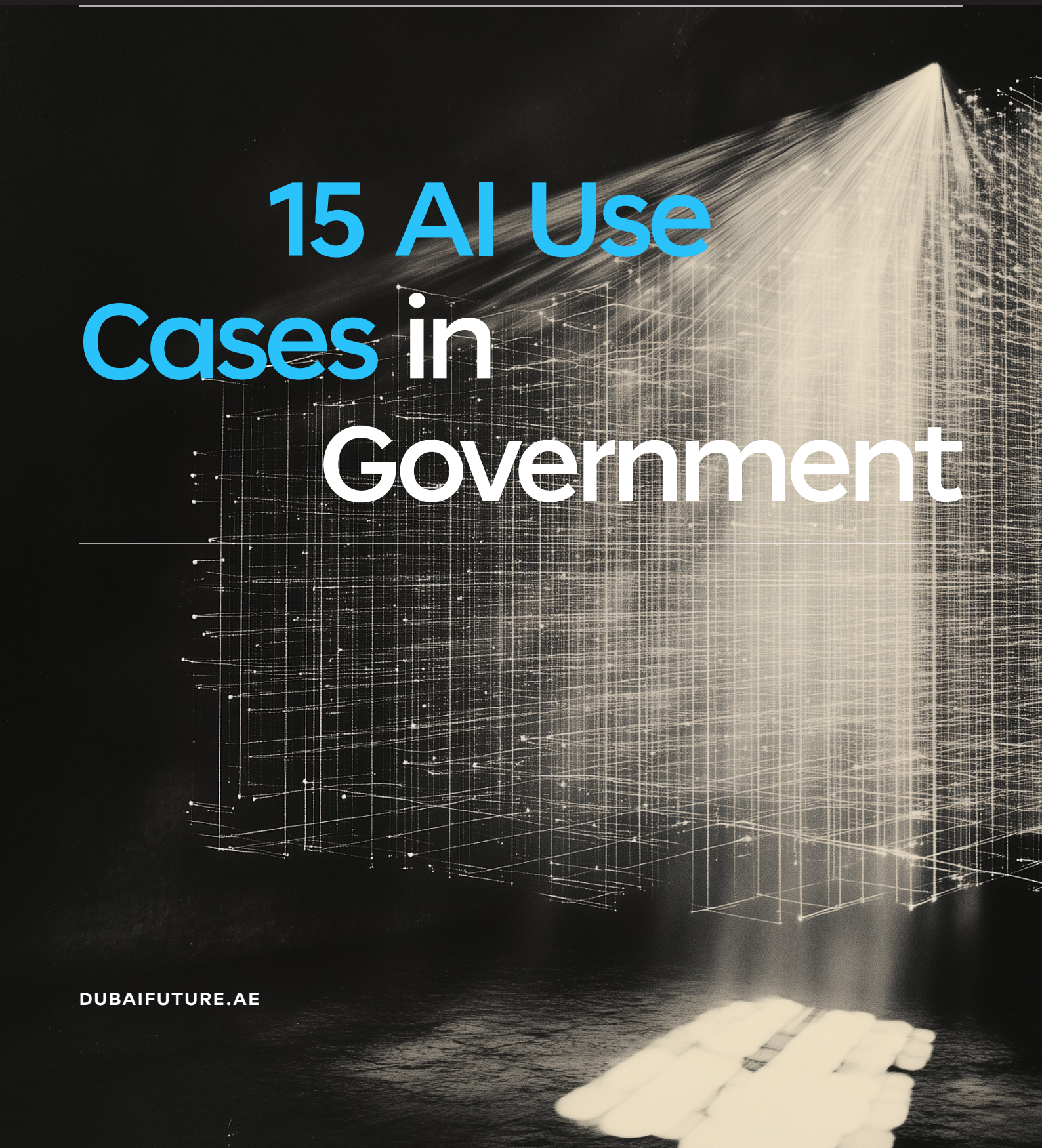
مؤسسة دبي للمستقبل
DUBAI FUTURE FOUNDATION

مركز دبي لاستخدامات الذكاء الاصطناعي
Dubai Centre for Artificial Intelligence

15 AI Use Cases in Government



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Foreword

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Until relatively recently, artificial intelligence (AI) was very much an unknown, a shrouded frontier in which there were only a handful of scientists and researchers exploring. But today, the fog around AI has lifted and we find ourselves on the brink of a new era of technological discovery, where pioneers in academia, business and government are reimagining entire systems and industries. Not since the Industrial Revolution has technology had such vast potential to transform our economies, societies and governments.

