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White Paper

TAKING FLIGHT:
HOW GENERATIVE AI HAS BECOME A RUNWAY FOR THE **AIRLINE INDUSTRY'S TRANSFORMATION**

Generative AI is ready for take-off.
Learn how airlines can leverage this technology to transform key business functions, unlock greater efficiencies and revenue opportunities, and enhance the overall experience.

INTRODUCTION

The airline industry's adaptation to modern retailing is a monumental undertaking – and will arguably be one its most crucial endeavors of the decade.

Like many industries, airlines went through a transformation in the 90s. But this effort was focused on the digitisation of existing paper-based processes, rather than the creation of new, more efficient systems.

As a result, the sector continues to rely on concepts and procedures based on legacy technology stacks and customer needs. And although airlines have invested in AI initiatives, their current efforts are barely scratching the surface of what's possible – especially given how the AI landscape is evolving, with generative AI stealing the limelight.

How Is Generative AI Different?

Traditional AI excels at performing specific tasks based on predefined rules and patterns. It **responds to a particular set of inputs**, but doesn't create anything new.

Generative AI represents the next generation of artificial intelligence. By leveraging large language models and advanced machine learning, it **can create new and original content,** including text, images, audio, video, and code.

Rather than simply analyzing data to help make predictions, generative AI can take these insights and apply additional context to **enable more accurate and informed decision-making.**

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Building an Ecosystem Around the Customer

To truly shift to modern retailing, airlines will need to put the customer at the heart of their business ecosystem. This means every phase of the customer journey – from the first idea for a trip through to planning, booking, payment, and beyond – now has a role to play in delivering a joined-up, streamlined experience.

However, it's not just the needs of the customer that must be taken into account to make this a reality. The experience of airline employees must be considered too, as back-office processes will need to evolve to deliver on this vision. **This is where generative AI comes in.**

The Benefits and Drawbacks of Generative AI

B E N E F I T S

Time and cost savings. By automating tasks that previously required human input, generative AI can unlock significant time and cost savings for businesses.

Adaptive learning. Generative AI can continuously learn and evolve through new data and inputs. This enables the algorithm to improve over time, generating outputs that are better than before.

Better customer experience. Generative AI can provide more human-like responses to queries, helping businesses to improve customer interaction.

D R A W B A C K S

Hallucinations. Outputs that are either false or illogical. For example, a picture of a hand created by generative AI that includes seven fingers. Typically, this happens when the training data is insufficient or includes large gaps.

Bias. Generative AI is only as good as its training data. Issues can arise if that data set includes human biases. Together with hallucinations, this can lead to an incorrect or distorted view of the truth over time.

Using business data. Generative AI models can be vulnerable to targeted attacks if they are not trained on privacy-preserving algorithms.

By revolutionizing the business world's ability to drive added value from big data, generative AI stands as the next productivity frontier – and an enabler of the aviation industry's next phase of transformation.

Advancements in AI will define the next era of travel, minimizing friction and bridging the gap between customer expectation and delivery. Airlines must embrace it as a result. If they don't invest in new technologies like generative AI to accelerate their transformation, they risk falling behind more agile competitors.

The need is clear. But how and where should generative AI be used to maximum effect? And how will the deployment of generative AI impact the passenger and airline employee experience? **This whitepaper will answer those questions.**

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WHAT DOES GENERATIVE AI MEAN FOR THE AIRLINE INDUSTRY?

2023 is the year airlines are expected to achieve their first net profit since the pandemic. However, while this is clear evidence that the industry is flying in the right direction, there's still turbulence ahead.

According to the IATA, that profit margin is expected to be just 0.6% – a far cry from the 3.1% posted in 2019.[1] In part, this is due to the current economic landscape. As we move towards 2024, demand for air travel is continuing to soar. Yet economic pressures remain high. Increasing market share will therefore require cost savings and greater efficiencies.

