Transformation into the leading customer-focused airline
We worked closely with our client to run the program, and design new customer experiences. With the use of advanced analytics, we realized a modern personalization solution.

**Abstract**
The client is a major European airline that operates routes to 18 domestic and 197 international destinations in 78 countries worldwide using a fleet of more than 280 aircrafts and is a leading member of Star Alliance.

The client faced both competitive pressure and rising customer demands. As a known leader in the aviation industry, the client was threatened by “new entrants”. In addition, new and disruptive technologies such as digital are changing the industry. These trends and a different starting point of inherent legacy architecture, systems and marketing weakened the client’s ability to respond to threads.

The vision was to be recognized as the leading customer-focused airline through greater personalization, offering new and innovative services together with new digitalization of the customer experience resulting in increased customer satisfaction and new revenue growth. For example, revenue growth came from personalized upgrade offers or ancillary services.

**The Situation**
With 1,700 flights each day, each with an average of around 100 passengers, the client serves thousands of customers every day. Data is collected from various customer touchpoints but the airline stores only some data of its passengers such as name, booking details and traveler status. Legal constraints and missing analytical capabilities meant that no individual profile of each passenger was being created or analyzed, resulting in a lack of ability to approach customers with appropriate offers or other relevant information. Their data was stored in separate systems making it difficult to form a view of the passenger as an individual. New technologies, the capabilities of the internet and the increasing competition of established and new airlines have led to the gradual change of flying into a commodity service making it essential to differentiate their offers with greater relevance and personalization.

In summary, the client strives to be the leading customer centric airline through the provision of more personalized and relevant information, products and services. In particular:

- Increasing customer loyalty and recommendations
- Improving conversion rates
- Driving greater revenues
- Building brand equity

The client has launched a company-wide program to design the future customer experiences and to develop the required technical and functional foundations in order to become the leading customer-focused airline in 3-5 years by offering each traveler customized communication, products and services according to his/her individual needs.

The program combined different projects and activities such as:

- Initiation of a delivery-oriented program organization
- Re-definition of Customer Experience
- Initiate, set-up and run an Analytics Centre of Excellence
- Design of the future Solution Architecture and integration of new components into the existing and evolving architecture landscape
- Set up a team of solution engineers to build the new components such as Data Lake, Decision Engine, Customer Master Data Management and an initial Product and Services Catalogue.
Approach
Deloitte put a new agile project delivery approach with a multi-functional team in place that encompassed strategy, enablement and implementation in the areas: Project, Customer Experience, Omni-channel, Analytics and Digital Engine components as well as project communication.

Deloitte accelerated the delivery of the enterprise-wide project, specifically prioritizing and driving personalized customer experiences within sprints of minimal viable products to produce continuous tangible results. Deloitte drove foundation initiatives that enabled sustainable long-term solutions to personalize customer experiences for passengers worldwide.

In order to meet the business goals and objectives of the project, a wave planning and delivery function was established with responsibility for business architecture, resourcing, timeline development, identification of dependencies, scope definition and integrated project steering of the overall program.

The approach being utilized by wave planning and delivery reflected an agile delivery system for digital business development, with wave plans that contained defined sprints resulting in a rapid production of minimum viable products which were further defined over the course of the project.

Wave planning and delivery business objectives included:
• Establishment of new waves based on defined scope
• Resource identification based on skill profiles and team structure
• Coordination with project sponsors and leadership to prioritize waves and develop program timelines
• Collaboration with business and technical functions within program to achieve benefits of integrated, agile approach
• Establishment of guidance for wave leads, internal and external stakeholders, and function specific collaboration on planning efforts

Project value delivered due to wave planning and delivery included:
• Establishment and initiation of dozens of waves dedicated to fulfilling business requirements
• Development of about hundred minimum viable products through the wave development structure
• Integrated project teams that utilize rapid agile development processes to meet business requirements
• Increased revenue as a result of successful implementation of wave structure

In doing so, Deloitte leveraged its international and multi-functional network of experts in strategy, marketing, customer experience, digital, innovation, data analytics, information management, and communication from Germany, USA, UK, Netherlands and India.
Foundation pillars
Customer Experience

The key objective of the enterprise wide customer transformation program was customer personalization and required delivery of personalized communications / offers / services to create a meaningful experience at key customer touch-points. However, the client’s existing execution approach was predominantly focused on internal processes and technology oriented, with limited customer experience design thinking. The imperative to design and execute a customer-centric strategy-driven transformation roadmap was critical to realize envisioned strategic and financial goals.

