fileAI

Whitepaper

The economic impact of AI claims processing in insurance

Table of contents

Executive summary

The insurance industry is facing mounting pressure to modernize claims processing while balancing cost efficiency, fraud prevention, and customer expectations. Yet, many insurers still rely on manual workflows and rigid rule-based automation, which limit adaptability, slow claims resolution, and increase operational costs.

Beyond technology limitations, shifting demographics and rising wages are making automation an urgent priority across key global markets. In aging economies such as Japan, South Korea, and parts of Europe, insurers are contending with a shrinking policyholder base, an increasing retiree-to-worker ratio, and a declining labor force—placing significant pressure on cost management and operational efficiency. Coupled with rising labor costs around the world, there is an accelerating need for scalable automation, or automation that is easy to expand with and adapt to changing business needs without compromising performance, reliability, or maintainability. These economic and demographic shifts mean insurers must rethink their operational models, leveraging AI and automation to increase efficiency, reduce costs, and maintain profitability in an evolving market landscape.

To stay competitive, insurers must shift from static, rule-based claims processing to AI-driven intelligence, enabling real-time decision-making, improved fraud detection, and seamless claims automation.

This whitepaper explores the economic rationale for AI adoption, illustrating how insurers can reduce manual intervention, enhance claims accuracy, and accelerate settlements with AI-powered automation. We also showcase real-world use cases demonstrating measurable ROI, as well as insights from insurers who have successfully deployed AI in their claims operations.

For insurers looking to future-proof their claims processes, adopting AI is no longer a competitive advantage—it's a necessity. The shift from rules-based automation to intelligent claims processing will define the next era of insurance innovation, enabling carriers to operate with greater speed, accuracy, and resilience in an evolving market.

Introduction

The insurance sector is undergoing rapid transformation, driven by rising consumer expectations, evolving regulatory frameworks, and the need for greater operational efficiency. However, many insurers still struggle to modernize their claims processing workflows, as outdated processes and fragmented systems create bottlenecks that slow settlements and inflate costs.

Claims operations remain burdened by inefficiencies, from excessive data entry and document verification to prolonged fraud investigations and disjointed internal workflows. Technology, powered by legacy automation approaches built on static, rule-based decision-making, is proving insufficient in today's dynamic claims environment and results in high rates of manual intervention.

To fully leverage AI's potential, insurers must address four fundamental challenges:

01. **Excessive manual handling in claims**
Cross-system data entry, manual document verification, and back-and-forth approvals slow the entire claims lifecycle, leading to high operational costs, human error, and delays in settlements. Insurers must reduce the amount of manual work and rework with AI claims processing.

02. **Technology advancements beyond rule-based workflows**
While rule-based claims processing provides efficiency in structured workflows, it lacks the adaptability to handle complex scenarios, evolving fraud tactics, and real-world variability. Insurers must move toward AI-powered claims intelligence that learns from data, enhances decision-making, and eliminates the need for static rules.

03. **Escalating complexity of fraud**
Fraudsters are becoming more sophisticated, making traditional rule-based fraud detection reactive and labor-intensive. AI-driven predictive analytics enhance fraud prevention in real-time, reducing the need for extensive manual reviews.

04. **High volume of exceptions that trigger manual workflows**
Even in automated claims environments, exceptions frequently trigger manual workflows, requiring human adjusters to cross-check policy data, external sources, and knowledge bases. This inefficiency drives up labor costs, prolongs claims resolution, and contributes to employee burnout. AI is enabling a higher level of automation than ever before.

Understanding these pain points and their opportunities is essential for shaping a robust AI strategy. In the next section, we explore the economic rationale behind AI adoption—highlighting key benefits such as cost savings, enhanced accuracy, and faster processing times—before delving into the real-world use cases that bring these solutions to life.

Insurance sector trends and growth potential

Market landscape and digital transformation

The global insurance market is in the midst of a seismic shift as digital transformation reshapes traditional business models. According to McKinsey's Global Insurance Report 2025: The Pursuit of Growth[1], digital initiatives are not merely an operational improvement but a strategic imperative that could unlock tens of billions of dollars in value over the coming years. Similarly, a report by Bain & Company has identified a nearly $100 billion opportunity for generative AI in property and casualty claims handling[2], underscoring the economic benefits of advanced technologies. Insurers adopting digital platforms have reported cycle time reductions of 20-30% and significant cost savings, emphasizing the urgent need to modernize legacy systems and embrace cloud-based, data-driven infrastructures. AI promises to be the next Industrial Revolution.

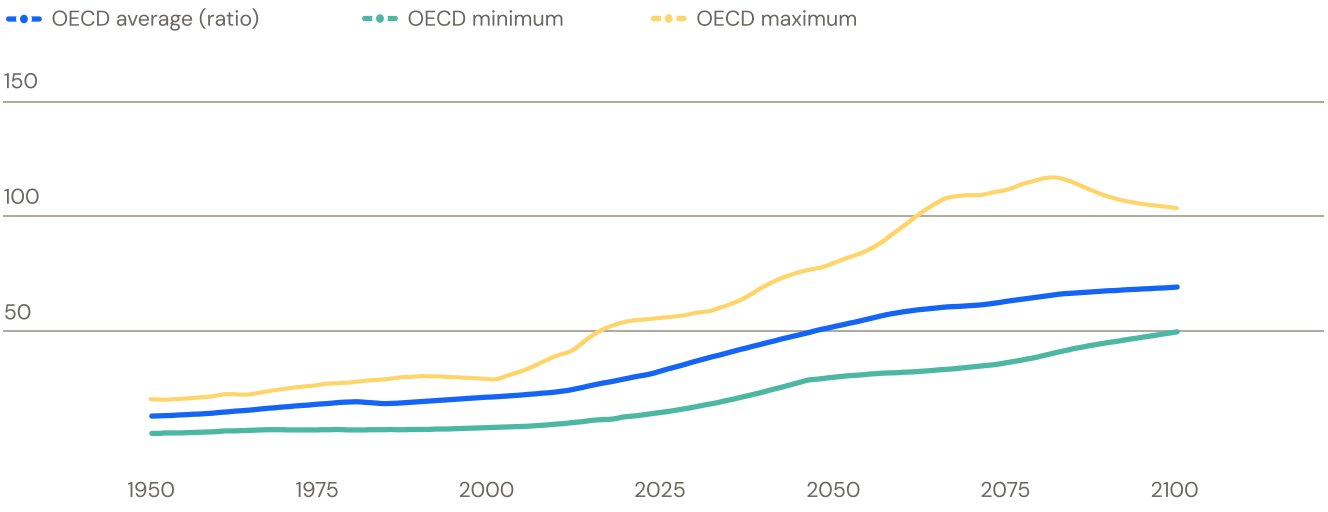
Demographic shifts: Catalysts for innovation and growth

Demographic changes are emerging as one of the most powerful forces impacting the insurance industry. In mature markets such as Japan, South Korea, and parts of Europe, aging populations and declining birth rates are steadily reducing the pool of potential policyholders. A study by OECD on Population Ageing and the need for policy reforms in areas such as pensions, healthcare and labor markets[3] reports that many of these economies are facing a significant increase in the retiree-to-worker ratio, which not only constricts the customer base but also drives up labor costs. In parallel, emerging markets like China are beginning to experience a decline in the working-age population coupled with rising wages, further intensifying the pressure on traditional business models.

