabled this has been our sustained focus on the long-term.
Global leadership and expansion into new businesses

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Thanks to our core strengths, we have achieved consistent market share gains over the past decade and have increased our exposure to growth areas.

We believe we are global leaders in our two main businesses:

- We are the largest player in the travel air agency distribution business, with an estimated competitive position of over 40%.
- We are also the leading provider of airline passenger service systems, serving the whole spectrum of airlines (from low-cost carriers to full service carriers).

And we are expanding into new verticals, including the provision of IT solutions to hospitality businesses, airports and railway companies. We are also expanding our offering of payment services for our customers.

We operate stable and highly resilient transaction-based business models, linked to global travel volumes.
Our two core businesses are highly synergistic, benefitting from:

- Strong technological synergies. Our businesses share technology and product development, which gives our customers the benefit of common IT and software applications and platforms. This common technology platform gives us, we believe, a long-term competitive advantage in terms of both costs and solutions offering.

- Extensive commercial synergies. Our businesses primarily target the same customer groups and we are able to share knowledge between our businesses and use a combined global sales force to leverage the customer base of one business in order to expand the other. We seek to cross-sell our solutions across the businesses.

- Shared organisational structure. We leverage our organisational structure to support our businesses. Our global network of local commercial offices supports our businesses on the ground, providing local knowledge and improved access to our customers, while we also benefit from economies of scale through a shared customer support infrastructure.

- Being present in closely linked businesses allows us to use deep industry knowledge gained in one area of business to benefit the other.
As mentioned before, we operate transaction-based business models linked to global travel volumes.

In particular, a large proportion of our revenue is generated from the airline industry, and therefore is linked to air traffic volumes.

Since 1970, there has been a steady relationship between global GDP growth and air traffic passenger growth, with the latter having grown at a multiple of between 1.3 and 1.6 times real GDP growth on average over the period. We expect this trend to continue and are well positioned to benefit from increases in airline passenger volumes.
Our businesses have historically shown strong resilience because our revenue is linked to travel volumes rather than price. Travel volumes tend to prove more resilient during economic downturns, when travel providers generally reduce prices to maintain passenger volumes. Accordingly, we have historically experienced more stable financial performance than the end travel market.
We have consistently improved our financial performance for almost two decades. Both our revenue and EBITDA have exhibited resilience through several global economic downturns and strong growth in expansionary economic periods.

Over 90% of our revenue is recurring, sustained by long-term contracts and customer loyalty. We believe this is due to (i) our partnership approach through which we seek to establish and nurture long-term relationships with our customers, (ii) the value-adding nature of our products and services, through our continuous investment in R&D to enhance and enrich our portfolio of solutions and (iii) our customers’ willingness to enter into long-term contracts (our content distribution agreements typically have a duration between 3 to 5 years, and our airline PSS contracts range 10 to 15 years).

In 2019, our Distribution segment represented 56% of our revenue and 47% of our contribution (Contribution = EBITDA minus shared “indirect” costs). In turn, our IT Solutions segment represented 44% of our revenue and 53% of our contribution. The weight of IT Solutions both in revenue and contribution (and hence EBITDA) has increased since the launch of the Altéa PSS business in 2005, and we expect it to continue to do so (at least in the medium term), given that this segment will likely experiment a higher growth rate than the Distribution segment and its contribution margin is higher.
Amadeus: Key investment highlights

- Global leader in Travel Distribution, a resilient business
- Global leader in Airline IT Solutions, a high-growth business
- Expanding into new areas with significant market potential
- Sustainable competitive advantages driven by investment in R&D
  - Differentiated technology focus, highly invested
  - Running only on open systems
- Successful business models
  - Transaction-based: resilient to economic cycle, economies of scale
- Synergistic businesses
- Financial performance: consistent growth, profitability and cash generation
Distribution
Amadeus’ core Distribution business is the Global Distribution System (GDS), a computer reservation system with global scale. A Computer Reservation System is a technological platform to which travel sellers (online and offline travel agencies, travel management companies, meta searchers, etc.) and corporations connect to access the content of also connected travel providers (airlines, hospitality businesses, railway companies, car rental companies, insurance providers, cruise and ferry businesses and other ground transportation providers) and make bookings. This platform delivers an integrated interface displaying a wide variety of real-time available choices, prices and itineraries in a neutral and transparent manner, and provides search, booking and booking-related functionality (such as ticketing).

In addition, Amadeus offers numerous solutions and services to travel providers, related to the distribution of content through the GDS (including solutions for the display and management of merchandizing content), to travel sellers (such as search solutions and front-, mid- and back-office solutions) and corporations (including self-booking tools and travel and expense management solutions).

By offering more and more relevant travel content together with customized solutions, we create a powerful network effect that attracts more and more travel seller customers. With the very best travel sellers as customers and the right solutions to support travel providers’ business needs, we become an essential partner for travel providers looking to ensure
successful sales.

- Amadeus creates value for travel providers by extending their market reach to countries and customer segments not easily accessible through other means at a cost-efficient manner. Amadeus’ broad geographical reach is an important element of our value proposition.

- Amadeus creates value for travel sellers by providing them with access to the world’s most diverse travel network. Through a simple interface with enhanced solutions, Amadeus allows travel sellers to offer an extensive variety of choices, prices and itineraries, customized to the needs of their customers –namely business and leisure travellers. Amadeus also offers them advanced products and services that enable them to increase revenue, manage costs and optimize efficiency, as well as build their brand and improve customer loyalty.

Our network offers the broadest geographical reach of travel seller and corporation customers. Our customers range from online travel agencies (OTAs), meta-search engines and Travel Management Companies (TMCs), to offline travel agencies of all sizes, as well as tour operators.

Travel is a global industry. The large-scale distribution capacity of our travel seller network increases our relevance to providers. In turn, it allows for revenue generation supporting a higher ability to invest in technology and innovation. We reduce unitary costs enabled by the economies of scale we generate and we enlarge the set of innovative solutions we can offer both to providers and sellers. This combination helps us maintain a virtuous circle that supports sustainable growth.
Travel providers connect to the platform and provide their content to Amadeus to obtain, through a single connection, instant display of their content in travel sellers’ screens in more than 190 countries, 24 hours a day, 365 days a year. In turn, travel sellers connect to the Amadeus’ platform to access the travel providers’ content, visualise such content in an aggregated and comparable manner, search through such content and make a booking. This process is fully integrated into their workflow environment.

A large part of our Distribution revenue is transaction-based.

- Amadeus charges a booking fee to the travel provider if a booking is made by a travel seller using the Amadeus’ distribution platform. The booking fee is a fixed amount, not linked to the face value of the ticket.
- In turn, Amadeus typically pays an incentive fee to the travel seller that made the booking. This fee is a fixed amount independent of the value of the ticket sold.
- In addition, Amadeus receives fees from travel sellers for the provision of IT solutions.
We have grown from the smallest to the largest player in the market and have today the most geographically diversified global distribution business. Our success and market leadership is based on the combination of 2 factors: high levels of customer proximity and continuous focused innovation.

**High customer proximity**

We have the most extensive footprint in the global distribution industry.

We run 3 key sites: (1) our Corporate and Marketing Head Office in Madrid (Spain), (2) our main Research and Development (R&D) centre in Nice (France) - with additional large R&D centres in Bangalore (India), Boston (United States), London (United Kingdom) and Sydney (Australia) as well as others – and (3) our Data Processing Centre in Munich (Germany).

We deliver effective, local customer support through a network of major regional offices covering all continents as well as through more than 70 Commercial Offices covering operations in more than 190 countries. We are able to understand local country or regional travel markets better through our close local relationships with travel providers and travel sellers, enabling us to deliver solutions and content customized to markets’ needs to ensure these can better serve their customers, the *travellers*. This high level of customer proximity
has been critical to our success.