In the Middle East, AI is catalyzing what is already a rapid pace of change and development. Its impact on public services is profound, with local and federal governments displaying an unmatched enthusiasm for harnessing AI to empower national strategies and diversify economies.

The economic imperative to embrace AI is undeniable, with the region standing to capture 2% of the total global value generated by AI by 2030 – equating to a staggering US$320 billion. The UAE is expected to experience the largest impact, with AI potentially contributing nearly 14% of GDP by 2030.

How do we capture this opportunity? Dubai – one of the earliest cities to identify the potential of AI and implement its use cases – has created a blueprint, building specialized platforms and mechanisms designed specifically to capture AI's promise. The Dubai Centre for Artificial Intelligence (DCAI) is one of these. Established in June 2023 by the Dubai Future Foundation, Digital Dubai Authority, Dubai Electricity and Water Authority (DEWA), and the Dubai Media Council under the leadership of His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai, Deputy Prime Minister, and Minister of Defence of the UAE, Chairman of the Board of Trustees of Dubai Future Foundation. DCAI's mission is clear – to accelerate the adoption and integration of AI within Dubai's government ecosystem, and to position the city as a global leader in AI.

Part of this mission involves a deep analysis of use cases to help understand how AI can be deployed most effectively and identify what kind of regulatory and technological infrastructure updates need to take place to facilitate deployment. The use cases outlined in this report represent the 15 most critical and high-impact opportunities for enhancing public services through AI, highlighting how the technology can be a powerful tool in solving some of the most pressing challenges faced by governments internationally.

As such, this report is a tool intended to both inspire and guide policymakers, industry leaders, and innovators as they explore how to implement AI to deliver on the promise of a smarter, more resilient future.

Dubai is one of the earliest cities to identify the potential of AI and implement its use cases.

Introduction

The Dubai Centre for Artificial Intelligence (DCAI) is a key initiative launched in June 2023 by the Dubai Future Foundation, Digital Dubai Authority, Dubai Electricity and Water Authority (DEWA), and the Dubai Media Council under the patronage of His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum. Its primary mission is to accelerate the adoption and integration of artificial intelligence (AI) within Dubai's government entities, thereby enhancing the efficiency and effectiveness of public services.

The DCAI aims to position Dubai as a global leader in AI, by providing a collaborative platform for the government, private sector, and academia, to develop and deploy AI solutions. With a focus on defining supportive policies and regulations, promoting AI awareness through workshops and training, and fostering innovation by partnering with AI startups, the DCAI is set to transform Dubai's public service landscape.

The Dubai Future Accelerators (DFA), in collaboration with the Dubai Centre for Artificial Intelligence (DCAI), launched the first dedicated Generative AI program with the goal of enhancing and future-proofing government services across Dubai.

The program was structured in two key phases:
DCAI led an initial challenge discovery journey with 33 Dubai government entities to identify pressing operational and strategic needs. These challenges were then translated into a comprehensive pool of 183 potential GenAI use cases. Following this, DFA established a three month innovation sandbox an experimental testbed that enabled leading AI companies to collaborate directly with government stakeholders, trial solutions, and validate their impact within a supportive regulatory environment.

Thanks to the close cooperation between participating entities and technology partners, Dubai successfully executed 75 pilot projects. This report highlights 15 use cases from that portfolio.

01

AI IN CUSTOMER SERVICES

Shaping the Future of Government-Citizen Interactions in Dubai

WHY GOVERNMENT CUSTOMER SERVICES IS A GLOBAL CHALLENGE

Government customer services often struggle with long processing times and insufficient information, leading to citizen frustration. However, progress is being made. A global survey found that 56% of respondents from 29 countries are satisfied with government services, particularly in areas like identity document applications [1]. Yet, the need for quicker, more efficient service remains. Countries like Singapore, Denmark, and the UAE are setting the standard by adopting customer-focused designs and digital platforms, using technology to boost satisfaction and trust in government services [1].