Figure 1

Populations are ageing rapidly

The old-age to working-age ratio: Number of people older than 65 years per 100 people of working age (20–64), 1950–2100



Source: United Nations World Population Prospects: The 2022 Revision.

1 Global Insurance Report 2025: The Pursuit of Growth (McKinsey & Company, 2025)
2 100 billion dollar opportunity for generative AI in P&C claims handling (Bain & Company, October 2024)
3 Population ageing (OECD, 2020)

Research from both McKinsey & Company and Bain & Company underscore that while these demographic trends present challenges, they also offer a unique opportunity for innovation. Insurers can harness AI-driven analytics to tailor products to an aging demographic, refine pricing models, and enhance customer engagement through personalized digital experiences. Moreover, by leveraging scalable automation, carriers can counteract the financial pressures of a shrinking workforce and rising labor costs, ensuring long-term profitability and competitive resilience.

Figure 2

By 2033, the proportion of population aged 65 or older is projected to exceed 20 percent in developed markets and reach 15 percent globally.

Share of total population aged ≥65, %

Region[1]	2023	2033E
North America	18	21
Western Europe	21	25
Emerging Asia	10	14
Developed Asia	24	28
Latin America and the Carribean	10	13
Middle East and Africa	6	7
World	**12**	**15**

Share of total population aged ≥65, %

Country (not exhaustive)	2023	2033E
United States	18	21
Canada	21	25
Italy	23	28
Spain	21	26
Germany	23	29
Switzerland	20	25
France	22	25
United Kingdom	19	22
China	14	20
Japan	29	32
South Korea	18	27

1 North America: Canada and US; Western Europe: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Liechtenstein, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and UK; emerging Asia: China, India, Indonesia, Malaysia, Philippines, Thailand, and Vietnam; developed Asia: Australia, Hong Kong SAR, Japan, New Zealand, Singapore, South Korea, and Taiwan China; Latin America and the Caribbean: Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Trinidad and Tobago; Middle East and Africa: Bahrain, Egypt, Iran, Jordan, Kenya, Morocco, Nigeria, South Africa, Tunisia, Türkiye, Saudi Arabia, and UAE; Eastern Europe: Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, and Ukraine. Source: Oxford Economics

Regulatory and technological drivers

Evolving regulatory standards and rapid technological advancements are compelling insurers to rethink their operational frameworks. Globally, regulators are demanding higher transparency and more robust risk management, which forces insurers to invest in real-time data reporting and compliance solutions. Concurrently, technologies such as artificial intelligence, machine learning, and blockchain are enabling insurers to meet these heightened regulatory requirements while driving operational agility. For example, McKinsey and Bain both identified that AI-powered analytics now facilitate near instant fraud detection and risk assessments—a level of responsiveness that state, rule-based systems simply cannot achieve. This convergence of regulatory pressures and technological innovation is not only reshaping risk management practices but is also accelerating the pace of digital transformation across the industry.

Impact on insurer profitability and operational efficiency

Profit margins in the insurance sector are increasingly squeezed by legacy systems, high labor costs, and inefficient manual processes. Studies have shown that automating claims processing can reduce operational expenses by up to 30%, while also minimizing error rates and accelerating settlement times (McKinsey, 2025). Research consistently emphasizes that modernization through digital automation can significantly boost both service quality and profit margins by streamlining workflows and reducing the administrative burden. The shift toward AI-driven claims processing is thus seen not only as a cost-cutting measure but as a critical enabler for building more agile and resilient operating models that can adapt to rapidly changing market dynamics.

The economic rationale: Key benefits of AI in claims processing

Faster claim processing and closures for improved customer satisfaction

Traditional OCR technology once promised to eliminate the tedious, error-prone nature of manual data entry but often fell short due to high costs, technical complexity, and limited accuracy (typically ranging from 60% to 80%). As a result, many companies were forced to continue relying on manual data entry—a costly approach that is increasingly unsustainable given labor shortages, rising wages, and the demand for a better employee experience. In contrast, next-generation generative AI solutions like fileAI are changing the game by achieving up to 99.9% accuracy, transforming data entry automation into a practical and reliable reality. Leveraging generative AI to automate critical functions such as data extraction, documentation summarization, and policy information verification can eliminate repetitive, time-consuming tasks that have historically hindered claims processing productivity.

These advanced capabilities not only drive productivity gains of 10 to 30 percent across risk and compliance functions but also reduce reliance on manual intervention. The resulting efficiencies lower operational costs, accelerate claim settlements, and enable more precise resource allocation. With AI handling routine tasks, insurers can shift their focus to higher-value activities—such as proactive risk assessment, improved customer engagement, and enhanced fraud detection—ultimately elevating overall operational performance and customer satisfaction.

Addressing unstructured data challenges

A persistent challenge for insurers is the management of unstructured data, which underpins critical risk and underwriting decisions. Despite considerable investments in analytics, over one-third of carriers report difficulties in maintaining a reliable single source of truth, leading to increased operational inefficiencies and higher costs. Poor data quality not only forces insurers to resort to labor-intensive manual reconciliation but also compromises the accuracy of risk profiles and pricing decisions.

Generative AI offers a transformative solution by rapidly processing vast amounts of unstructured data and converting it into a unified, high-quality data asset. By automatically extracting key insights and standardizing disparate data sources, AI-driven solutions help insurers build more accurate risk profiles and improve underwriting precision. This enhanced data integrity reduces error rates, streamlines regulatory reporting, and supports faster, more informed decision-making.

In the area of generative AI, insurance companies must be careful about their approach toward generative AI solutions to fully reap the benefits of the technology. Simple prompt engineering or simple fine-tuning with retrieved context RAG (Retrieval Augmented Generation) may not result in frictionless, truly AI-powered workflows.

Ultimately, addressing unstructured data challenges the right way will translate into significant economic benefits—lower operational costs, improved profitability, and a stronger competitive position in an increasingly data-driven market.