While many technologies can support this effort, generative AI is the most compelling. Much of the initial focus on generative AI has been its impact on the passenger experience. However, in recent months there has been a significant focus on how generative AI can be leveraged to drive efficiencies across the aviation ecosystem.
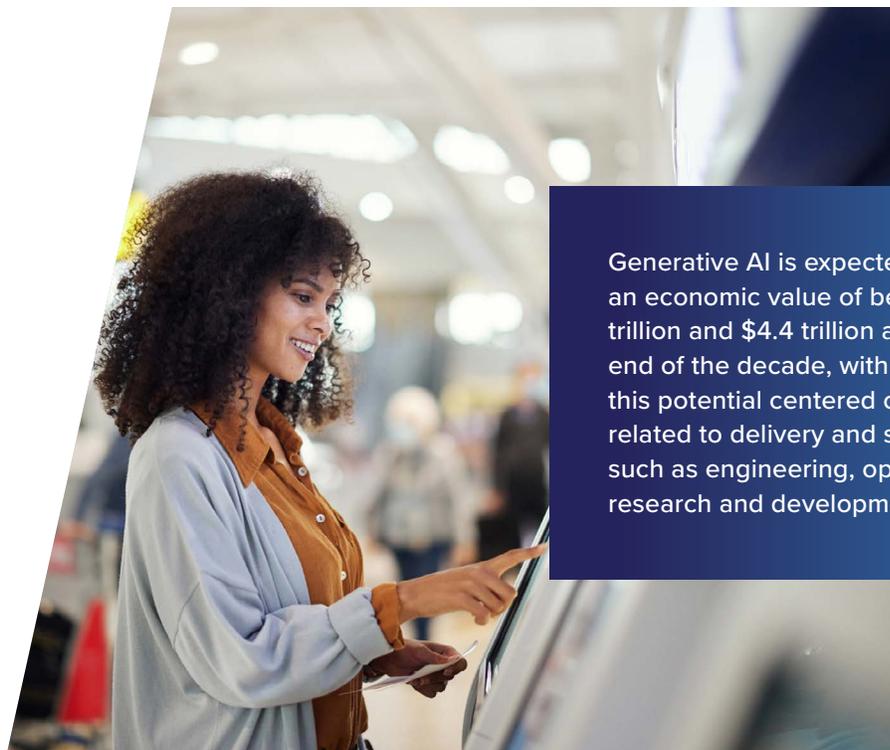
Generative AI is expected to generate an economic value of between $2.5 trillion and $4.4 trillion annually by the end of the decade, with the bulk of this potential centered on functions related to delivery and sales excellence such as engineering, operations, and research and development.[2]

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1   Source: https://www.iata.org/en/pressroom/2022-releases/2022-12-06-01/

2   Source: https://www.consultancy.uk/news/35239/generative-ai-could-boost-productivity-by-44-trillion-annually

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Generative AI Drives Efficiency

Given the democratization of this technology and its relative ease of adoption, generative AI can help streamline the employee experience across any department. It can be used to automate processes, augment human efforts, and analyze data at scale.

To help achieve their transformation goals, airline executives should consider how and where they will apply this technology across front-, mid-, and back-office functions to enhance business performance. Not only within their current ecosystem, but as part of their broader journey to modern retailing.

Delivering Better Business Health

Generative AI can transform the airline industry by:

Improving Business Processes
Inconsistent and non-standard KYC processes, resulting in duplicated efforts and lower staff productivity.

Enhancing Employee Experiences
Data collection and other manual tasks take up a large amount of employee time. Generative AI will not replace the human in the loop but will enhance and scale their output, allowing staff to focus on high value activities that require their creative thinking and innovation.

Exceeding Customer Expectations
There's currently a 33% gap between customer experience and expectation in the airline industry, greater than any other sector.[3] Generative AI offers a cost-effective way to enhance loyalty by streamlining the customer journey and redesigning critical business functions like disruption management.

By driving efficiency across the board, including in the areas passengers don't directly see, generative AI enables a better way to manage the employee and passenger experience.

Let's take a closer look at how this technology can impact each key function, improving business outcomes.

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3 Source: https://www.pwc.com/us/en/advisory-services/publications/consumer-intelligence-series/pwc-consumer-intelligence-series-customer-experience.pdf

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BUSINESS AREA #1

STRATEGY AND PRODUCT MANAGEMENT

Generative AI's Impact

- Determine Demand
- Determine Sourcing
- Budget and Target Setting
- Product Development and Testing
- Distribution and Payment Strategy
- Pricing Strategy
- Booking Analytics
- Branding
- Market Research and Analysis

■ Significant ■ Moderate ■ Minimal

Generative AI enables airlines to put customers at the center of their ecosystem. This starts at the very top, with a strategic re-thinking of how passengers and employees interact with the business.

When verticalized and trained on company data, generative AI introduces a variety of benefits. Not only can it help remove biases from future decisions, but it can accelerate the speed at which high-level decisions are implemented – reducing the gap between boardroom and bottom line.