KEY STATISTICS

AI customer service tools can handle up to

80%

of routine inquiries, reducing response times by

70%

and significantly cutting operational costs [2]

Adoption is slow, The Govloop report, based on a survey of 217 public-sector employees where only

12%

of agencies currently using AI or chatbots, while **66% are not considering implementing them at all.** The main reasons for this slow adoption include other pressing priorities, limited funding, and a lack of understanding of the technology's potential. [3]

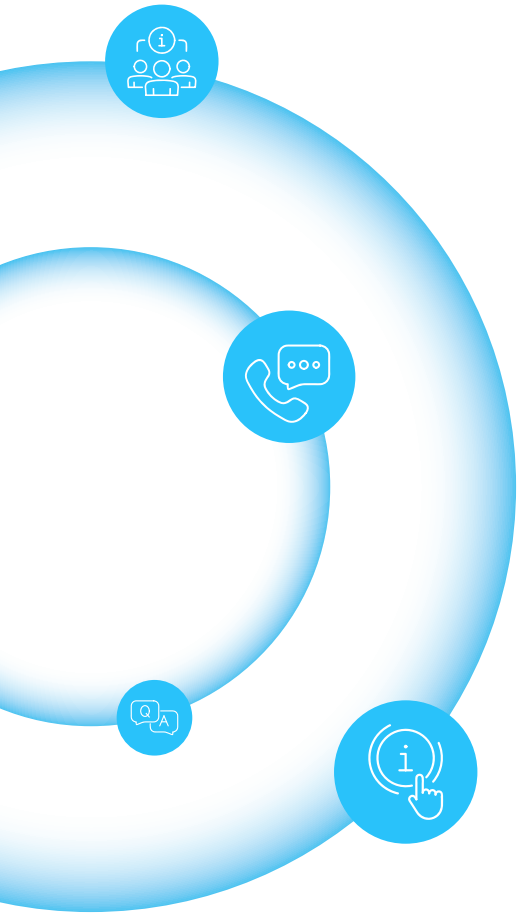
There is a growing preference for digital interactions with government services. For instance,

60%

of citizens have a strong preference for digital channels in The US[4]

HOW DOES IT LOOK LIKE IN DUBAI?

Dubai's government customer services have undergone significant transformation, focusing on efficiency, accessibility, and digital integration. Initiatives like the Dubai Model for Government Services aim to enhance service quality through customer insights and service delivery improvements [5]. Digital Dubai Authority has launched initiatives to elevate data quality and governance, aligning with international standards to support informed decision-making [6]. Despite these efforts, challenges remain, such as catering to a diverse and transient population, ensuring seamless digital experiences, and maintaining high service standards amidst rapid technological advancements [7].



HOW AI WILL SOLVE THIS CHALLENGE

AI can revolutionise government customer service by automating routine tasks, reducing wait times, and improving response accuracy. AI-driven chatbots, virtual assistants, and customer service agent robots, including digital human avatars, can provide instant support for common inquiries, freeing up human agents to handle more complex issues using natural language processing (NLP) and machine learning for accurate, quick responses. These AI-powered avatars interact with citizens, guide them through processes, and offer real-time solutions, enhancing efficiency and accessibility. Additionally, AI can analyse large volumes of data to identify patterns and predict service demands, allowing governments to allocate resources more effectively and personalise services. By enhancing the speed, precision, and accessibility of government services, AI addresses key challenges in customer service, ultimately improving user satisfaction and trust in public institutions.

THE IMPACT OF AI FOR DUBAI

The integration of AI in Dubai's government customer services or happiness centers could dramatically enhance efficiency and service delivery across the city. By reducing processing times by up to 50% and customer response times by up to 80%, AI can significantly streamline operations. AI-powered self-service capabilities would enable residents and visitors to independently engage with government services, resolving approximately 45% of cases without human intervention, thereby conserving time and resources while improving accuracy. This reduction in human error, coupled with AI's ability to optimise resource allocation, could lead to a 40% increase in satisfaction levels and a 15-30% boost in productivity. These advancements underscore AI's potential to transform Dubai's government services, making them more responsive, efficient, and aligned with the city's commitment to innovation.