Enhanced fraud detection and risk management

Fraudsters are becoming more sophisticated, making traditional rule-based fraud detection reactive and labor-intensive. The integration of AI into claims processing facilitates improved decision-making by providing insurers with actionable insights derived from complex datasets. AI algorithms can identify patterns, detect fraud, and predict claim outcomes with greater accuracy. These capabilities not only enhance the efficiency of claims handling but also strengthen insurers' risk management frameworks. However, alongside these benefits, insurers must navigate potential risks, including biases in AI models, data privacy concerns, and regulatory compliance challenges.

Improved data accuracy and compliance benefits

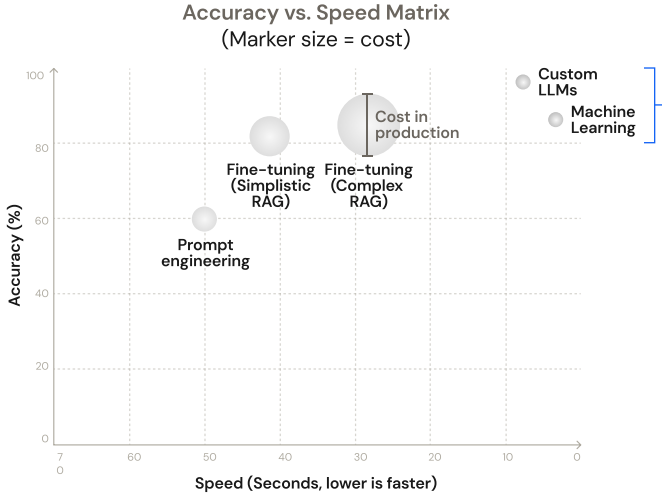
As discussed throughout this whitepaper, manual data handling and legacy OCR technology has burdened insurers for decades. The leap in accuracy by generative AI not only improves operational efficiency but also delivers significant compliance benefits. Automated data extraction ensures that every required field is captured consistently and accurately, which is crucial for meeting regulatory mandates such as GDPR, HIPAA, or industry-specific standards. By minimizing human error, these AI-driven systems provide robust audit trails and secure, searchable records that support transparent reporting and regulatory audits. This heightened level of data integrity and accountability helps reduce compliance risks and ensures that organizations can swiftly respond to regulatory inquiries.

Furthermore, while Robotic Process Automation (RPA) once promised seamless workflow automation, its scalability has been limited by high costs and the need for ongoing maintenance of rigid, rule-based logic. Businesses often find themselves devoting significant resources to updating and troubleshooting these systems. In contrast, fileAI enables users to dynamically prompt images, databases, documents and define dynamic workflows, delivering unprecedented flexibility, accuracy, and productivity without the burden of continuous manual intervention. The system's ability to automatically validate data and trigger alerts for missing or non-compliant information further enhances governance and reduces the likelihood of costly compliance breaches.

Some data science teams have attempted to start tackling unstructured data problems with Generative AI approaches, including prompt engineering on serviced language models or fine-tuning such models with context retrieval. This do-it-yourself approach delivers a maximum of 70-85% accuracy. To move beyond this, customizing large language models (LLMs) and personalized contextual models work most effectively because a more nuanced understanding is required. Furthermore, purpose built contextual models such as fileAI are more scalable and cost-effective, operating with better performance for a fraction of the cost. fileAI can move the needle in terms of automation levels, accuracy, and ROI.

Figure 3

The AI landscape is evolving fast



fileAI

- Custom LLMs and ML models, use-case-specific and efficient.
- Pre-built and ready to go from day 1.
- Low cost, low latency, no hallucination.
- Immediate integration with no endless project timelines.
- LLM and cloud agnostic, but fully certified and highly secure.
- Trained on billions of synthetic data points, no customer data used.

In-house solutions

- Hard to scale.
- Often inefficient, as prompt engineering and fine-tuning are costly with uncertain ROI.
- Complex requirements involve a lot of R&D.
- Talent retention is a problem.

Cloud providers

- Focused only on their own agenda.
- Third-party dependencies or limited solutions extend project timelines.
- Using only their own services and models, which are not optimized for specific use cases.
- Focused on upselling rather than optimization for each use case.

Optimizing resource utilization and lowering operational costs

In today's competitive insurance landscape, controlling operational costs is critical. Traditional claims processing—burdened by manual data entry, repetitive validations, and frequent rework—requires significant Full-Time Equivalent (FTE) labor and drives up overhead expenses. AI-driven solutions like fileAI fundamentally transform these workflows by automating complex tasks that were once entirely manual.

By streamlining data capture, verification, and processing, AI significantly reduces the need for extensive human intervention. This results in a significant decrease in man hours required for claims processing, allowing companies to reallocate human resources toward higher-value tasks such as fraud detection and customer engagement. Moreover, with enhanced accuracy and real-time decision-making capabilities, the frequency of errors and the subsequent rework cycles are dramatically reduced.

For example, early adopters of AI-driven claims automation have reported reductions in labor costs by as much as 30%—a figure that reflects not only savings on routine tasks but also improved operational resilience and faster turnaround times. These cost efficiencies, combined with the ability to scale operations seamlessly without a proportional increase in staffing, underline the significant return on investment (ROI) that AI solutions can deliver. Ultimately, by optimizing resource utilization, insurers can achieve a leaner, more agile operation that drives sustainable profitability in an evolving market.

Comparative analysis: fileAI vs traditional approaches

To clearly illustrate the transformative benefits of fileAI's solution, the table below benchmarks its performance against conventional approaches—including human data processing, optical character recognition (OCR), and robotic process automation (RPA). This side-by-side comparison highlights critical metrics such as accuracy, processing speed, scalability, and cost-effectiveness.

While traditional methods have served the industry for decades, they are now outpaced by modern AI capabilities. For example, where OCR technology typically achieves only 60-80% accuracy, fileAI's AI-based approach can reach up to 99.9% accuracy. Where manual processing and RPA often struggle with scalability and real-time adaptability, fileAI dynamically adjusts to fluctuating claim volumes without incurring proportional increases in cost. Additionally, we have also already covered the risks and limitations to developing in-house generative AI projects under the section Improved data accuracy and compliance benefits.

By reducing manual intervention, streamlining data extraction, and delivering consistent, high-quality outputs, fileAI not only drives down operational costs but also significantly enhances the overall claims experience for both customers and employees. The table below serves as a visual representation of these benefits, providing a compelling justification for why transitioning to an AI-driven model is essential for modern insurers.