From analyzing historical data and combining this with current market trends for more informed decision-making, to delving deep into airline data stores and uncovering new insights, generative AI will permeate deep into the business to help airlines move faster than they have before.

From a strategy perspective, this enhances:

/ **Product management.** By collating information from across departments, generative AI makes disparate data more accessible. This can help unlock new opportunities for the rapid roll-out of product enhancements and new products that can meet changes in market demand,injecting more agility into the business.

/ **Branding.** Customers want to feel like a company is speaking directly to them. When deployed across various passenger touch points, generative AI can enable personalization on a deeper, more expansive level. Airlines can dynamically adjust their brand voice for each individual customer/persona, as well as target them with more relevant product bundles that meet their requirements.

/ **Budgeting and planning.** Traditional forecasting models used limited historical inputs to account for market shifts. By helping better understand customer behaviors to predict future market trends, generative AI supports more effective forward planning. It adds jet fuel to thefinancial engine at the heart of an airline, resulting in a leaner model and reduced operational costs.

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PROBLEM
without generative AI

SOLUTION
with generative AI

Product development. Teams must dedicate significant time and resources to researching new product possibilities. Development is slow as a result.

Product development. In addition to creating product code, generative AI can provide insights into market needs through comprehensive data analysis, increasing the speed to market and reacting faster to market changes.

Product testing. New product test cases must be created manually. As all associated code must be written by a human, this is an error-prone and time-intensive task.

Product testing. Generative AI creates a more efficient and automated approach to product testing. By generating code at scale, it can improve the speed and quality of the testing process.

Targeted marketing. Limited ability to provide targeting marketing based on a lack of actionable customer preferences data and flight availability information.

Targeted marketing. Customer preferences gathered through deep data analysis to support targeted marketing campaigns.

BUSINESS AREA #2

OFFER AND ORDER MANAGEMENT

Generative AI's Impact

▬	Market and Distribute Product
▬	Fare Quotes
▬	Omnichannel CX
▬	Airline Inventory and Pricing
▬	Issue Order (Ticket and/or EMD)
▬	Authorize and Process Payments

▬ Significant   ▬ Moderate   ▬ Minimal

Generative AI will help airlines take advantage of the large volumes of data at their disposal and analyze it at scale to unpick market trends, customer preferences, and other inputs to streamline operations.

For example, generative AI can:

/ **More accurately identify demand.** Customer engagement using generative AI results in better understanding of customer needs, informing customer-specific segmentation. In turn, these insights will enable more informed revenue management and planning decisions.

/ **Determine sourcing.** Generative AI improves sourcing and enables simpler vendor onboarding, giving purchasing and business teams a deeper understanding of suppliers and their offerings. This not only streamlines back-office function, but the benefits of improved sourcing can be passed on to customers.

/ **Manage inventory and pricing.** Integrated with inventory and pricing engines, generative AI algorithms can offer real-time discounts on unsold airline seats to maximize revenue, minimize revenue leaks, and reduce under-capacity flights.

By bringing greater efficiency to core airline functions, existing processes can be optimized for the benefit of both employees and customers. From route identification through to booking, generative AI will help streamline functions throughout the offer and order journey, making the overall process more self-serve.

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✈ Enhancing Experiences at the Point of Purchase

When it comes to how customers interact with an airline, generative AI delivers self-service experiences that not only meet – but exceed – expectations.

Considering most people spend nearly three times longer planning, booking, and thinking about their trip than the time they spend on the trip itself, offering a superior customer experience up to the point of purchase is a great opportunity to build customer loyalty.[4]

P R O B L E M
without generative AI

Customer support. Customers must adhere to contact center hours. As the main method of support, this increases demand on contact center staff as operations scale.

Fare quotes. Customers must find the options and routes that best meet their needs or call the customer contact line, increasing demand on limited resources.

S O L U T I O N
with generative AI

Customer support. Generative AI chatbots can deliver around-the-clock support, leveraging the data that the airline can gather about the passengers preferences, to learn and evolve.

Fare quotes. With access to data from across the organization, generative AI can offer bespoke, personalized travel packages and pricing options tailored to the needs of customers.

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4   Source: https://www.thinkwithgoogle.com/intl/en-gb/consumer-insights/consumer-trends/uk-travel-search-trends/

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BUSINESS AREA #3

ORDER FULFILLMENT

Generative AI's Impact

- Pre-Boarding Services
- On Board Services
- Arrival Services
- Transition from/to Partner
- Disruption Management
- Re-issue and Refund Management
- Document Management

■ Significant   ■ Moderate   ■ Minimal

When it comes to order fulfillment, integrating generative AI touchpoints across every stage of the carrier journey – pre-flight, in-flight, and post-flight – will redefine how airlines serve customers.