As the client’s strategic advisor, the CX Strategy work stream helped the airline identifying personalized experiences by defining the right services to be delivered to the right customers at the right time through the right channel(s).

Four main activity phases were executed to achieve desired objectives:

- **Segmentation** – Structure the customer landscape for air travel; Determine on which customers to focus on; Identify those customers, drivers and barriers and the strengths and challenges the client faces in acquiring and retaining their customer base.

- **Customer Journey Assessment** – Customer experience survey, ethnographic research, Executive and staff interviews, Deloitte and client SME interviews are being used to assess the current state customer journey and Moments of Truth for each priority segment.

- **Future State Experience Definition** – Personalized experiences that can be delivered in the future around the Moments of Truth will be defined and Strategy / Process / People / Technology / Analytics capabilities to activate these experiences were identified.

- **Roadmap Definition and Execution Planning** – Initiatives to implement target capabilities were prioritized and sequenced across a 2 year timeline and key execution planning concepts were developed (e.g. metrics and measurement, project management, change management, business engagement).

The benefits for the airline were a clear and consistent enterprise-wide definition of customer experience vision and ambition; Personalization experiences designed to enhance customer satisfaction scores and to achieve profitable growth through ancillary sales and increased customer loyalty. The execution roadmap was laid out to help the program achieve its objectives of generating revenues in excess of €200M by 2020 and firmly putting the client on the runway to become a five star airline.
Analytics Centre of Excellence

Deloitte helped in developing and running the Analytics Centre of Excellence within the project but also going beyond the program by delivering analytics across the enterprise. Deloitte drove this transformation by developing a target operating model for analytics containing people, staffing strategy, organizational structure and technical environment. On an operational level, the analytics team managed the demand, prioritization and sequencing of analytics development and worked with IT to develop the appropriate analytics architecture.

The Analytics CoE was set up in three main units: Data, Garage & Factory.

Garage

As part of the Analytics Center of Excellence, a Garage was set up to explore data-driven use cases, develop & train models and to scout for appropriate technology.

Our experienced data scientists helped to build up an innovative Analytics Garage team. Using the latest analytics tools, we implemented several use cases and designed reusable analytics features and data tables. The program was supported by the implementation of powerful predictive models to target customer communication. Insights from pattern recognition and cluster analyses on traditional CRM data and unstructured weblog data were visualized, documented and handed over to the line organization.

On a short-term basis, we were able to increase revenue by developing analytical models e.g. for targeting relevant offers (such as ancillaries or upgrades) to the right customers. On long-term basis, we helped to build up foundations of an innovative data science team as crucial enabler in becoming the key component of a data-driven company.
Factory
The Factory was set up in order to industrialize personalization techniques and approaches created and initiated by the Garage. The statistical models, the model training and the analytics of the results (tracked by Customer Experience Performance (CXPM) metrics) were scaled on Big Data platforms in close combination with the existing Enterprise Data Warehouse for continuous preparation of various scores used for real time decisioning. The outcome was an industrialized advanced analytics driven ‘who-what-when’ solution for offers made through various customer channels using:

- Standard methodology and operative model for scaling up analytical propositions on Big Data platforms
- Data foundation and in-built ability to track not only the success of individual waves but also that of the overall program
- A decisioning engine that can manage the conflicts and overrides with triggers from rules processing tools from other line functions in the larger organization, to deliver the right message to the customer.

Engine
The Engine provides new solution components in three distinct areas which were developed as part of the program with a combined on- and offshore team applying agile project methodology:

- Customer profile management and unique Log-In Services: The key component is a Master Data Management tool from Informatica with strong data virtualization and integration capabilities
- Data Storage and Scoring Models: Key component of the data storage is a data lake enabled through Hadoop (Cloudera Distribution) which allows the storage of unstructured data. This data is then analyzed in scoring models, which in turn generate customer affinity scores for specific use cases (i.e. upgrade, lounge access)
- Central data-driven rules engine: The rules engine uses the generated affinity scores to determine which available products and services will be offered to the customer through the different digital touchpoints (Web, Mobile Web, App, Email, Newsletter). The central rules engine is being enabled through Tibco Business Events.
- Interfaces: the Engine is also focused on integrating itself in the existing technical infrastructure through standard interfaces / services (i.e. REST / SOAP) against an Enterprise Service Bus (ESB by Tibco) to comply with the clients service-oriented architecture
Solution Architecture
The Solution Architecture was designed to deliver a state of the art future architecture with integration into existing, evolving landscape and an outline for the transition towards a target picture. Constraints the architects had to deal with were: existing infrastructure limitations, future developments, the desire/need for a state of the art technology, optimal best practice utilization and on-going group initiatives. Key building blocks were: Multi Channel UI, Digital Platform and related systems integration, Rules Engine (Complex Event Processing), User Data Management, Products & Services and an Analytics Platform with a Hadoop Data Lake and integration into an Enterprise DWH.