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02

PERSONALIZED HEALTHCARE

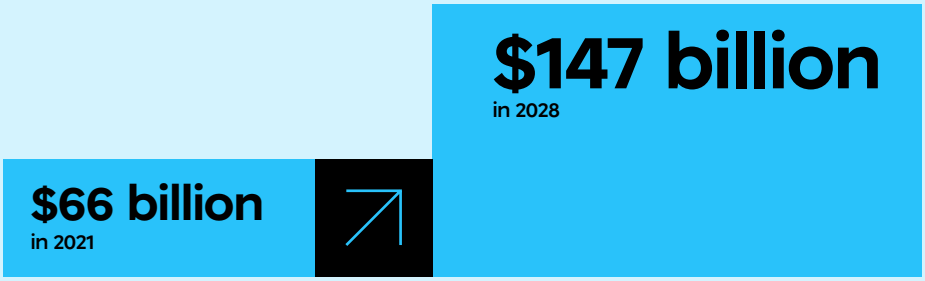
Shaping the Future of Personalised Medicine and Patient Care in Dubai

WHY PERSONALISED HEALTHCARE IS A CHALLENGE GLOBALLY

The complexities of global healthcare highlight the need for personalized care, as traditional models often fail to consider individuals' unique genetic, environmental, and lifestyle factors. This is particularly important in the treatment of chronic diseases, where the worldwide cost is estimated to reach $47 trillion by 2030 [1]. Precision medicine addresses this by using genomic data to tailor treatments, improving outcomes and reducing side effects. **Although the transition to personalised healthcare is slow due to data demands and treatment customisation challenges, the market is projected to reach $112.8 billion by 2028** [2]. This growth underscores the opportunity to transform patient care through AI and big data, despite ongoing implementation challenges.

KEY STATISTICS

The global precision medicine market, which heavily relies on genomic data, is expected to grow **from $66 billion in 2021 to $147 billion by 2028,** at a compound annual growth rate (CAGR) of 12%.[2]



The proteomics-based market, related to genomics, **was valued at $26.8 billion in 2022 and is projected to increase to $103.8 billion by 2032.**[3]

Chronic diseases globally account for **71%** of all deaths globally.

Nearly half of these deaths occurring in individuals **under 70.**[4]

WHAT DOES IT LOOK LIKE IN DUBAI?

Dubai's healthcare ecosystem is undergoing a significant transformation, driven by the integration of AI to enhance personalised care. Spearheaded by the Dubai Health Authority (DHA), as part of The Emirati Genome Programme, the initiative is being executed in Dubai by G42 Healthcare, in collaboration with DHA setting the stage for a new era of medicine, The Programme aims to build the first de novo Emirati reference genome, based on the DNA of UAE nationals. This will allow scientists, researchers and medical experts to understand the unique genetic make-up of Emiratis, which will help establish the foundation for innovation in health and wellness in the Dubai [5], providing a rich database that AI can utilise to tailor treatments to individual genetic profiles. **This initiative is a critical component of Dubai's broader vision to become a global leader in healthcare innovation, positioning the city as a pioneer in personalised medicine.**

HOW AI WILL SOLVE THIS CHALLENGE

AI's potential to revolutionise personalised healthcare in Dubai is immense. **By integrating AI with electronic health records (EHRs), the city is poised to achieve a 40% improvement in diagnosis accuracy , significantly enhancing patient outcomes.** AI-driven systems can analyse genetic and lifestyle data to create precise treatment plans, reducing the reliance on trial-and-error methods. In cancer treatment, for example, AI could cut the time needed to identify effective therapies by 50%, potentially increasing survival rates by 20%.

THE IMPACT OF USING AI FOR DUBAI

The integration of AI into Dubai's healthcare system will have a transformative impact. Patients will benefit from faster, more accurate diagnoses, and treatments specifically tailored to their needs. AI-powered monitoring systems for chronic diseases could reduce hospital readmissions by 25%, easing the strain on healthcare resources and reducing costs. With Dubai Health Authority (DHA) projects focusing on fully integrating AI into personalised healthcare, Dubai could see a 20% reduction in overall healthcare costs by 2030. These advancements will not only improve the quality of care but also position Dubai as a global benchmark for healthcare excellence.

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03

EMPOWERING INCLUSION

Shaping the Future of Government Services for People of Determination in Dubai

WHY ACCESSIBILITY IN GOVERNMENT SERVICES IS A CHALLENGE GLOBALLY

Globally, individuals requiring accessibility accommodations face significant challenges in accessing government services due to various barriers. One major issue is the inaccessibility of digital government platforms, with 42% of these individuals reporting difficulties in navigating such websites [1]. Physical barriers, inadequate educational structures, and poverty further exacerbate these challenges, impacting their quality of life. The World Health Organisation highlights that these barriers hinder the full social and economic inclusion of individuals needing accessibility [2]. Despite efforts to improve access, disparities in financial assistance and support across countries remain, emphasising the need for more inclusive policies and infrastructure to ensure equitable access to government services.