Traditionally, airline apps have served as booking and ticket management tools. However, with generative AI, they can evolve into comprehensive personal travel assistants. Airlines can tailor information and recommendations for passengers by leveraging their individual profile, preferences, and historical guidance, combined with contextual awareness of that passenger's location, itinerary, and real-time situation.

In effect, generative AI will allow airlines to offer personalized recommendations in a natural conversational manner for in-airport dining, in-flight services, and post-landing travel experiences.

Taking the Sting out of Travel Disruptions

Things don't always go according to plan, and disruptions are a constant threat to the customer experience.

However, by embracing generative AI technology, and deploying it across their website and app, airlines can transform their communication of delays or other disruptions, allowing passengers to have a personalized conversation on what the potential options are. This approach helps alleviate customer anxiety during a highly stressful scenario. At the same time, using generative AI for disruption management can help reduce lines at the customer service desk, as well as calls to the contact center.

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In the case of a flight delay, generative AI makes it possible to convert a disruption into an opportunity to build passenger loyalty. When the situation arises, a disruption management process integrated with generative AI would allow airlines to interact seamlessly with passengers and let them choose whether they would prefer meal vouchers, points, or any other form of compensation, providing a personalized passenger experience.

Updates and customer queries, including the management of reissued boarding passes and refunds, can also be handled by generative AI, further freeing up client service staff to manage more complex scenarios and other tasks.

P R O B L E M without generative AI	**S O L U T I O N** with generative AI
Pre-flight. Passengers are notified of flight delays via a generic text message with no recourse, leaving a bad taste.	**Pre-flight.** Passengers get a proactive push notification about flight delays and can explore personalized options for rescheduling and compensation.
In-flight. Passengers have no ability to make changes to their onward journey. They must wait until they arrive and go to the airline desk.	**In-flight.** Generative AI can continue the customer-centric, personalized experience. It can leverage onboard internet and the airline app to enable personalized, seamless handling of disruption management while in the air and to help passengers make changes to their onward journey before they arrive.
Post-flight. Passengers must find onward travel for themselves. Even if this is supported by the airline, the hand-off to one of their partners on the ground leaves room for improvement.	**Post-flight.** Generative AI bots in an airline app can be integrated with airline and travel partner operations systems to support more seamless hand-off. Passenger queries about where to meet onward travel partners and how to manage disruptions, for example, can be handled by generative AI.

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4   Source: https://www.thinkwithgoogle.com/intl/en-gb/consumer-insights/consumer-trends/uk-travel-search-trends/

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BUSINESS AREA #4

SETTLEMENT OF AN ORDER

Generative AI's Impact

▬	Authorize and Process Payments
▬	Revenue Accounting
▬	Billing and Invoicing
▬	Payment Reconciliation and Audit
▬	Interline Billing

🟩 Significant   🟧 Moderate   ⬜ Minimal

Ignoring the potential for how generative AI can transform back-office functions would mean missing out on a significant opportunity to bring operational efficiency to areas passengers do not get to see, but deeply impact their overall experience.

Back-office processes are key to airline resiliency. They ensure customer-facing operations can run smoothly, which is why transforming the customer experience is only possible if airlines transform the employee experience at the same time.

Conducting Data Analysis at Scale

Take payments as an example of a well-recognized pain point for airlines. In fact, as highlighted by the IATA, payments has long been considered a back-office cost center. This is due to a combination of factors:

/ Airlines must deal with a sprawling network of players.

/ Local regulations in different markets add an extra layer of complexity.

Payment management – including settling, reconciliation, and audit – are all highly data intensive functions. Huge volumes of information are generated which must be analyzed to discover discrepancies and trends that can inform future business decisions.

By integrating with internal payments systems to digest transaction data and make this information accessible for settlement teams in an intuitive way, generative AI can provide a range of benefits that reduce the complexity airlines face.