Figure 4

New-age data processing capabilities

The fileAI difference

	Humans	OCR	RPA	AI-based data processing
Scalability	Low	Low	Medium	**High ↑**
Automation	Manual training	Template-based	Rule-based	**AI-based**
Accuracy	~90%	~60%	~80%	**Up to 99.99%**
Decision-making	Mostly rule-based	None	Strictly rule-based	**Self-learning**
Workflow	Mostly rule-based	None	Strictly rule-based	**Smart workflows**
Price	$$$	$	$$	**$**

Figure 5

Current solutions and limitations

	OCR	RPA	Specialized AI Agents
What is it?	Traditional OCR tools primarily focus on **character recognition** in structured documents like invoices, forms and receipts.	Robotic Process Automation (RPA) is typically focused on **task automation**.	AI Agents are **AI tools that can automate complex tasks** that would otherwise require human resources.
Limitations	OCR often fails to **accurately process complex or multilingual documents**, particularly in **Asian languages**, or **character-based scripts** (e.g., Chinese, Japanese, etc.).	RPA struggles to handle **file-heavy workflows**, especially when those files contain unstructured data. RPA also requires **significant ongoing maintenance** as workflows evolve.	Specialized AI agents focus on **narrow use cases** and often lack the **horizontal scalability** needed to extend across business functions.
fileAI advantage	Our AI models are not limited by OCR's rigid architecture and can process a wider variety of unstructured data in **over 200 languages**, handling **complex, handwritten, or image-based documents** with **higher speed and accuracy**.	fileAI uses **advanced ML models and LLMs** to automate **end-to-end workflows**, from document ingestion to data validation and processing, **with little to no manual intervention**. This means faster implementation and **lower long-term maintenance** costs.	fileAI is the only **horizontal AI solution** that automates workflows for **multiple business functions** (Finance, Legal, Operations, Compliance), allowing clients and partners to **cross-sell and up-sell** and increase revenue potential.

Figure 6

A more powerful, scalable and cost-effective AI solution

Solution	Technology	Processing accuracy and speed	Primary use case
fileAI	ML + LLM Models	High accuracy and speed	End-to-end workflow automation
RPA	ML Models	Low to Medium	Task automation
OCR	Custom OCR + ML Models	Low to Medium	Document extraction

Practical applications and use cases for the insurance industry

Addressing modern requirements despite legacy infrastructure constraints

Traditional automation methods: Template-driven, rule-based, and configuration-dependent approaches (includes prompt engineering and fine-tuning)

Many insurers have historically relied on template-driven or rule-based automation systems to streamline claims processing. These approaches use predefined configurations and logic to automate repetitive tasks. While they can handle standard, predictable scenarios, their rigidity makes them ill-suited for complex or evolving claim conditions. Generative AI has sparked hope amongst insurance data teams, with some insurers investing in in-house prompt engineering and fine-tuning. In the vast majority of cases, this investment has not lived up to the hype or expectations due to the significant R&D and complex nature of diverse inputs required. As business requirements change—whether due to new regulatory mandates or shifting market demands—the inflexibility of existing solutions ultimately hampers operational agility and limits the potential for cost savings.

On-premise solutions: Technical burdens, high infrastructure costs, and upgrade challenges

In addition to the limitations of static automation, many insurers have invested in on-premise systems that pose their own challenges. Traditional on-premise solutions demand substantial capital expenditure, not only for initial deployment but also for ongoing maintenance, upgrades, and security compliance. The technical burden of managing hardware, software updates, and complex integrations with existing legacy systems further complicates operations. As labor costs rise and the pace of technological change accelerates, the high infrastructure and upgrade costs associated with on-premise systems become increasingly unsustainable. In contrast, cloud-based and AI-driven solutions offer scalability and flexibility without the associated technical overhead, allowing insurers to rapidly adapt to new business requirements while significantly reducing the total cost of ownership.

Next-generation AI platforms—such as fileAI—provide a dynamic alternative to these legacy models. They not only replace static, rule-based workflows with adaptive, self-learning systems but also migrate critical processes to the cloud, alleviating the heavy burden of on-premise infrastructure. This evolution enables insurers to achieve higher efficiency, faster response times, and improved accuracy, ultimately delivering a stronger return on investment.

Management of unstructured data

In the insurance industry, unstructured data is a critical challenge—and a significant opportunity. From enrollment and underwriting to claims and regulatory reporting, insurers rely on a vast array of files and digital artifacts that lack standardized formats. This fragmentation makes manual processing labor-intensive and error-prone, leading to delays, increased operational risk, and higher costs. Advanced AI-powered data management platforms now enable insurers to automatically extract, classify, and aggregate data from disparate sources, transforming raw information into actionable insights. The following use cases illustrate how managing unstructured data can drive efficiency and innovation throughout the insurance lifecycle.

Enrollment

Insurance companies process millions of documents each year during enrollment, as new clients submit applications, identification documents, and other required records. Historically, this has been a manual process that creates significant bottlenecks. AI-driven solutions can automatically extract key data points from enrollment documents, standardize information, and rapidly validate applications—thereby reducing processing times and improving the customer onboarding experience.

Appraisals
In property and casualty insurance, appraisals often include both written reports and image-based data (e.g., photos of property interiors and exteriors). Advanced unstructured data platforms can analyze these diverse inputs to verify asset conditions and match them to property descriptions. This automated processing not only accelerates appraisal workflows but also enhances accuracy, ultimately leading to better risk assessment and pricing.

Commercial underwriting
Commercial underwriting often involves thousands of pages of documentation. Traditional methods struggle to process this volume of information efficiently. By leveraging AI to automatically recognize and "score" underwriting criteria attributes, insurers can dramatically reduce proposal response times. Automated data extraction from vast document sets ensures that key risk factors are consistently identified and integrated into underwriting models, resulting in more informed and timely decisions.

Claims processing
Unstructured data is a significant barrier to efficient claims processing. Claims intake often involves forms, medical reports, police statements, images, videos and supporting documents. These items arrive in varied formats including scanned PDFs, photographs, or third-party data feeds, making it difficult to unify and analyze them efficiently. AI-powered platforms can automatically classify and annotate incoming claims documents, ensuring that each claim is accurately routed to the appropriate subject matter expert for evaluation. This automation minimizes manual intervention, reduces processing errors, and leads to faster settlements, thereby improving customer satisfaction and operational efficiency.

Regulatory compliance
Insurance is a highly regulated industry with numerous state and federal requirements. Unstructured data—when managed effectively—can be leveraged to build a robust audit trail and ensure compliance with mandates such as Solvency II, IFRS, and Dodd-Frank. Automated data extraction and standardized reporting not only facilitate timely responses to regulatory inquiries but also reduce the expenses associated with manual compliance efforts.

Policy analysis
For insurers, analyzing vast collections of policies is essential to understanding the evolution of contract language in response to regulatory changes. An unstructured data platform can parse large volumes of policy documents, extract and classify key clauses, and provide aggregated insights. This capability helps insurers assess historical trends, refine risk models, and ensure that policies remain aligned with current legal and regulatory frameworks.