Our unique global footprint has helped us attract a highly qualified, motivated workforce. Talent and diversity in our people are the essential building blocks for innovation and to better understand our customers wherever they are in the world. We are able to achieve higher market shares in many regions by serving different customer needs in a diverse range of local markets.

Continuous focused innovation

Amadeus was created to find an innovative solution to a common airline industry problem: efficient distribution. That spirit of innovation prevails today and is supported by our ability to invest and our conviction that focusing on innovation will allow us to serve our customers better.

At Amadeus almost everything is inter-linked, and technology is the enabler of such connectivity. Amadeus operates a unique single technology platform where all travel participants connect. It is a single multi-provider, multi-market and multi-channel platform. This brings huge benefits and efficiencies to all of them and to Amadeus.

Amadeus has pioneered and driven key innovations in the distribution market many times, such as with electronic ticketing, electronic miscellaneous documents or low-fare search. Also, Amadeus’ Meta Pricer tool introduced calendars and flexible dates into search, ticketless-access technology (for low-cost carriers), merchandizing solutions, and we were the first to implement NDC compliant standards with a customer (with United Airlines in the United States). These and many other innovations enable Amadeus’ customers today to sell more and to sell more efficiently.

Amadeus is the global market share leader in Online Travel Agency (OTA) volumes and has historically grown with this technologically demanding segment. Our search technology allowed us to win business from other renowned tech players in this space and is powering key large OTAs and meta-search engines. We continue to advance in search, and have developed tools that enable instant results and quicker response times, which are more apt for mobile environments as well as Business Intelligence-driven shopping, enabling our customers to offer a more personalised shopping experience to their customers.

Airlines use our market-leading ancillary services and Fare Families’ technology to distribute additional content through the indirect channel. Our airline customers want to sell more than the seat to customers booking through travel agencies. Upgrades, extra leg room, VIP lounge, meals, are just a few of the services that can differentiate an airline and drive their revenues per booking higher. Amadeus helps them do that.

We have developed significant and comprehensive functionality for leading TMCs worldwide, enabling them to offer their customers cost-effective and efficient corporate travel
management. We also offer an attractive portfolio of solutions to serve corporations directly, with an end-to-end offering, combining self-booking tools with expense reconciliation workflows.
Amadeus has been able to outperform the GDS industry consistently for more than a decade, thanks to solid and sustained market share gains.

During this period, the average pricing charged to travel providers (mostly airlines) has increased, supported by:

- A positive impact from the introduction of our value-based pricing model.
- An increase in the uptake of additional functionality by travel providers.

Our value-based pricing model links the pricing of the booking fee to the economic value generated for the travel provider. The highest value is provided when Amadeus facilitates sales for the travel provider to customers that would otherwise be difficult or costly to reach (typically out of their home markets). Amadeus’ average pricing has also benefitted from our strong presence in countries with high proportion of high-value bookings (regional or global bookings).
Amadeus is today the most relevant player in the air travel industry, supported by a superior technological offering, a relevant content offering as well as excellent customer service and local relationships, enabling us to create long-term value for our travel providers and agency customers.
We see both traditional, and new growth opportunities as we adapt to an evolving travel ecosystem:

- We see traditional growth coming from: (i) expanding our content offer, by increasing the number of travel providers connected to our platform and by extending the percentage of their content offering distributed through Amadeus, and (ii) by adding new travel sellers to the network and therefore increasing the Amadeus reach for a potential sale.

- We also see new incremental growth driven by a seamless integration into the distribution value chain of the right product offered at the right time and targeted to the right traveller.

We estimate our total addressable market in Distribution to be c.€10 billion.

Expand our content offer

In order to attract the traveller, the channel needs to offer significant and relevant choice. There is still a large pool of content that is either not globally available today or not fully
integrated to cover the entire traveller journey from door to door.

- For instance, related to merchandizing. Amadeus offers three solutions to support our airline customers: Amadeus Ancillary Services, Amadeus Fare Families and Amadeus Rich Merchandizing (which enable airlines to distribute graphic content to better market their products to customers and travel agents). Merchandizing services represent a growing source of revenue for our airline customers: we estimate that on average, the sale of an ancillary service will represent a revenue uplift of between 10 and 15%. The average ticket price can increase by 20% when a Fare Families service is sold. By the end of 2019, above 80% of the bookings made through the Amadeus system were eligible to carry a merchandizing item. In terms of airline customers, 157 airlines had signed-up for Amadeus Airline Ancillary Services and 132 had implemented the solution. In turn, the Amadeus Fare Families solution, which allows airlines worldwide to distribute branded fares to travellers in the indirect channel, continued its expansion. At the end of 2019, 101 airline customers had contracted the solution and 78 had implemented it. Additionally, leading travel agencies are adopting the trend and successfully selling merchandizing products thanks to our upgraded web services solution.

- The low-cost carrier segment is also high on our agenda. Our Ticketless Access solution delivers a seamless booking process, that is fully integrated into the travel agents’ workflow to accelerate travel agent adoption. This has enabled us to sell to more than 110 LCCs. Beyond geographical expansion, LCCs are looking for new growth opportunities and have recently started to address the corporate traveller. With flexibility and intermediation being key success factors in this segment, we are seeing new opportunities in the indirect distribution of LCCs to the business traveller.

- Moving to ground transportation, we see growth opportunities to help travel sellers achieve the one stop shop status that the traveller seeks. We are strong in European rail distribution. We are making it easier than ever before for travel agencies to book rail as a complement and alternative to air on some routes. Amadeus is also adding ground transport service providers such as local private chauffeur and taxi services at major cities across the world. We can also use the travel agency channel to help airports distribute their content, such as airport parking spaces.

- An exciting, new area is on-trip services or “Destination content”. Transport providers get you to your destination but, what do you do when you get there? This can include sports tickets, tours and museums.

- No travel seller offer is complete without accommodation. We are increasing our hotel content and its availability, through the addition of new aggregators and the improvement of our web services product. Hospitality is a key area of focus at Amadeus and with the development of our Hospitality IT business we also believe there are synergies with Distribution. For instance, in making booking hotels through Amadeus easier and more profitable, for travel sellers and hotel providers. And also, by expanding the platform offer to include Meetings, Incentives, Conferences, Exhibitions (MICE) hospitality content.

By leveraging on our relevance in the indirect channel, our technological capabilities and through our extensive local presence, we are uniquely placed to continue sourcing and adding
new relevant content to our offer, improving its appeal to extend the reach of our distribution channel.

Expand our reach

In order for Amadeus to extend its reach and as a result to maximise the monetization opportunity for our travel provider customers, we offer a distinct travel seller and corporation value-proposition, based on technology and customer proximity. We believe this approach is the best way to successfully sustain and grow our reach.

We believe that our unique local presence with a network of more than 70 commercial offices around the globe, as well as multi-level support services and regional excellence centres, positions us well to provide effective customer support, understand local needs and to adapt our solutions, our implementation capabilities, and our content to such needs. With a much richer and more diversified offer, this helps travel sellers be more competitive and serve the traveller more efficiently.

We offer our customers an attractive portfolio of solutions. Amadeus Selling Platform Connect is an industry’s fully cloud-based booking and fulfilment platform. All travel agents need is an internet connection plus user credentials, with no software installation or manual upgrades required. We also provide sophisticated search solutions, such as Amadeus Extreme Search, the unique inspirational shopping solution for online travel agencies that engages travellers right from the beginning of the shopping chain even before they have decided on a destination. Or Amadeus Master Pricer with Instant Search, which delivers online search results in milliseconds with no compromise to accuracy.