KEY STATISTICS

In a survey,

42%

of individuals with disabilities reported difficulties in navigating government websites, highlighting significant challenges in accessing digital services.[1]

Approximately

1.3 billion

people worldwide, or 1 in 6 individuals, experience significant disabilities.[2]

Dubai 2025 budget has allocated

30%

of total government expenditures to the social development sector.[3]

HOW DOES IT LOOK LIKE IN DUBAI

Dubai has made significant progress in enhancing accessibility within its government services. The Dubai Universal Accessibility Strategy and Action Plan (DUASAP) was launched to achieve full accessibility, aiming for completion by 2020 [4]. **Comprehensive accessibility certification and training programs have been implemented across key sectors.** The Dubai Electricity and Water Authority (DEWA) was recognised as the Best People-of-Determination-Friendly Government Entity in 2024 [5]. Despite these efforts, much work remains, and Dubai is exploring AI solutions to further advance its accessibility goals.

HOW AI WILL SOLVE THIS CHALLENGE

AI can significantly enhance accessibility and inclusion in government services by utilising technologies such as digital avatars, sign language translation, and speech recognition. AI-generated avatars can translate spoken language into sign language in real-time, providing instant communication support for the deaf and hard of hearing communities. Additionally, conversational assistants in sign language enable more inclusive interactions by bridging communication gaps. AI-powered speech recognition can further improve citizen engagement by offering accurate and timely assistance throughout interactions with government services. These technologies collectively contribute to a more inclusive public service environment, ensuring that individuals with diverse accessibility needs can access and benefit from government services effectively.

THE IMPACT OF USING AI FOR DUBAI

Dubai's adoption of AI technology in government services is significantly enhancing accessibility and inclusion for individuals with diverse needs. The integration of AI solutions, such as digital avatars for sign language and speech recognition tools, is transforming public services to be more accessible. For instance, Dubai's smart police stations now offer 24/7 services with minimal human intervention, using AI to interpret sign language and provide transcripts for those with speech or hearing impairments. Despite these advancements, Dubai continues to explore AI's potential to address remaining accessibility challenges, ensuring a more inclusive future for all residents.

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04

TRANSFORMING INFORMATION ACCESS

Shaping the Future of Personalised Learning and Research in Dubai

WHY ORGANISING AND INDEXING LIBRARIES IS A CHALLENGE GLOBALLY

Libraries worldwide play a crucial role in providing access to information and resources, with over 410,000 public libraries globally serving as hubs for literacy and education [1]. In 2023, 662 million e-books, audiobooks, and digital magazines were borrowed from libraries worldwide, resulting in a 19% increase from the previous year [2], highlighting the growing importance of digital services. However, librarians face significant challenges in organising and indexing content for easy access. These include adapting to rapidly evolving information and communication technologies, managing the “knowledge explosion,” and implementing effective metadata and search systems. **Financial constraints and the need for continuous skill updates further complicate efforts to maintain accessible and up-to-date knowledge libraries, requiring librarians to embrace roles as digital information specialists in the modern knowledge economy.**

KEY STATISTICS

There are over

2.8 million

libraries globally, serving as key institutions for knowledge dissemination and cultural preservation.[1]

In 2023,

662 million

e-books, audiobooks, and digital magazines were borrowed from libraries worldwide, reflecting a 19% increase from the previous year.[2]

In 2022, Dubai's public libraries received approximately

271,500 visitors

highlighting their role as community hubs for learning and engagement in the UAE.[3]