Broker intake
Broker intake processes are notoriously labor-intensive, often consuming a substantial portion of an underwriter's time. Automating the extraction and validation of broker-submitted documents can significantly streamline this process, enabling underwriters to respond more quickly and efficiently. By reducing manual data entry and duplication of effort, AI-driven solutions not only enhance productivity but also improve broker relationships and customer service.

Loss run analysis
Loss run reports are critical in commercial underwriting but are often cumbersome to collect and analyze. An AI-powered system can automate the extraction of loss data from diverse reports, ensuring accurate and timely integration into underwriting systems. This improves the reliability of applicant loss histories and enables underwriters to make more precise risk assessments.

Beyond data processing: Agentic AI automation

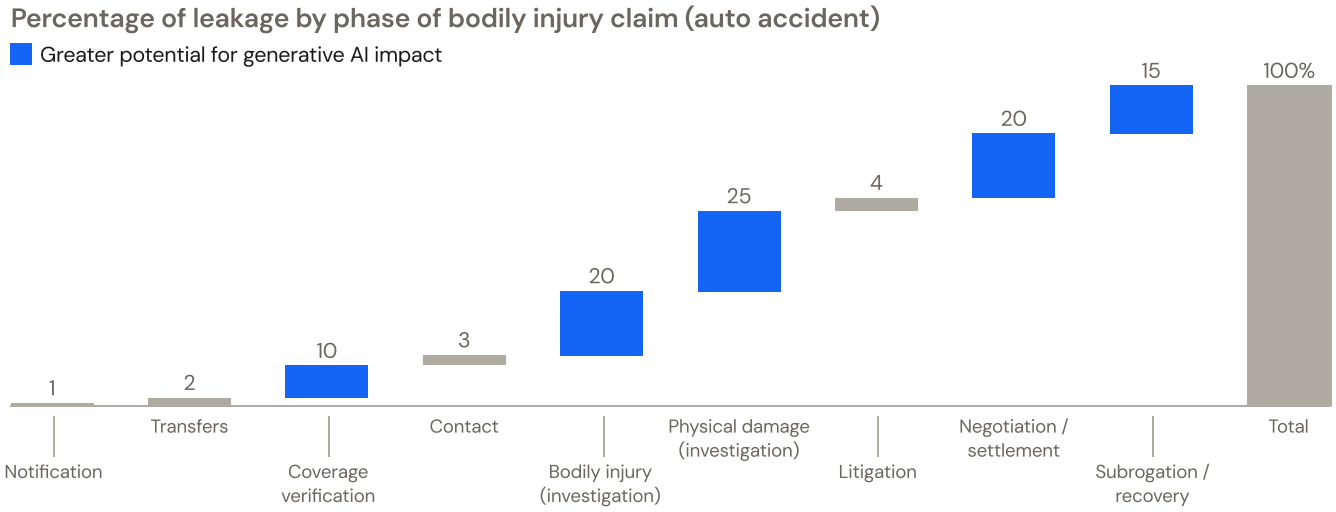
As insurers grapple with an ever-growing volume of data and increasingly complex operational demands, the next frontier lies in agentic AI automation—systems that not only process data but also autonomously drive proactive actions and decisions. Research from McKinsey (2025) suggests that AI-driven workflows can reduce claims processing cycle times by as much as 30%, underscoring the transformative potential of moving beyond static, rule-based approaches. Complementing these findings, recent research by Bain & Company highlights that generative AI can reduce loss-adjusting expenses by 20% to 25% and curtail leakage by 30% to 50%, potentially unlocking over $100 billion in benefits for insurers and their customers.

This new generation of AI is already making its mark in the industry. For example, Zurich is feeding six years

of claims data into AI models to identify specific loss drivers and refine underwriting, while a South American pilot has achieved up to a 50% increase in productivity and a 40% reduction in leakage through tools that handle voice-to-text transcription, automated claim summarization, and intelligent chatbot support. In the Asia-Pacific region, similar implementations have resulted in coverage validation processes that save 10 to 20 minutes per claim. With 65% of insurers surveyed by Reuters identifying technology—including generative AI—as the best approach to address rising claims costs, it is clear that these advanced systems not only streamline operations and reduce costs but also enhance data accuracy, improve risk management, and elevate the overall customer experience. Ultimately, by embracing agentic AI automation, insurers can achieve significant efficiency gains and a more agile, responsive claims process that drives both profitability and competitive advantage.

Figure 7

Generative AI will improve coverage verification, investigation, negotiation, and recoveries



Source: Bain & Company

Pro-active workflows

Agentic AI systems enable insurers to transition from reactive to proactive claims management. Rather than waiting for manual intervention, these platforms continuously monitor data streams to detect anomalies, automatically flag claims that require additional scrutiny, and initiate follow-up actions—often before issues escalate. For instance, proactive automation has been shown to reduce investigation times by up to 40% (Bain & Company, 2022), ensuring that potential problems are addressed promptly. By preemptively managing workflow bottlenecks, insurers not only accelerate processing times but also free up valuable human resources to focus on complex, high-value tasks.

Adaptive decision making

Static, rule-based systems have long been a barrier to dynamic claims processing. In contrast, agentic AI leverages machine learning to adapt its decision-making process continuously. This means that the system refines its risk scoring, fraud detection, and claim routing parameters in real time based on both historical trends and emerging data patterns. Research indicates that such adaptive systems can improve claim accuracy by up to 25% (McKinsey, 2025). As a result, insurers benefit from decisions that evolve with changing market conditions and claim characteristics—leading to smarter underwriting, reduced error rates, and ultimately, enhanced profitability.

Omnichannel communication

In today's digital era, seamless communication across multiple channels is critical for delivering superior customer experiences and achieving operational efficiency in claims processing. Agentic AI platforms integrate seamlessly with email, SMS, chatbots, and mobile applications, ensuring that stakeholders—from customers to internal teams—receive timely and personalized updates. Advanced generative AI (GenAI) and large-language models (LLMs) further enhance this experience by supporting omni-channel sales and service initiatives. According

to a report by BCG on omnichannel in Insurance: Successfully turning digital leads into high value sales[4], GenAI can complement human advisors by delivering tailored content and message recommendations based on real-time customer data from the customer data platform (CDP), successfully turning digital leads into high value sales.

Another example of GenAI in insurance is advisor assistants who analyze customer profiles and suggests personalized answer options, enabling advisors to respond more quickly and effectively. It can also automatically summarize customer appointments, update the CDP, and recommend next-best actions. Beyond assisting human advisors, GenAI also plays a crucial role in advisor enablement by simulating human conversations to train advisors in sales techniques, client engagement, and handling objections in remote environments.