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5 Source: https://www.iata.org/contentassets/18369d8d6d484d5191b32b208fbdfabf/iata_whitepaper-travel_payments.pdf

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P R O B L E M
without generative AI

Payment management. Settlement teams must spend time wading through different systems and data stores to track cash flow.
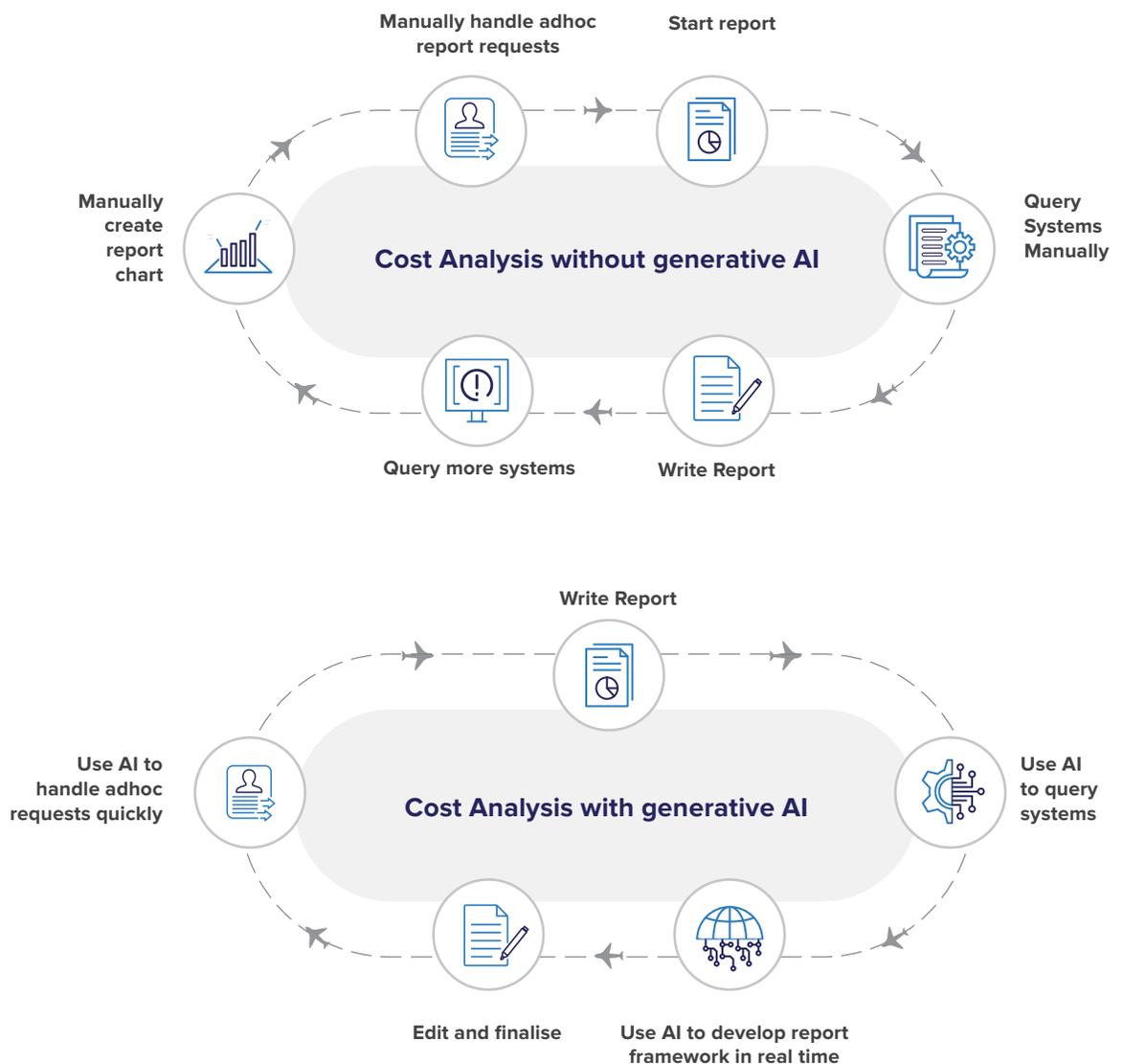
Cost analysis. Pulling data for reporting and cost-benefit analysis is a slow, manual process. Subsequent reports and charts must be created manually, delaying access to operational insights airline executives need.

S O L U T I O N
with generative AI

Payment management. Through enhanced data analysis, generative AI can quickly find the insight settlement teams need, boosting efficiency.

Cost analysis. Generative AI augments existing processes, allowing settlement teams to uncover the information they need using natural language questions, then turning those answers into charts and reports on the fly.