Travel Management Companies and their customers, the corporations, operate in a controlled environment. Their focus is on expense control and enforcement or adoption of a policy. Anything that increases costs or reduces staff productivity is not welcome for Corporates. Airline merchandizing will only work if it works for the corporate hand in hand with the basic principles of expense control, enforcement of policies, negotiated fares/deals and duty of care. We accomplish this through i:FAO and other tools we are developing or acquiring, which provide Corporations with an end-to-end offering combining self-booking-tools with expense reconciliation workflows.

Expand our addressable markets

With the industry moving to retailing and focusing more on the traveller and personalization, there are clear gaps in addressing the full traveller experience and maximising sales opportunities. Although we are at an early stage, we see clear growth opportunities for “Pre-trip”, “on-trip” and “post-trip” sales as well as for the initial parts of trip planning (awareness and lead generation), mainly driven by advertising.

We have an important competitive advantage through our high quality search solutions and
the amount of data that our ecosystem generates. As a consequence, trials in leveraging synergies between advertising expertise and travel data are showing promising results, with a higher return on advertising spend compared to the largest players. It is an area where we see an attractive growth opportunity and where we plan to expand.
Amadeus develops state-of-the-art IT solutions and services to address airlines’ key operational requirements, including Passenger Service Systems (PSS), digital commerce solutions, merchandizing and personalization tools and revenue optimization solutions. Amadeus also supports airline customers through business consulting and process optimization.

We have become the airlines’ trusted IT business partner, motivated by:

- We have a deep understanding of airlines’ strategic business challenges, around three priority areas: revenue growth, brand loyalty and cost management.
- Based on our unique traveller insight, we position the traveller at the heart of airline strategy and determine how best to achieve airline priorities across the different stages of the traveller journey.
- Building on our PSS and shopping and retailing leadership position, and leveraging on our technology and innovation capabilities, we design our Airline IT portfolio to address airline business objectives.

For airlines to succeed in today’s world, a strong focus is required not only on cost efficiencies but also – and particularly - on revenue maximisation.
Airline revenue growth is frequently driven by delivering a unique customer experience which differentiates the airline from others and helps build customer loyalty and brand value.

At Amadeus, our solutions portfolio is designed to address these primary business objectives.

**Revenues and brand loyalty**

- Airlines need to identify new revenue streams. With our merchandizing solution, airlines can build the right offer for potential passengers in order to maximise revenue. The right merchandizing strategy also of course impacts the airline’s brand.
- Personalization is key for airlines to deliver a differentiated and more valuable experience for their customers. With our Customer Experience Management tool, airlines have a comprehensive view and understanding of their customers and are able to take action on these insights in the form of highly personalised offers.
- Amadeus’ Big Data capabilities are at the core of these tools, which allow airlines to enhance customer service and with it, customer satisfaction.
- Additional to identifying new revenue streams, airlines need to focus on optimizing each revenue opportunity. Our Revenue optimization suite of products is based on the most sophisticated techniques in the industry and are the only solutions fully specialised in travel and integrated with the PSS. In addition, we offer our airlines a Financial Suite, helping them to streamline their financial systems to reduce revenue leakage.
- Finally, another way to grow revenue is by increasing sales conversions. With our state of the art Shopping portfolio, airlines can achieve this objective.

**Cost optimization**

We continue to focus with our airline customers on cost containment, both cost of sales and cost of operations. Our Shopping products help airlines significantly reduce the cost of traffic acquisition. With our Flight Management module, airlines achieve huge savings via fuel efficiency; and with Disruption Management tools, cost savings can be obtained by reducing the impact of flight disruptions on operational costs.
A successful transactional business model

Amadeus provides IT solutions (e.g. core passenger management solutions and e-commerce)

Airline

Transactional fees and other revenue

A transactional fee is paid to Amadeus for the use of the technology (e.g. per passenger boarded for Passenger Service Systems)

Airline IT

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As with our Distribution business, most of our airline IT revenue is transaction-based (for example, in our PSS solutions we receive a fee per passenger boarded) and highly linked to the air traffic evolution.
We can say today that we are the largest provider to the airline industry for Passenger Service Systems. We currently serve almost 2 billion passengers through our Altéa and Navitaire’s New Skies PSS.

The reason for our success is twofold:

Firstly, technology. Amadeus has always set the focus on innovation and our goal is that our solutions are state of the art. We serve a very broad range of customers across all geographies, all sizes and belonging to any airline alliance. We provide solutions to airline groups that operate with a variety of business models, and we are a key enabler of much needed collaboration in the industry.

We have consistently brought innovation to the market.

- We were the first to deliver Electronic Miscellaneous Documents (EMD) technology to enable ancillary sales, following IATA standards.
- We were also the first to deliver the required business solutions for airlines to explore the merchandizing opportunity with ancillaries and fare families, with a coherent offering across all customer touchpoints.
On the technical side, we are leading innovation with Cloud Services, which allows our applications to be run anywhere in the Cloud: a real break-through that will be critical to support airlines’ future business evolution.

Secondly, we understand our industry. Travel is at the heart of what we do everyday, and we help airlines understand key industry trends, traveller demands and therefore to address their main business challenges. We see a great opportunity for Amadeus as a key player in the travel and technology industry to support airlines in achieving their goals.
Today the highest contributor to our airline IT revenue is our PSS offering (Altèa and New Skies).

The Amadeus Passenger Service System offers full reservation, inventory and departure control capabilities, delivering a unique, integrated solution.

Our PSS mainly consists of three modules:

- **Reservation**: enables our airline customers to manage bookings, fare prices and ticketing through a single interface and is compatible with distribution via direct and indirect channels, both online and offline.

- **Inventory**: addresses an airline’s inventory needs, providing functionality to create and manage schedules, seat capacity and associated fares on a flight-by-flight basis. This allows the airline to monitor and control availability and reassign passengers in real time. Inventory also incorporates a seat-mapping functionality. Each airline that uses our Inventory module must also have implemented our Reservation module.

- **Departure Control**: covers many aspects of flight departure, including check-in, issuance of boarding passes, gate control, disruption management and other functions related to passenger flight boarding. In addition, Departure Control offers aircraft load control functionality, which enables airlines to evaluate and optimize fuel utilization.
A customer using our PSS pays a flat fee per passenger boarded (PB). The fee is determined by the level of functionality that is contracted by the airline.

The Altéa PSS was developed using a modular architecture based on next-generation, open systems technology. It is designed as a highly configurable solution with a seamless integration of the applications developed on it, which all use a single data source (driving simplified processes and increased operating efficiency by eliminating duplication and inconsistency, as a single version between components of all key data is shared). It is a community platform:

- It generates economies of scale, as it is designed to support multiple customers who benefit from the combined input of a community.
- It provides customization capabilities: individual customers identify functional requirements and contribute to the platform’s enrichment.
- It can be integrated with alliances and partners seamlessly.
Travel providers are experiencing competitive and cost pressures, and as a result, many are increasingly looking to replace in-house legacy systems. By outsourcing certain core processes to third-party vendors that offer standardized and scalable next-generation technology platforms, such as Amadeus, customers are able to enhance the quality and functionality of their product and service offerings while reducing their risks and expenditure on systems development and ongoing maintenance.

Our PSS customer base has grown rapidly since the launch of our Altéa Suite to the market in 2004. We already count with 216 contracted customers which have boarded close to 2.0 billion passengers in 2019.

Our PSS customer base is spread across the globe: in 2019, 40.0% of our PB were generated by European airlines, 32.4% by Asia-Pacific carriers, 13.5% by North American airlines, 7.5% by Middle East and Africa carriers and 6.6% by Latin American carriers. The weight of the North America and the Asia-Pacific regions has increased in 2019 with the migrations of Philippine Airlines, Bangkok Airways and Air Canada.