Moreover, these advanced systems drive product personalization by continuously updating insights from live customer interactions. They provide customized coverage recommendations that extend beyond simple premium-coverage permutations and accommodate highly modular product configurations. Such robust, multi-channel integration not only streamlines communication workflows but also reduces follow-up inquiries—leading to a reported 20% boost in customer satisfaction and a 15% reduction in repetitive queries, according to BCG.

By unifying these communication channels and integrating advanced AI capabilities, insurers can achieve a truly agile omnichannel experience—one that not only reduces operational costs but also drives competitive advantage through increased personalization and enhanced customer engagement.

Figure 8

Key features of a seamless high-output omnichannel journey

Insurance sales / purchase journey

Key features

Step 1 Nurturing and matching		Step 2 Contacting and warming		Step 3 Meeting and conversion		Step 4 Up / X-sell
Insurance offers / hooks online and in partner apps	MarTech engine for lead nurturing	Lead insights and digital footprint	Advisor Portal	Customer-centric KYC / needs analysis	Conversational data capture tools	Data-driven propensity models to retarget
Contextualized landing pages	Self-discovery engagement tools	Advisor nudges and message services	Lead management module	Pitch templates / guided sketch	Interactive, real-time product quotation tool	Nurturing advisors for high potential customers
Appointment booking	Hero products and latest promos	Personalized info-board ahead of appointment	Calendar management	Integration / prefilled application forms	Integrations for streamlined issuance	
Immediate chat / call with advisor	In-partner-app video call	Lead reactivation via marketing automation	Embedded training / adoption module	Advisor dashboard / control tower	Funnel and SLA management for supervisors	
Smart advisor matching / lead allocation	...	...		Cross-channel application and closing capabilities	...	

Source: BCG Analysis

Scalable implementation

Modern AI solutions, such as fileAI, are built on flexible, cloud-based architectures that allow insurers to integrate advanced automation into existing systems with minimal disruption. This scalability is critical, as it enables AI platforms to dynamically adjust to fluctuating claim volumes while maintaining high performance and reliability—without incurring proportional increases in capital expenditure. In fact, in 2021, IDC was already estimating that scalable AI implementations can improve data throughput by up to 10 times compared

4 Omni-channel in Insurance: Successfully turning digital leads into high value sales (BCG, June 2024)

to traditional legacy systems, ensuring consistent operational performance even during peak periods and supporting continuous innovation.

Underwriting teams traditionally grapple with thousands of policy documents, endorsements, and renewals—each with unique formatting quirks that make manual data entry both slow and error-prone. fileAI's automated document handling system addresses this challenge by seamlessly extracting and validating key policy information—such as policyholder details, coverage amounts, terms, and conditions. Beyond basic extraction, fileAI uses machine learning models trained on domain-specific language, allowing for higher accuracy when parsing legal or industry-specific terminology. The data is then routed into underwriting or policy administration systems. This not only reduces the need for costly manual rework but also accelerates policy issuance and enhances compliance.

An additional layer of scalability is added with horizontal AI solutions. While many specialized AI tools address isolated pain points, fileAI distinguishes itself by offering a comprehensive, horizontal solution for processing any file type—whether structured or unstructured—across the entire claims process. This enables fileAI to address the majority of use cases throughout the insurance lifecycle, and as detailed under the Management of Unstructured Data section.

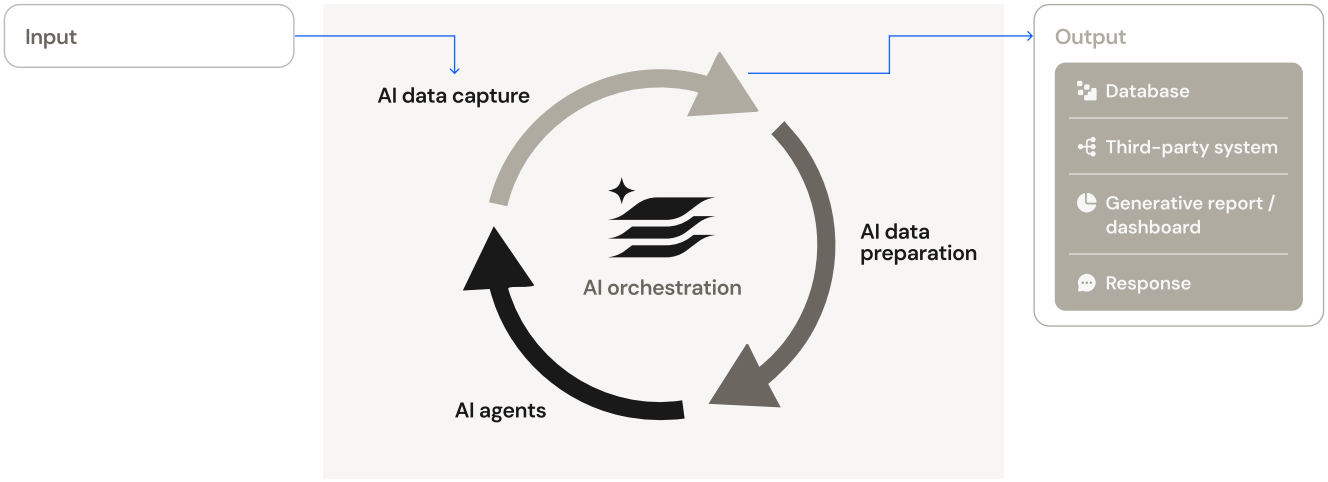
By automating everything from data extraction and fraud detection to personalized pricing and claims processing, fileAI delivers a scalable, end-to-end solution that can drive significant cost efficiencies and operational agility for insurers looking to modernize their legacy systems.

Touchless end-to-end AI workflow and integration

To truly appreciate the transformative impact of fileAI's solution, it is essential to understand how its architecture enables touchless, end-to-end AI workflows. The flowchart below illustrates how fileAI processes both unstructured and structured data—from the initial pre-processing stage, through advanced post-processing, to seamless integration with legacy systems via over 200+ interfaces.

Figure 9

AI components that capture, assess, and automate



This visual framework demonstrates the following key capabilities:

- **Ingesting data with file processing and capture**
  - ↳ Multimodal (text, voice, image, video, etc.).
  - ↳ Captures data from multiple sources (API, email, servers, mobile, etc.).
  - ↳ Proprietary customized LLMs, and fine-tuned LLMs with context retrieval, predictive AI-models.

- **Preparing data with AI data preparation**
  - ↳ Uses AI schema to normalize, clean, prepare, and validate data.
  - ↳ Conducts fraud checks by contextualizing and interpreting data.
  - ↳ AI-powered learning to group and compare context information.
  - ↳ AI-powered data preparation agents.