Manually handle adhoc report requests

Start report

Manually create report chart

Query Systems Manually

Cost Analysis without generative AI

Query more systems

Write Report

Write Report

Use AI to handle adhoc requests quickly

Use AI to query systems

Cost Analysis with generative AI

Edit and finalise

Use AI to develop report framework in real time

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FINANCE AND ACCOUNTS

Generative AI's Impact

▬	Payroll Accounting
▬	Audit and Regulatory Reporting
▬	Financial Planning and Analysis
▬	Customer to Cash
▬	Internal Audit

■ Significant   ■ Moderate   ■ Minimal

As we move deeper into the finance department, the value of generative AI for reducing costs in novel ways becomes even more pronounced.

Finance teams are often stretched thin. They must work across complex manual processes, leaving little opportunity to identify cost inefficiencies. However, by linking generative AI to airline systems and data warehouses, this technology can streamline finance processes and auditing functions, reshaping manual tasks and allowing the human in the loop to focus on higher value activities.

| **P R O B L E M** without generative AI	**S O L U T I O N** with generative AI
Financial planning and analysis. Current methods rely on applying human judgment to historical data analysis. However, this can introduce potential bias.	**Financial planning and analysis.** Generative AI can analyze historical data accurately at scale. Combined with market trend analysis, economic indicators, and other insights, this enables more accurate, real-time planning and forecasting.
Invoice management. Finance teams must manually input data from invoices, financial statements, and unstructured sources. As a repetitive process, this can result in human error.	**Invoice management.** Generative AI can pull key information from invoices at scale. This technology also learns the context behind data and accurately inputs it into financial systems.

6 Source: https://www.gartner.com/en/newsroom/press-releases/2023-05-10-gartner-survey-reveals-47-percent-of-digital-workers-struggle-to-find-the-information-needed-to-effectively-perform-their-jobs

Easier Access to Data Insights

Easier access to a range of complex data inputs is at the heart of this transformation. Research suggests 47% of knowledge workers struggle on a regular basis to find the information they need to perform their role, and that the sheer volume of data they must manually deal with clouds their judgment.[6]

Generative AI addresses both issues, overcoming complexity and bringing clarity to airline back-office teams to proactively spot and resolve revenue leakages.
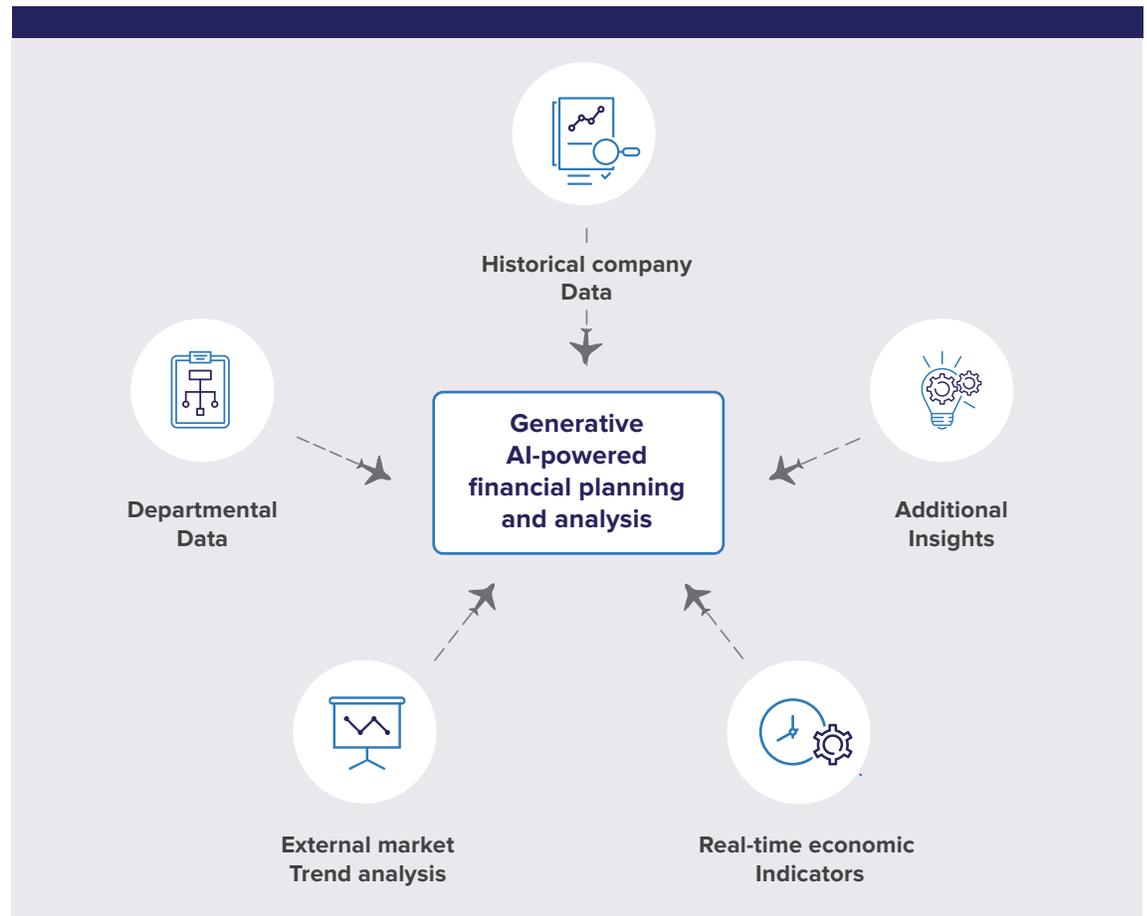
Looking Ahead to Automated Compliance