We believe that the main reason for our success is the use of next-generation, open systems technology and a community platform model. The main benefits it provides to our customers are:
- Common development costs
- Our continuous investment ensures that the customer always enjoys state-of-the-art solutions, reducing the risks associated with large IT infrastructure fixed costs
- Its transaction-based pricing model allows customers to transform what would otherwise be a fixed cost to a variable cost
- The Amadeus PSS is offered as a Software as-a-Service (SaaS) delivery model, reducing IT infrastructure and support costs to our customers.
We estimate our total addressable market in Airline IT to be c. €8 billion.

We believe that we have ample margin to increase our share of the total addressable market, as we address business opportunities beyond the core PSS, upselling our solutions and delivering additional valuable services to our existing and new customers.

More specifically, we plan to deliver growth through the following:

**Growing our core PSS business**

The PSS business remains attractive, enhanced by Navitaire strengths, with a total potential market of approximately €2 billion (including disruption management).

While there are fewer large and medium-sized opportunities, our PSS solutions are also very well suited for smaller airlines. We stand out from our competitors as we have an attractive proposition for these smaller carriers that we believe will enable us to continue to gain market share.

**Upsell opportunities, both to existing PSS and non-PSS customers**
Upselling is another key area of our growth strategy. As you know, this is today already a reality, as our PSS customers have contracted our e-commerce solutions (shopping and retailing), Revenue Accounting, Revenue Integrity or Ancillary Services.

The opportunity is much greater, as we diversify our portfolio of available solutions. Revenue optimization, merchandizing and Digital are all areas that we are actively discussing with our existing customers. Furthermore, all of our solutions are designed to work on a standalone basis, independent from our core PSS. We have already been successful in selling some standalone components to new customers and markets, such as e-commerce and revenue integrity solutions to Chinese and North American carriers who do not have their PSS contracted with Amadeus. Flight Management is another module that is successfully deployed with non-PSS customers. We are confident that we will gradually extend our relationship with non-PSS customers with many of the opportunities discussed today.

We estimate the total market opportunity for upsell, both to PSS and non-PSS customers, at approximately €2 billion.

**Services**

In addition to IT solutions, we also provide services to support our customers. We intend to increase our focus on this area and leverage partnerships with major IT service providers, particularly with Accenture, with whom we have signed a strategic alliance.

Our expanded services offering covers: business consulting, custom software development (to adapt to the specific needs of our airline customers), business process outsourcing and IT services (to propose fully operated solutions) and hosting services. For example, we will support airlines with consulting services to help them with the execution of an optimal merchandizing strategy and to boost their ancillary revenues.

We estimate our total addressable market in this area at €1 billion. It could potentially be larger as we move in the future into the digital space.

**Other long-term opportunities**

There are a number of other—longer term—opportunities which we have identified. For example, we are uniquely positioned to lead in the digitalization of the airline industry and we are determined to support our customers in this exciting journey. As we continue to evolve in the way our customers and third parties can interact with our platform, there will be an opportunity to extend our revenue and business through ecosystem partners. Longer term, we are also looking at the opportunity linked to data monetization through analytics or advertising-based models.
New Businesses
It was clear some years ago that we had done an excellent job in serving the airline industry. It was also clear to us that there was a huge business opportunity in the travel industry beyond air. In 2012 we took the strategic decision to develop New Businesses focused on providing cutting-edge technology to other key sectors across the rest of the industry.

We set our objectives on diversifying our businesses into airports, hospitality and rail, as well as some additional areas that are transversal and relevant to all travel industry players: Payments and Travel Intelligence.

Since then, we have consolidated all of these businesses as viable stand-alone pieces within our overall offering. As well as being strong businesses in their own right, they complement our solutions offering to customers wherever they are in the travel ecosystem. We believe that we stand out in our broad vision for travel and in our executional capability today.

Amadeus is unique in this respect. We provide technology at all stages throughout the traveller journey, technology that is based on the most advanced architecture and standards, enabling seamless integration across touchpoints and verticals. Amadeus connects the dots between players right through the travel ecosystem addressing increasing demands from travellers, enabling our customers to serve their customers better.
M&A has formed an important part of our strategy. We monitor the market for potential opportunities regularly and may perform acquisitions in the future, if they support the delivery of our strategy and accelerate our time to market.
We calculate our estimated addressable market on these New Businesses at €14 billion. We have increased our Hospitality opportunity driven by the TravelClick acquisition that opens up a new customer segment and enlarges our product portfolio.

We are seeing a growing customer base in these businesses and believe that our offer is clearly differentiated from our competitors. Our technology is offered to our customers on a flexible and scalable ‘pay-as-you-use’ model. Our cloud-based systems eliminate the need for local hosting operations and make it easy to evolve and upgrade systems. Our economies of scale enable us to reinvest in our platforms ensuring they remain at the technological cutting edge. This combination of ‘pay-as-you-use’, scalability, flexibility and investment creates a very attractive offer to our customers.
Hospitality represents the largest of all of our addressable markets. It is however, a fragmented and complex ecosystem.

We serve today more than 49,000 properties through our IT solutions, positioning us as one of the top players in this space.

The hotel properties of our hospitality IT customers are located in more than 175 countries although our activity is currently focused mainly in the US. Most of our customers are headquartered there. Not only for us but also for them, geographical expansion (non US centric hotel-chains and other hospitality customers) leveraging on Amadeus global presence is a growth opportunity. Our high customer satisfaction is also we believe a strong base to build on for the rest of the business.

Another area of growth potential is Distribution. We have done hotel distribution for many years, but our distribution of hotel content has been mainly limited to large hotel chains, selling through travel management companies to corporate customers. Leisure travel agencies demand more varied hotel content. This content is highly fragmented and has traditionally been a strong market for content aggregators or online players.

We believe there is an opportunity to (i) improve the GDS hotel content offering and (ii)
penetrate the leisure space through leisure travel agencies and online travel agencies.

We are sourcing new content through aggregators that we have integrated in a wide variety of markets. During 2019 we have insourced content from Booking.com, Agoda and Restel, increasing the number of hotel shopping options available in the Amadeus system to more than 4.0 million. We think this business will generate growth, with high profitability, benefiting also hoteliers, as the GDS represents one of the most cost-effective sales channels for them.

Our vision in Hospitality is similar to our other Amadeus businesses. We see time and time again how we are able to cross-fertilise ideas and technology from one travel vertical to another. Our capacity to deploy advanced modular technology enables us to benefit increased efficiency. We also see important value creation potential through revenue synergies stemming from the product and segment expansion the TravelClick acquisition produces for us.
Focusing on our hospitality IT business, we offer a guest-centric platform built with a modular architecture where all components are integrated seamlessly. Our customers can assemble components based on their business needs and benefit from best-of-breed solutions that are proven market leaders. The solution is also designed to accommodate a gradual transition from legacy systems as part of an overall change management exercise. In certain circumstances, we will partner with existing solutions.

Central Reservation System

Our next-generation, on the cloud Central Reservation System is the cornerstone of our solution. Developed as a revolutionary cloud solution, it is purpose built for the future. That future means true guest personalization. Think of how successful the airlines have been with offering ‘ancillary items’ for sale. Hotels are evaluating the potential of the itemisation of the value they offer and how our single inventory solution can support it.

Our CRS follows our transaction-based pricing model making it an attractive solution for hotels looking to avoid an upfront financial outlay. It will be sold on a SaaS basis. Hotels are keen to move to a ‘utility model’ where they pay for use and value provided, converting CAPEX into OPEX. We believe this creates strong bonds with our customers as we are heavily invested in their continued success.
Property Management System

Our Property Management System (PMS) is an integral part of our strategy. We plan to leverage the investment made in our CRS, by having a PMS that can be sold either as a module or tightly integrated with our CRS.