- **Understanding and analyzing data with AI agents and orchestration**
  - ↳ Makes assessments and triggers workflows.
  - ↳ Requests additional information and performs fraud checks (will re-run the process to improve performance).
  - ↳ Integrates with third-party solutions for additional verification.

- **Generating a final output**
  - ↳ Transforms and enriches data.
  - ↳ Generates reports, BI/MIS outcomes automatically.
  - ↳ Manages exceptions and case handling, ensuring business processes are completed.
  - ↳ Integrates with target systems for automation.

By automating the entire data lifecycle, fileAI accelerates claims processing while significantly reducing manual intervention, lowering operational costs, and enhancing overall data integrity and regulatory compliance. This scalable, agile architecture underpins a robust digital transformation strategy for insurers, enabling them to modernize their operations while preserving the strengths of their legacy systems.

fileAI customer stories

MSIG

Case Study: MSIG—Transforming claims processing with agentic AI for unprecedented efficiency gains

"Just one month into our project, fileAI is reducing our claims processing time by 60% and claims operating expenses by 40%."

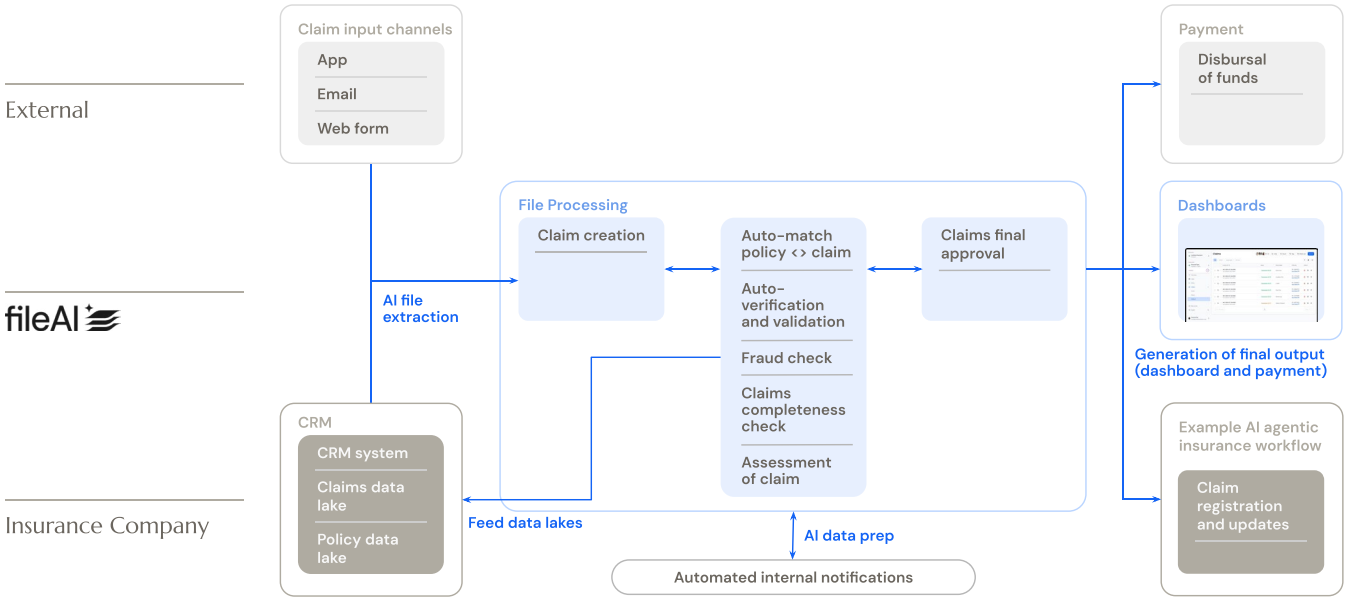
Enny Halim
EVP Business Development & Digitalization at MSIG Asia

MSIG (Mitsui Sumitomo Insurance Group), one of Japan's largest insurers and a Fortune Global 500 company, leveraged fileAI's advanced AI-driven solution to completely transform its claims processing operations. By automating data extraction, fraud detection, and document validation, the platform seamlessly integrated with MSIG's claims management system—drastically reducing manual interventions and enhancing overall efficiency.

- **Key results**
  - ↳ Shortened processing time from 5 hours to minutes.
  - ↳ Reduced claims operating expenses by 18%.
  - ↳ Saved 40% in costs related to processing claims.
  - ↳ All paperwork managed in the cloud.

Figure 10

AI-driven insurance claims automation



Case Study: DirectAsia—Automating document checks and resubmissions for accelerated claims resolution

"fileAI has revolutionized our claims processing. Immediately upon implementation, we saw a 80% reduction in time spent on processing, review, and cross-checking claims, while maintaining a 98%+ accuracy rate in document extraction."

Sam Callaghan
Claims Director at DirectAsia Insurance

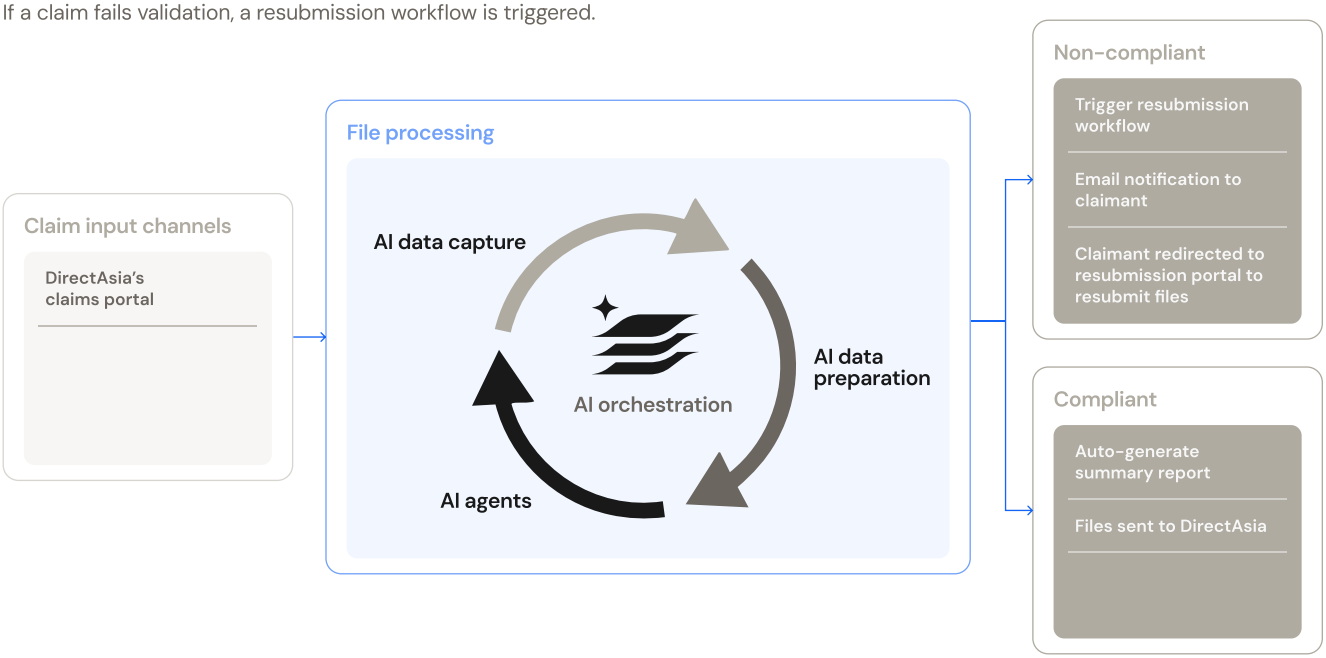
DirectAsia, a prominent insurer in a competitive market, implemented fileAI's AI-driven automation to streamline its document validation and resubmission processes. This solution replaced labor-intensive manual reviews with an end-to-end automated workflow, significantly reducing processing time and operating costs while enhancing data accuracy and overall customer satisfaction.