As generative AI evolves, it will take on an increasingly important role in regulatory compliance, helping airlines avoid fines by analyzing vast data volumes at scale to:

/   Airlines must deal with a sprawling network of players.

/   Local regulations in different markets add an extra layer of complexity.

Again, this takes the administrative burden away from the human in the loop, while ensuring adherence to industry standards and minimizing the risk of regulatory violations. This is especially important for airlines operating across multiple territories with a range of complex regulations in force and where the consequences of non-compliance are significant.

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BUSINESS AREA #6

BUSINESS SUPPORT SYSTEMS

Generative AI's Impact

- Internal Reporting and Search
- Scheduling
- Human Capital Management
- Asset Management
- Safety and Security
- Facilities Management
- Contract Management

Significant   Moderate   Minimal

The large language models that underpin generative AI stand to transform a range of business support systems – from HR to legal to general employee productivity.

From an employee retention perspective, HR departments augmented with generative AI can improve employee satisfaction as staff are not frustrated by slow internal processes. Meanwhile, productivity can increase through automation of scheduling, data input, and analysis. Additionally, the risk of human error can be mitigated with generative AI, providing accurate first-pass legal and accounting drafts for teams to build on.

Allowing the capabilities of generative AI to drill down throughout the organization in this way enables wholesale efficiency improvements. In turn, this supports a more streamlined, cost-effective operating model for healthier profit margins.

PROBLEM

without generative AI

Document drafting. HR currently must draft all documentation for the business.

Onboarding systems. New employees must be onboarded manually.

Contract review. All contracts require the same level of human input to review, negotiate, process etc.

General productivity. Many common business functions (meeting scheduling, data search, etc) are handled manually, or partially automated by traditional AI.

SOLUTION

with generative AI

Document drafting. Generative AI can create initial document drafts for HR teams to finalize.

Onboarding systems. Generative AI can augment human-led onboarding, answering new starter queries and acting as a 'living' platform for first-line employee support.

Contract review. Generative AI can help legal teams to create legal drafts, summarize contracts, and identify if clauses need to be renegotiated or redrafted.

General productivity. Generative AI can bring ease of automation to general productivity tasks, enabling employees to complete actions quickly using available data combined with human language inputs.

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CONCLUSION

The industry-wide turbulence caused by the pandemic has eaten into airline profit margins. Although 2023 looks to be the year the industry will get back on track, customer and employee experiences have undergone a paradigm shift towards a more personalized and optimized experience. And leveraging generative AI across the enterprise will allow airlines to empower travel, elevate experiences, and redefine modern retail.

While this technology is still in its infancy, and its use cases will adjust and evolve in the coming years, it won't be long until more advanced functionality, like drawing up automated flight schedules, will be possible.

There are risks with generative AI today, but the opportunities are immense and cannot be ignored. Spanning all three focus areas – the employee, the passenger, and the business – and touching every business function, generative AI can deliver better outcomes across the board. And given the current economic outlook, this couldn't have come at a better time.

The Sutherland Approach

The introduction of this technology needs careful consideration from airlines, and for many will require step-by-step change to deliver tangible results. Sutherland takes a human-centric approach, helping to redesign experiences around the needs of your customers and employees.

We support your transformation through:

/ Strategic support and consultation around the design and implementation of generative AI for your business, within the context of your broader retail and customer experience strategy.

/ Domain-specific expertise through our work working with global brands in the airline sector.

/ Ongoing maintenance of your generative AI implementation for enhanced CX.