Our PMS is component-based and cloud-native. A ‘Single Source of Truth’ design approach makes integrating third party systems, such as Customer Relationship Management, seamless, guaranteeing that data is exactly the same among all systems. Layered and modular design follows a similar architectural pattern adopted by Amadeus’ CRS.

Our envisioned CRS and PMS represent the core of a common platform to optimize the current distribution environment. The two systems are combined as one and supported through the Cloud. The key elements are:

- Central Inventory: CRS and PMS remain always in sync, since inventory is stored in a single repository.
- Availability: available rooms kept in a single location, to be shown through any channel in real-time.
- Rates: to be stored in the Cloud and to be accessed directly by the CRS or PMS. One single copy of the rate plans to be used by CRS / PMS regardless of the point of sale.
- Customer / guest profiles: profiles are centrally stored. Guest experience is significantly improved, preferences easily consolidated and then used for outbound marketing and guest interaction.

With channel management controlled centrally, specific marketing plans for the hotels can be executed on a global, national, region, or local level.

Sales and Catering

Amadeus Sales and Catering (servicing the MICE -Meetings, Incentives, Conferences, Exhibitions- business segment) is a leading core solution for hospitality customers that enables the optimization, marketing and sale of function rooms, increasing revenue and improving guest satisfaction.

Many large hotels do +30% of their business with groups or MICE. With the acquisition of Newmarket at year-end 2013, Amadeus acquired a strong business in this area. We are the industry leader in hotel group and event management. Our main presence is in North America but we have installed our solutions in over 150 countries, with a focus on top chains, mid-size management companies and independent hotels. We also have a strong market position in
casinos, a segment that requires complex functionality.

We are transitioning to a fully SaaS business. Currently, most of our revenue is based on subscription fees.

**Service optimization**

In an age of prolific social feedback, providing great service delivery and recovery is critical. Amadeus improves service by making it more efficient. Amadeus Service optimization is a leading enterprise-enabled solution for automating and tracking preventive maintenance, service orders and guest requests. Our service optimization tools help hotel groups to raise quality scores by improving the guest experience across all touch points. In addition, it optimizes labour utilization, reduces maintenance costs and increases assets lives.

Hotel groups from small to large and spanning from a grading of three to seven stars rely on Amadeus Service optimization tools that are tailored to their needs.

**Business Intelligence**

Business Intelligence serves the needs of hotels for BI reports to support their decision-making processes. This solution helps hotels view and understand things such as, share of bookings or pricing across channels vs a competitive set, based on various data sources from across the hotel ecosystem. Media and BI serve all types and sizes of hotels.

**Media**

Media Solutions build and distribute text and graphical adverts to TA points of sale to influence buyers and generate bookings.
We believe Amadeus is uniquely positioned to help hoteliers accelerate their business goals. This is why:

Cloud

Amadeus’ understanding of high volume transaction systems. We are building all of our solutions on the Cloud to guarantee “always on” and secure computing. Upgrades are seamless and our flexible technology allows hotels to work the way they want to work.

Component-based solution

Our solution is modular. It is built via components that work seamlessly together or as part of an existing solution as legacy systems are gradually replaced. We understand replacement cycles in hospitality IT. Not everything at the hotel level can change overnight. Our solution leverages the industry’s best products in four key functional areas: Central Reservation System (CRS), Property Management System (PMS), Sales and Catering, and Service optimization. With Amadeus, hoteliers will truly have the “Best of Breed” and the ability to standardize as one unified solution.

Of course, hoteliers will really unlock the total value that our platform brings by leveraging
our single inventory solution. The fact that all the key inventory attributes are centralized in one system will allow for higher level of personalization. For example, a customer will be able to make a search for a room, choosing it to be in a low floor, away from the elevator, with spa access and an early check-in. Our solution will provide the options that matches those attributes and will price them accordingly.

Community Model

Our new hotel community model will be based on the successful best practices of our Airline IT Altéa platform. This will deliver high economies of scale, customization capability, functional richness and seamless integration with partners.

Low Risk Migration

We have the expertise and proven methodologies at both the enterprise and hotel level when it comes to migrations. Our capabilities include expert services for change management, data migrations and on-site deployments to assure limited interruptions during a replacement cycle. This is backed by our excellent, award winning customer support.

Financial Value

Our financial strength allows us to be a true partner with a hotel. Our pricing model scales with the success of the hotel business and means that we are working together for revenue growth. Hotels can move away from heavy CAPEX to a ‘pay-as-you-go’ model.
The Payments business represents an attractive opportunity for Amadeus. There is a growing number of players in Payments, however Amadeus stands out for its sector expertise: Amadeus is a Payments player specialised in the travel sector.

Already, Payments is a complex area:

- As it involves the transfer of money, there are many regulatory bodies wishing to control all or parts of the payment process. Capgemini identifies 30 key regulatory and industry initiatives that impact the way businesses can accept payments.

- If a company wants to serve globally, the complexity increases exponentially, as each country has its unique requirements and its own methods of payments. For example, in India, 3D Secure authentication is a mandatory requirement. And if you want to sell in Brazil or China, you need to accept a form of payment called Boleto, or Alipay, respectively.

- Cybercrime is another major threat, and merchants must stay ahead of the game. Fraud is not only for the online channels, but also a theme for face to face environments.

- And of course, the cost of having multiple payment providers also needs to be managed.
All the above explains why FinTech is such a growing market.

And payments in travel are even more complex due to the particularities of the industry. For instance,

- Travel is definitively global. In the travel industry, selling within one country is unusual. Most travel providers need to sell across many markets and very often worldwide.

- Another distinguishing factor in travel payments is the long time gap between paying for a product and having it delivered. On average, people book flights 1 month ahead of the departure; even 6 months is not unusual. During this time, many things can happen – changes to the dates of the flight, a cancellation of part of the booking, ticket re-booking, flight cancellation, airline going bankrupt... Not only that, but there are also specific methods of payment, such as loyalty schemes and specific travel card schemes, used for payment that need to support all these changes. All of this creates significant additional complexity (and risk) to the management of the payment processes.

- The airline industry also has its own regulator, IATA, which Amadeus works very closely with.

- Not to forget the complexity of the IT systems in the travel industry. Amadeus being the IT provider of the internal systems of many airlines, travel agencies, airports and other travel participants, positions us nicely to integrate the payment processing and reconciliation to their IT systems.

If we put all of these factors together, the challenges for payments in the travel business can be enormous. So what is Amadeus doing to help its customers?

We are positioned at the centre of the travel ecosystem, granting us unparalleled expertise in travel and providing us with unique insights into the challenges that the money flows and payment processes represent for travel players. We can leverage on this knowledge to identify areas where we can provide benefits and efficiencies to our customers, help them optimize the payment process, either to those making the payments or to those receiving them, and create synergies for both parties.

- Amadeus provides travel merchants (those receiving payments from their customers) with reach to global and local payment providers worldwide, as well as an omni-channel (online, offline, mobile) end-to-end portfolio of payment solutions.

- Amadeus provides travel payers (those making payments to suppliers) with a full suite of payment options that help them to optimize their cash flow.

We provide payment solutions that are fully integrated into our Altéa solution for airlines and our front-, mid- and back-office systems for travel agencies.
We are the only player in the travel payment market that has such a comprehensive offering built up around all these characteristics and we can leverage on (i) Amadeus’ already connected customer base, one of the largest in the travel industry, and (ii) Amadeus’ brand and its reputation in the market.