- **Key results**
  - ↳ Thousands of claims processed per month without human intervention.
  - ↳ 98% overall accuracy in document extraction.
  - ↳ 80% reduction in processing time upon implementation.

Figure 11

AI-driven insurance claims automation

If a claim fails validation, a resubmission workflow is triggered.



Challenges and considerations for management

As insurers evaluate the economic impact of AI-driven claims processing, addressing key challenges is critical for success. The following considerations, viewed from the perspectives of technology, finance, and risk management are essential for a robust digital transformation.

Technology leadership: CTO / CIO considerations

For IT leaders, the transition from legacy systems to advanced AI solutions presents both opportunities and challenges. Modernizing existing infrastructures requires the seamless integration of new, AI-driven workflows with established systems to maintain data integrity. This integration is vital for ensuring that automated processes communicate effectively across platforms. Additionally, heightened digitization increases the importance of robust cybersecurity measures and data privacy protocols. Organizations must safeguard sensitive claims data while also ensuring that their new systems remain scalable and flexible. Cloud-based architectures offer secure and dynamic scalability, enabling systems to adapt in real time to fluctuations in claim volumes while reducing the total cost of ownership by eliminating the need for costly hardware upgrades.

Financial stewardship: CFO considerations

From a financial perspective, the investment in AI must be backed by sound returns given CFOs are tasked with balancing upfront costs with long-term savings. The ROI from AI-driven claims processing is measured in significant cost reductions and efficiency gains. Research indicates that AI automation can cut operating expenses by substantial margins, with faster processing times translating directly into lower labor costs and fewer errors. Optimizing budget allocation to support the transition ensures that the benefits of reduced manual intervention and streamlined workflows are realized, allowing financial resources to be reinvested in further innovation. As insurers reduce their reliance on labor-intensive processes, they can achieve enhanced profitability and maintain a competitive edge.

Risk and compliance oversight: CRO considerations

For risk and compliance leaders, the digital transformation must enhance, not undermine, the existing risk management framework. The implementation of AI should ensure a consistent and reliable repository of data—critical for accurate regulatory reporting and risk assessment. High data quality is imperative for compliance with stringent regulations such as Solvency II, and AI solutions can significantly reduce error rates while automating comprehensive audit trails. However, as AI reduces human error, it is important to maintain a "human in the loop" approach to monitor and correct any anomalies or biases that may emerge. This oversight is essential to ensure that the automated system remains both effective and ethically sound, ultimately reinforcing the organization's commitment to regulatory excellence and robust risk management.

By addressing these challenges from the perspectives of technology, finance, and risk management, insurers can confidently pursue an AI-driven transformation. Overcoming these hurdles not only leads to significant cost efficiencies and improved operational performance but also strengthens the overall risk and compliance framework, positioning insurers to thrive in a competitive, data-driven marketplace.

The future of AI in claims processing

The future of AI in claims processing promises to reinvigorate the insurance landscape. As technological advancements continue at a rapid pace, emerging trends—such as generative AI, predictive analytics, and deep learning—are set to drive greater automation, precision, and personalization in claims management.

Insurers must integrate AI with legacy systems to lower costs, reduce operational risks, improve the overall customer experience, and create new revenue opportunities. Furthermore, evolving regulatory standards and shifting consumer expectations will compel insurers to adopt more agile, scalable AI solutions to maintain a competitive edge.

In our fast-changing world, early adopters of advanced AI will not only optimize current processes but also pave the way for innovative business models that redefine industry standards. It's clearer than ever that to remain relevant and profitable, insurers must embrace AI's future potential.

Conclusion

The rapid evolution of the insurance landscape—driven by rising operational costs, regulatory pressures, shifting demographics, and increasing customer expectations—has created an urgent need for transformative technologies in claims processing. Throughout this whitepaper, we have demonstrated how AI-driven solutions, such as fileAI, are not only streamlining data extraction and validation but also enabling proactive, adaptive workflows that significantly reduce processing times, lower costs, and enhance overall operational efficiency.

By harnessing agentic AI, insurers like MSIG and DirectAsia have achieved remarkable improvements: from a 90% reduction in processing times (in some cases down to seconds) to dramatic cuts in operating expenses and manual interventions. These outcomes underscore the immense potential for AI to revolutionize the insurance value chain, delivering both immediate financial benefits and long-term competitive advantages.

Looking ahead, the future of claims processing will be defined by scalable, integrated AI solutions that continuously adapt to evolving market demands and regulatory requirements. Insurers must embrace these innovations to not only remain competitive but also to drive a new era of customer-centric, efficient, and agile operations.

For decision-makers, the path forward is clear: invest in AI-driven automation to unlock substantial ROI, optimize resource allocation, and set new industry standards. The transformative impact of AI on claims processing is not merely an opportunity—it is an imperative for sustainable growth and success in a data-driven marketplace.

fileAI is the leading platform for automating unstructured data processing at scale, harnessing advanced AI to transform how businesses extract, organize, and enrich information from every file type. Trusted by global enterprises such as MS&AD, Toshiba, KFC, DirectAsia, Nippon, and Ernst & Young, fileAI processes over 200 million files annually—delivering transformative productivity gains and significant cost savings. Supporting more than 200 languages, fileAI empowers organizations of all sizes to eliminate tedious manual processes, drive operational efficiency, and unlock new opportunities for growth.

Discover how fileAI can revolutionize your insurance operations.

To speak with our dedicated insurance solutions team, please contact us at www.file.ai/contacts.

Visit www.file.ai for further details.