Detailed elements delivered included:

- Technical Target Picture
- Solution Sketches
- Solution Architecture Design and evolvement
- System and interface library
- Transition path from as-is to target picture
- Integration and alignments with group / related programs and initiatives
- Architecture Guiding Principles and Rules
- Tool decisions
- Architecture observation and wave delivery supervision

Over time a consistent Solution Architecture with the corresponding future technical target picture was provided by Deloitte which enabled a unified understanding of the key technical components and their interaction across the project. The provided documentation of the as-is and to-be IT landscape and the evolution stages helped significantly to improve the communication and collaboration between technical and functional business departments inside the company as well as the cooperation with external vendors.

The Solution Architecture also provided guiding principles for future architecture design and created transparency regarding existing interim solutions as well as systems/data in need of protection – for this a security concept was developed.

Communication
A whole new communication approach was implemented and executed successfully. Minor achievements and successes on the way to the final results were communicated to continuously involve both project and client employees. This improved approach integrated stakeholders’ specific needs and provided different stakeholders with the relevant information. Hence, it would be fair to say that a kind of personalization also found its way into communication.

As employees lacked the opportunity to experience the new services, a communication team was created to make these services tangible for the employees. The goal was to ensure a deep understanding of the newly created innovations. Online simulations, iPad click dummies and visualizations were designed to help employees experience results. Making innovations tangible also helped to further drive a customer-centric approach within the organization.
Next steps
The project was set up in 3 phases:
1) Initiation and preparation, 2) Realization of first priority user experiences, 3) Extension of personalized user experiences plus the integration of new digital landscape.

With the finalization of phase 2, all building blocks were established, matured and the first significant set of tangible results was delivered and measured. This included all steps from a successful Wave ideation & initiation, to delivery to hand over into operations including the reporting of the results.

In phase 3, the focus will be on the continuous extension of user experiences and the leverage of the achievements into the whole group for a seamless group-wide passenger recognition and personalization.

Lessons Learned
• Continuous delivery of tangible results (minimum viable products) in periods of about 1-2 months (sprints) and an overall duration of 4-5 months (wave) supporting agility and transparency of results
• Every delivery should be traceable in terms of measurability of its impact (e.g. on revenue and customer satisfaction) and its contribution to the overall success of the program
• Integrated wave teams bringing specialists together across functions and business lines and having small teams (4-6 FTEs) dedicated to a wave
• Strong wave leads with end-to-end responsibility from wave planning to delivery and hand over into operations (wave closure)
• A hand-over-to-operations plan needs to be part of each delivery, making sure to support transition to operation
• A clear definition of scope, related requirements and solution design is key for the program abilities to take decisions on required changes, track the overall status and success of the program
• As decision making and prioritization is not easy, especially on “new shores”, a clear process, preparation and frequent, stringent execution of decision and prioritization boards is key
• Prepare for the need for change management when agile and flexible aspirations from a digital world meet established and rigid IT processes. Involve advocates of traditional IT processes as early as possible to ensure buy-in to the new approach
• Communication and transparency is key and requires a solid concept and execution to inform both the entire program (internal) as well as the different stakeholders involved, especially the affected line organizations (external)
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Contacts
Rajesh Bose
Customer Experience & Aviation
Partner – Consulting Germany
Tel: +49 (0) 151 58001860
RajBose@deloitte.de

Andy Gauld
Analytics
Director – Consulting UK
Tel: +44 (0) 7786 708561
agauld@deloitte.co.uk

Marcel Grandpierre
Information Management
Partner – Consulting Germany
Tel: +49 (0) 151 15106854
mgrandpierre@deloitte.de

Tom Zipprich
Customer Experience
Partner – Consulting US
Tel: +1 (0) 773 865 7793
tzipprich@deloitte.com