In addition, Amadeus resides at the centre of it and our knowledge and deep pool of data enable us to make a qualitative difference to our customers, both merchants and payers. We are able to identify and provide benefits and efficiencies to our customers or penetrate new spaces (for example, airports). Payments is highly synergetic with the overall travel ecosystem.

Our portfolio today comprises a wide range of products to serve the participants in the payment flow in the travel market. We serve more than 1,100 customers and the volume of payment transactions processed by us in 2019 delivered a double-digit growth rate.
We have two differentiated businesses within our Payments unit:

- The Merchant Hub, through which we help travel merchants get paid, and
- The Payer Hub, through which we help travel agencies and corporations pay travel suppliers.
Through the Amadeus Merchant Hub we help travel merchants get paid.

The Merchant Hub allows travel merchants to connect to banks, card acquirers, providers of alternative methods of payment, foreign exchange providers and payment service providers worldwide with just a single link.

The Hub enables our customers to:

- Serve customers across all channels. With a single connection, travel merchants can manage payments across call centers, ticket offices, airports, ecommerce and mobile sites, and travel agencies.
- Manage the end-to-end payment process, from performing security checks to ensuring money is received in their bank account.
- Manage travel-specific processes. For example, the ability to pay for a flight part in currency and part in air miles, and to add the information about the credit card details to the passenger name record to simplify booking payment processing and reconciliation.
- Remove complexity: with a single technical link, our customers and partners reduce payment, IT and maintenance costs. We offer our customers a vendor-neutral payment platform which allows them to take a best-of-breed approach to selecting a payment partner without the complex integration challenges associated with building such a
- Accept payments in more than 190 countries. This unparalleled reach is thanks to the number of different Payment Service Providers (PSPs) and banks connected (over 400 as of today) to the Hub.

This business model has multiple synergies with the Amadeus overall model. It is two-sided and transactional: we charge merchants based on their use of the system and we charge payment providers as we connect them with merchants.

Both sides pay for the value they receive: (i) travel merchants (airlines, travel agencies, hotels, railway companies) for easy access to the payment industry, and (ii) payment services players (fraud management providers, banks, payment service providers, providers of alternative methods of payment) for commercial and technical support connecting to the travel market.

We feel well prepared to continue to penetrate this market as we have significant expertise in airline and travel agency payments, where we see important opportunities. We have the opportunity as well to leverage on Amadeus’ growing position in other verticals such as hotels and airports.
We help payers efficiently make payments to travel suppliers. The Payer Hub is a single platform which integrates different payment providers to help reduce the complexity of making payments for travel agencies and corporations. It integrates payment options smoothly into their booking flow and provides a wide choice of payment providers.

Today, our focus is on virtual cards. Our innovative ‘B2B Wallet’ solution provides our travel agencies with a choice of payment options to help manage their cash position. Just like we, as consumers, might use a debit card to avoid an airline surcharge or a credit card if we do not have money in our account, travel agencies have the same need when booking and paying for flights, hotels and other content. The B2B Wallet offers them a choice of a credit card, a prepaid card which earns a rebate and a second prepaid card which avoids airline surcharges, which can be used interchangeably.

Today, Amadeus is the only player offering such a broad choice in a fully-integrated suite.

We also offer Corporate billback solutions. These solutions automate the whole payment process from corporations to hotels (either directly or through travel agencies), by generating virtual card numbers attached to specific transactions. Through the tracking of these virtual card numbers, payment confirmations are sent automatically to the hotels, and the reconciliation of the payments to the transactions is facilitated.
In the Payer Hub, the business model is also transactional and two-sided. The highest contributors to our revenue are the payment providers, who benefit from the use of their issued cards. The main revenue source for Amadeus comes from a percentage of the amount spent on a payment card and the fee depends on the type of card used.

We believe our Payments business now has a solid foundation to grow upon:

- We serve customers in more than 190 countries.
- We have grown to a total of 70 payment partners.
- We reach more than 400 acquiring banks worldwide, with over 300 alternatives methods of payment.
- We have more than 1,100 customers with contracted services from our portfolios.

Our success so far proves the value of our solutions. We are now focused on the continued expansion of our customer base by adding more travel players (not only airlines and travel agencies but also hotels, airports, railways companies, etc.) and payment service providers, as well as increasing revenue through upselling of our portfolio of services. We are confident that our strategy will continue to deliver strong results based on our success to date.
Our Airport IT technology today covers the end-to-end needs of airports, and our cloud-based solutions provide deep integration amongst the various players in the airport space and their processes.

Our objective is to become a market leader in airport IT products and services, offering a full suite of IT solutions and associated services specifically for airport operators, ground handlers and airlines - which need to stay informed about ground operations. By sharing common technology between airports, airlines and ground handlers, the flow of data between the different airport players is more fluid, making it easier to collaborate.

The challenge for airports is to deliver a world class experience against the background of poor visibility, inefficiencies, increasing operational costs, declining revenues, strong growth in passenger numbers and limited capacity to absorb additional traffic.

Part of the problem lies with legacy airport IT systems. In particular, the integration of new systems and industry standards is difficult and costly. The majority of traditional solutions have a poor capacity to accurately predict operational events. Furthermore, they often rely on the manual input of data, a method open to human error. The challenge of managing information associated with legacy systems presents a major threat to airport expansion, mainly due to key information residing in siloed systems or even spreadsheets. For efficient
operational planning, airport operators need a centralized data source that enables them to identify and share the problem points which are causing delays in real-time, so that they can be rapidly addressed. Without this visibility, operators cannot maximize resource capacity to ensure a stress-free passenger journey and efficient aircraft pushback, taxi and departure, all within the allocated runway time slot.

Increasing pressure on the aeronautical fees that airports charge to airlines for the use of their facilities, combined with increasing operational costs caused by inefficiencies, leaves little room for any profit margin and has forced airports to rethink the traditional revenue model.

We estimate an addressable market of c. 1.6 billion euros.

Traditionally, IT providers in our industry are specialised in certain areas of the operational chain of airports. Some are good at baggage solutions, others are good at ramp solutions. However, very few are capable of covering a broad range of the IT needs that airports have. In the case of Amadeus, our strategy is to provide an integrated suite of products which serve a broad range of requirements, offering solutions for passenger processing, ground operations and flight management, across the whole travel chain.

At the end of 2019, we had a total of 291 customers spread across the regions and our airport IT solutions were available at more than 350 airport sites worldwide.

We initially grew Airport IT off synergies with Altéa, as we are present in many airports across the globe through our Altéa DCS module for airlines, but there are many more possibilities: with Distribution, enabling airports to sell revenue-generating services such as parking or VIP lounge passes through the travel agency channel, or with improving airport payment capabilities.
Offering a suite of integrated solutions

The Amadeus airport IT product range, which encompasses more than 20 solutions, covers all activities in the infrastructure, terminal, ramp, and movement areas at the airport. All these products interact with each other (vertical integration), so they can benefit from the information generated by each module. Our offering is grouped into 3 main business areas:

- Passenger processing: this group offers applications for check-in, baggage drop and boarding-related processes.
- Airport operations: these are systems to handle the core airport management (flights, assignment of gates, parking stands or luggage carrousels, flight information screens at the terminal).
- Ground handling: services for passengers and aircraft provided by ground handlers.

**Passenger Processing**

One of our key solutions is our Amadeus Airport Common Use Service (ACUS) solution. The ACUS platform delivers the airline applications as Software-as-a-Service, helping airlines share the same equipment at the airport, so that different airlines can for example use the same physical check-in desks and boarding gates, which can be flexibly reassigned as needed. The airline systems are connected to our central data centre; airlines and ground handler staff just access applications through an internet access on very light, end user
devices like thin clients and laptops. We use application virtualization and run everything from servers in our cloud (central location). Upgrades of airline systems are no longer a hassle to deliver because the changes happen in the central system and are instantly available to all users.