/ Outcome-driven transformations that improve business help, delivering guaranteed savings and results.
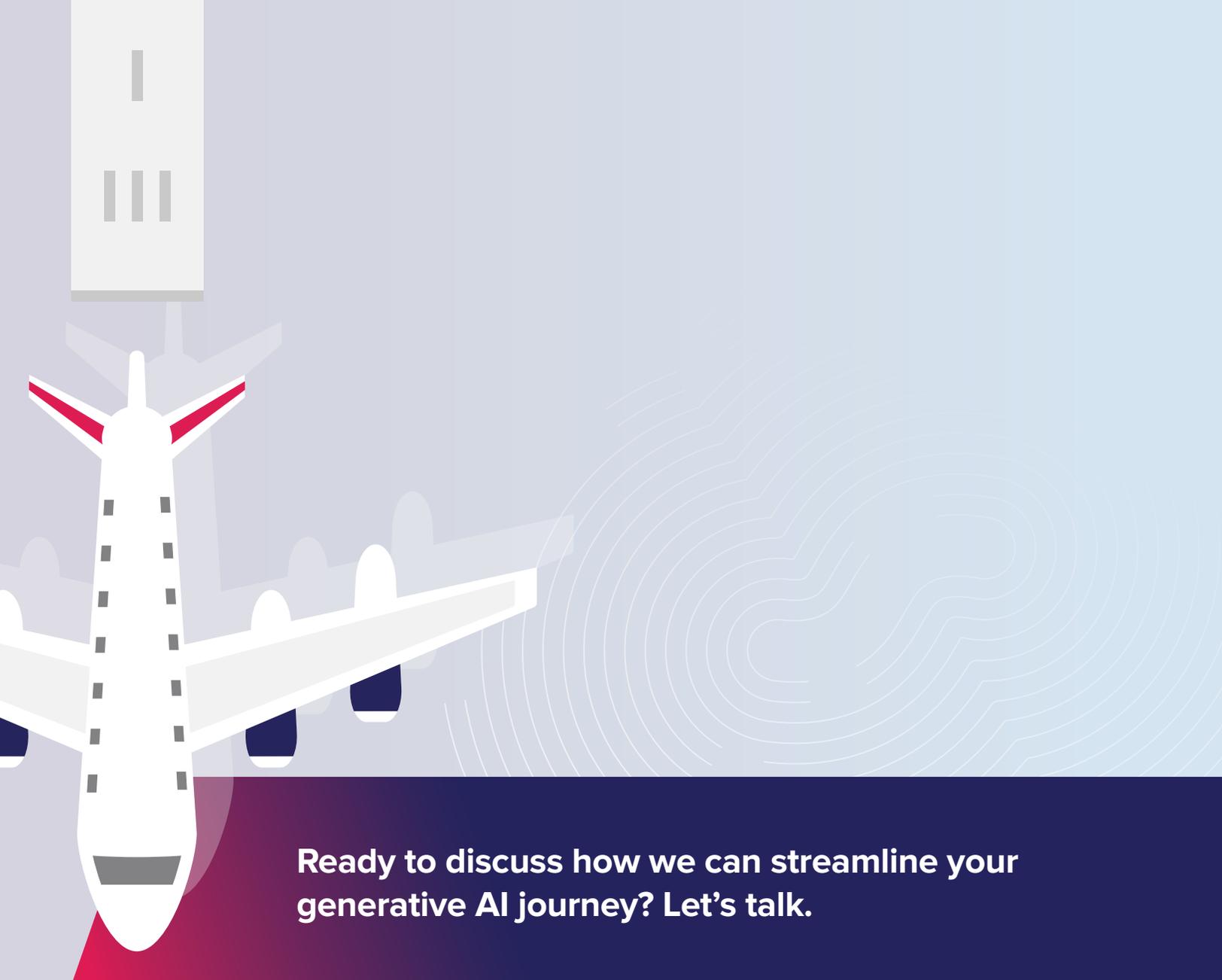
Ready to discuss how we can streamline your generative AI journey? Let's talk.

We make digital
human™

sutherlandglobal.com
sales@sutherlandglobal.com
1.585.498.2042

Sutherland is an experience-led digital transformation company. Our mission is to deliver exceptionally designed and engineered experiences for customers and employees. For over 35 years, we have cared for our client's customers, delivering measurable results and accelerating growth. Our proprietary, AI-based products and platforms are built using robust IP and automation. We are a team of global professionals, operationally effective, culturally meshed, and committed to our clients and to one another. We call it One Sutherland.

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