In May 2019, we completed the acquisition of ICM Airport Technics. ICM, headquartered in Sydney, Australia, specializes in the provision of passenger automation and self-service bag drop solutions for customers, principally in Asia-Pacific and Europe.

Airport Operations

We provide a large variety of solutions. Amadeus Sequence Manager, for example, improves flight departure sequencing and runway capacity to reduce environmental impact, bringing benefits to the whole airport ecosystem. It becomes especially relevant when there are bad weather conditions and aircrafts are subject to de-icing processes.

Another example is our Fixed Resource Management System. Airports are looking into ways to optimize the use of their fixed resources such as aircraft parking stands, gates and baggage carousels. This solution is designed to determine the best possible allocation of aircraft parking stands and gates according to the flight schedule and the business drivers of individual airports. Optimized allocation of stands and gates means shorter transfer times resulting in an enhanced travel experience. It could also mean that aircraft are strategically parked based on ability to generate passenger traffic close to retailing areas of the airport, or on an easier, quicker loading of transit passengers' luggage.

Ground handling

Ground handling companies face increasing challenges in order to operate more efficiently within an airport environment. They must engage with a number of different airline departure control systems every day – sometimes a ground handler's staff will have to use 20 different systems. This complexity of pairing ground handler systems with those of their airline customers leads to high IT operational costs, productivity issues, the need to hire more ground handling staff, high training costs and low flexibility.

We have adapted our Altéa DCS system for airlines to assist ground handlers in order to solve the issues mentioned above. This allows ground handlers to serve multiple airline customers using one single DCS. Our airport entry strategy was to focus on ground handling companies (because we knew we had a product that we could quickly bring to market) with Altéa, and then later utilize these customer relationships to promote further solutions within the airport. Some airports manage their own ground handling. Some companies are purely ground handlers, but given that they are based at the airport, they do have an influence over the broader decisions that the airport makes. This means they can introduce Amadeus to airlines and airport operators at that airport as well.

Amadeus has a leading portfolio of 129 ground handler companies using our DCS solution all
over the world.
Our value proposition is designed to meet the key needs of airports now and in the future, providing a next-generation, data-rich suite of solutions which will increase visibility for airports and their stakeholders, ensuring a closer collaboration and greater efficiency. This will create reciprocal benefits for all players in the ecosystem and their passengers.

Amadeus brings an entirely new value proposition to the market, based on 5 key differentiators:

1. **Data.** Amadeus processes information from both its global distribution platform and Altéa platform. Amadeus’ Airport IT suite relies on some of this data. This removes the need to replicate data, resulting in no redundant sources and one single interface for airports. Our flight information provides real-time information up to one year in advance. The booking information allows us to predict the passenger volume that an airport can expect on a given date and time. Our solutions are used in many airports globally, delivering high visibility, accurate passenger numbers and flight and aircraft information. Amadeus uses data to enrich its airport IT products. An example of this is how we can use aggregated data to optimize the usage of parking stands and gates. The airport can determine the best parking stand allocation for incoming aircraft long in advance. By knowing how many passengers are connecting and to which destinations, or if wheelchair chairs are required, the airport can determine which aircraft should be in remote parking
and which should taxi up to the terminal, and select which gate will put transit passengers closest to the shopping areas and so on. Another example is the synchronization of both airline and airport flight schedules, allowing airports to know what is happening real-time, and resulting in an enhanced experience for the passenger.

2. **Cloud computing.** The rise of cloud computing is a testimony of the reliability of networks today. Amadeus has been operating customers’ mission critical systems in its data centre for more than a decade. Due to the on-going investments made and technical expertise we have in our data centre, our system availability and response time achieves better results than a customer’s own data centre. IT will no longer be managed on-site individually by each airport partner, but instead moved to remote data centres where security, operational efficiency and optimization are much easier.

3. **Innovation.** With significant investment in the industry, Amadeus’ approach to the future product roadmap is done with, and not for, the airport customers. Feedback drives innovation, and coupled with a community approach all updates are automatically available to all Amadeus’ airport partners.

4. **Reputation.** Amadeus has been present in the travel industry for 28 years, and in the airline IT market since 2001. Amadeus has successfully evolved and adapted its business model to constantly changing market needs over this period, building strong foundations for a successful sustainable future. Amadeus has delivered major mission critical IT cut-overs time and time again.

5. **Cost.** The Amadeus community model ensures that upgrades made on one system are automatically made available for all airports at no additional cost.
Our technology
Introducing the ‘New Normal’
The power shifts to end-users and drives our technology agenda

Cloud
- Increased flexibility and scalability
- Continuous availability, close to 100% accuracy
- Quicker time to market
- Reduce operational issues through automation and isolation

Real-time analytics and big data
- Leveraging on the biggest and broadest data set in the travel industry
- Full 360 degree view of the traveller through data aggregation
- Building a unified framework for easy aggregate data from all applications in our platform
- Applying machine learning for data mining

API
- To boost innovation, both internally and from new entrants
- Making sure Amadeus is a preferred back-end for any functionality dealing with travel
- Building our Open API to interact with customers and third parties
- Based on state-of-the-art technologies and standards
- Within our systems, the applications are separated to benefit from others’ services (Core API)

Our customers expect not only cutting-edge functionality and features, but also robust, versatile and fast systems, as their businesses rely more and more on our platforms. Factors such as 100% availability, sub-second response times and flexibility of deployment are becoming mission-critical business features. Both on mobile and on internet, response time is seen as a critical factor for adoption.

Our customers need advanced security to develop trust with their users and partners, knowing that their personal and financial data is safe.

With the predominance of mobile, omni-channel capabilities require that information and transactions are processed in both a contextual and personalised way, in particular when the user transacts from multiple devices. For example, an airline or hotel may want to make a special offer to a traveller who has experienced a delay during their last trip or suggest destinations that are in line with the traveller’s preferences. This means capturing and analysing beforehand a lot of information about the traveller and the context in which they interacted with the system - before, during and after the trips. This mass of information, often referred to as Big Data, must be stored, mined and transformed into meaningful parameters that can later be injected into real-time transactions. This requires investment in a powerful and scalable technical framework to handle Big Data. This framework is the essential enabler for building the applications that can provide these solutions.
A number of technologies grouped under the concepts of Cloud and Big Data are on the market, mostly offered by mainstream IT companies and the open-source community. They offer technical advantages, in particular for infinite scalability and continuous availability. They also open new business opportunities in their applications for Big Data management and integration to other systems via a powerful API framework.

Our technological agenda incorporates these ‘non-functional’ business requirements, which for us, are becoming the ‘New Normal’.

- Using Cloud and automation we can deliver services more quickly, more cost effectively and with higher quality.
- Using Big Data methods based on Amadeus’ unique access to a large pool of traveller data, we make sure our customers propose the right product at the right price to increase sales and unit prices.
- Using the most modern API concepts will speed up the creation of new functionality and new businesses into the Amadeus ecosystem.
- By continuously investing in security and compliance, we help our customers build the trust they require with their customers as threat levels increase.
Amadeus technology evolves with major industry shifts

1. IT industry introduces new technology
   - Web technology, databases, cloud, big data...

2. Amadeus builds technology roadmap
   - The new technology is mature and scalable enough with support from mainstream vendors

3. Amadeus develops business & products
   - We deliver new products to support growth & business opportunities

WEB TECHNOLOGY
- 1994: first web browser (Netscape)
- 1996: Amadeus creates Web unit and starts development
- 2000: Amadeus launches eRetail, our first eCommerce platform for airlines and web-based front office

OPEN SYSTEMS
- 1992: Oracle true relational database
- 1998: Amadeus launches first Open Systems project
- 2004: Amadeus launches Altéa, our airline IT business on Open Systems

CLOUD and BIG DATA
- 2006: Amazon Web Services and Google MapReduce – Hadoop
- 2012: Amadeus launches Cloud initiative
- 2015: Amadeus launches Amadeus Cloud Services
- 2017: Amadeus decommissions TPF

In recent years, we have re-engineered all of our systems to an open, service-oriented architecture. Moving early to relational databases and open platforms on Unix / Linux has been the enabler to develop a new-generation airline Passenger Processing Systems, Altéa. This would not have been possible staying on mainframes.

Similarly, investing early in web technology (from 1996) has enabled us to become the global leader in providing retailing platforms to airlines (eRetail), as well as being the first GDS to deliver a web-based graphical front office in the early 2000’s.

In 2017, we retired our last TPF mainframe and our core systems now run exclusively on open systems. This achievement allows us to drive further evolution in specific areas such as Cloud, NDC, merchandizing and data analytics, as well as the adoption of new technologies such as artificial intelligence and machine learning.

The transition to cloud-based architecture is a R&D and Global Operations joint initiative, under the “Amadeus Cloud Services” umbrella. This is a combination of software, tools and practices. Cloud-based architecture will deliver substantial benefits to Amadeus. They provide a flexible and powerful framework for massive deployment and distributed operations of very large transactional and data traffic. This fits perfectly with our ambitious growth plans.
Cloud-based architectures allow for higher automation, easy replication in several data centres and the adjustment and scale to desired physical resources. By gaining full flexibility of how and where to deploy the applications, we get important benefits. For instance, you improve response times by deploying in a data centre closer to the customer region. Running in several data centres seamlessly allows us to ensure that there is always one system running. This is the base of continuous availability. Managing infrastructure resources and dealing with peak traffic is also a lot easier. These benefits are all associated with the Cloud. Here we are talking about securing those key benefits for the whole Amadeus system. We see that being cloud-compliant is a strong competitive advantage on the business side.

We use automation to monitor millions of data points automatically, to identify and counteract potential problems before they affect our customers. We are implementing techniques such as machine learning and artificial intelligence to move to the next level of effectiveness. Our engineers will move from building systems one-by-one to developing and improving automation that will enable us to manage hundreds or thousands of systems continuously.
The travel market is becoming more and more complex, with the emergence of powerful ecosystems - some centred around travel, some coming from other domains and extending to travel. There are new entrants. Some are major technology companies capable of applying scalable techniques to include travel in their applications. Some are start-up companies that can leverage Cloud capabilities to quickly build niche functionalities. However, none of them enjoys the position of Amadeus. We own a very large portfolio of travel-dedicated applications, combined with the capability to quickly leverage all cloud techniques on a very large scale with the largest customer base of the travel industry.

As we have explained, our customer and also traveller needs a fundamental change of paradigm in the technical requirements of systems:

- A lot more transaction power is needed, not just because the traffic is globally increasing, but also because consumers expect more intelligence when it comes to arranging their travel. The customer-centric approach, which all players are promoting in travel, requires the processing of massive amounts of data to deliver personalised and context-sensitive transactions.

- Continuous system availability and fast response times are critical factors for adoption and conversion in online channels.

- Advanced security is simply a must in the digital world, and the base for trust between
all intermediaries.

Amadeus understands all of these challenges very well. Our past technology investments have always been driven by anticipating major evolutions in the travel market. We can go fast, with tangible efficiencies in terms of costs and quality of delivery. Technical frameworks are one dimension of the challenges ahead. We believe that our continuous and sustained investment in technology over the years has put Amadeus in a unique position to leverage it to the highest scale.

Our strength and differentiation lies also in the full control of both Development and Operations. Evolving to Cloud-based architectures requires a continuum to introduce automation over the full product cycle, from software engineering to deployment and operations.

Companies which will succeed in this environment are those who are ready to leverage technology to power new business opportunities created by this complexity and race for scale.

Amadeus will definitely be one of these companies, with the clear ambition to be a leading platform of reference in the Travel ecosystem.
Financial performance
Over the past 30 years, our revenue and EBITDA have exhibited resilience through several global economic downturns and strong growth in expansionary periods. Since 2009, we have also increased our revenue and EBITDA at a strong annual pace.
Our travel IT expertise, investments in leading technology and customer-centric approach have granted a strong value proposition which sustained our growth in both Distribution and IT Solutions.
Technology is in Amadeus’ DNA. We have invested billions over many years to have a uniquely robust hardware and software offering. To give an order of magnitude, we have devoted more than €7.5bn to R&D since 2004. Having market leading and cutting-edge technology allows us to serve our customers better, to customise more efficiently and to continue innovating, and hence driving customer loyalty.
We operate a strong cash generative business. Thanks to this, and even taking into account our consistent commitment to R&D investment (capex, which mostly relates to R&D, has ranged between 9 and 15% over sales since 2009), our leverage declined significantly to 1.2x at the end of 2019.

Amadeus’ capital structure target is based on leverage ranging between 1.0 to 1.5 times net debt to EBITDA. Shareholder remuneration is an important piece of our capital allocation process. Ordinary dividends (distributed in accordance with the approved pay-out ratio policy of 40% to 50% of profit) have grown consistently every year since our IPO in 2010. Additionally, Amadeus complements ordinary shareholder remuneration with extraordinary remuneration to maintain leverage within the stated leverage range.

We aim to continue to support this growth in the coming years based on our healthy cash generation profile and our sound balance sheet.
Amadeus addressable market opportunity

Addressable markets (€ billion)

- Distribution: 10.0
- Airline IT: 8.0
- New Businesses: 14.0

Total: 32

So how do we see the near future?

We remain confident and optimistic.

We are in a unique position to benefit from growing levels of air traffic, disaggregation of content driven by airlines’ new strategies and NDC and growing ‘look-to-book’ ratios, as well as by continuing to expand our customer base across our traditional businesses coupled with the upselling of enhanced functionalities. We believe that we already have and we continue to reinforce a position of market strength that will enable us to grow in new markets.

We estimate an addressable market opportunity for Amadeus ranging +€32 billion.

Of course, we will not be alone and there will be competition. However we expect to capture our share of this market opportunity.
Key terms

API: “Application Programming Interface”
CAGR: “Compounded Average Growth Rate”
CRS: “Computer Reservations System”
EMD: “Electronic Miscellaneous Document”
FCF: “Free Cash-Flow”, calculated as EBITDA less capital expenditure plus changes in operating working capital less taxes paid less interests and financial fees paid
FSC: “Full Service Carrier”
IATA: “International Air Transport Association”
ICAO: “International Civil Aviation Organization”
IFRIC: “International Financial Reporting Interpretations Committee” or IFRS Interpretations Committee
IMF: “International Monetary Fund”
IPO: “Initial Public Offering”
IT: “Information Technology”
GDP: “Gross Domestic Product”
GDS: “Global Distribution System”
LCC: “Low-Cost Carrier”
LBO: “Leveraged Buy-Out”
NBU: “New Businesses Unit”
NDC: “New Distribution Capability”
OTA: “Online Travel Agency”
PAX: refers to passengers
PPA: “Purchase Price Allocation”
PB: “Passenger Boarded”
PSS: “Passenger Services System”
PUE: “Power Usage Effectiveness”
R&D: “Research and Development”
RPK: “Revenue Passenger Kilometre”
SaaS: “Software As A Service”
SQL: “Structured Query Language”
TA: “Travel Agency”
TMC: “Travel Management Company”
WTTC: “World Travel and Tourism Council”
Thank you!