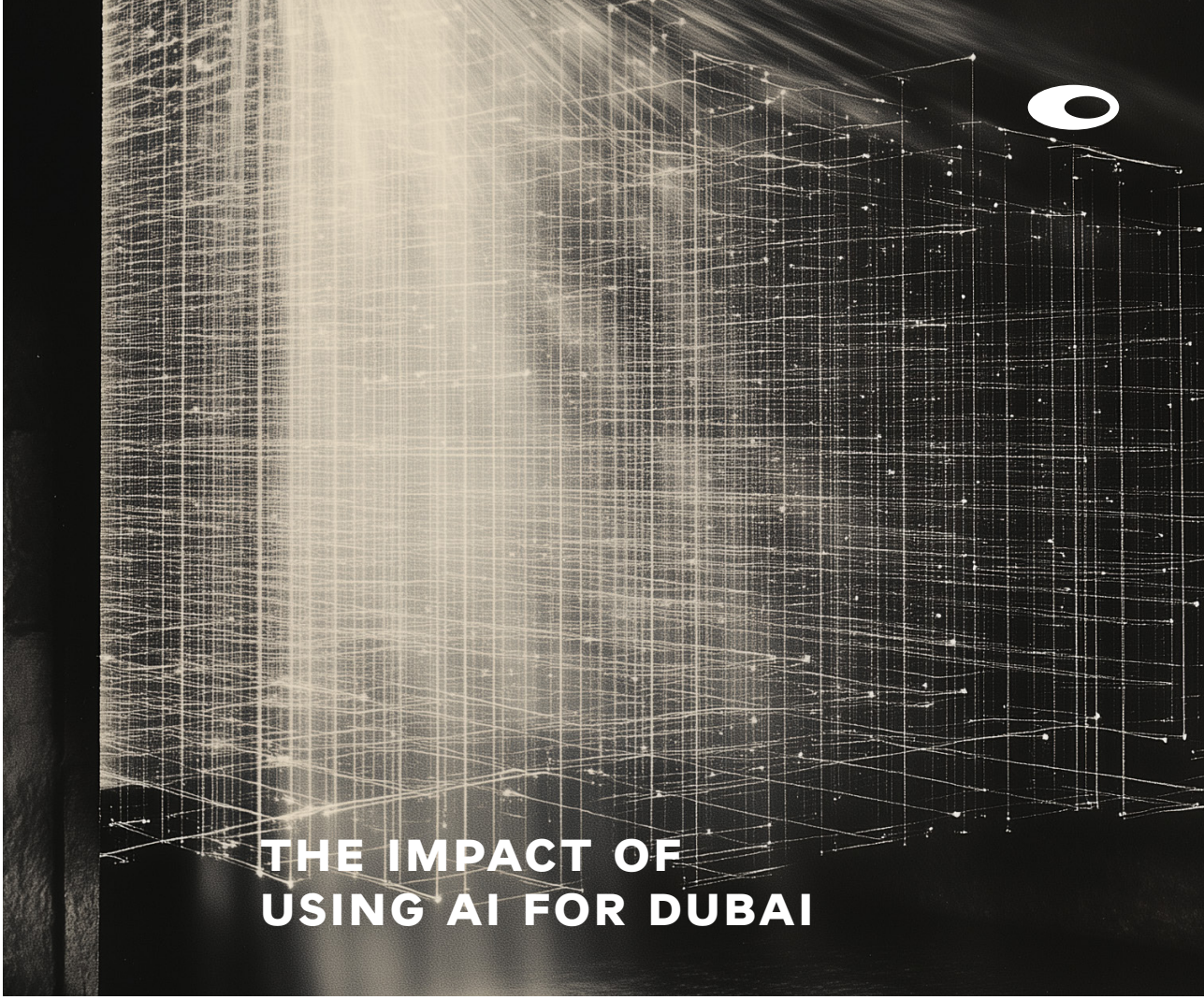
HOW DOES IT LOOK LIKE IN DUBAI?

Dubai's libraries, particularly the Mohammed Bin Rashid Library (MBRL), opened in 2022, housing over 4.5 million printed, digital, and audio books [4], are making significant strides in enhancing access to knowledge and cultural resources. The MBRL, for example, launched the "A World in Your Language" initiative, which allows readers to access books and resources in 13 different languages using AI technology, aiming to bridge cultural gaps and enhance knowledge accessibility for Dubai's diverse population [5].In 2023, there were over 432,500 Arabic language resources and nearly 109,000 foreign language resources, highlighting their extensive collection [6]. Libraries in Dubai, like others worldwide, face challenges in indexing vast collections, especially summarising books in Arabic, to enhance recommendations and improve visitor experiences.

HOW AI WILL SOLVE THIS CHALLENGE

AI can significantly enhance the organisation and summarisation of library collections by automating cataloging and metadata management, thereby improving the efficiency and accuracy of indexing content. AI algorithms can analyse and classify large volumes of digital content, assign metadata tags, and organise resources efficiently, which streamlines the retrieval process and enhances user accessibility. Additionally, AI tools can assist in text analysis and summarisation, extracting key insights and trends from textual content to facilitate research and decision-making processes. By integrating AI technologies, libraries can transform their operations, improve resource discoverability, and offer personalised user experiences, adapting to the evolving needs of patrons in the digital age.

AI can significantly **enhance the organization and summarization of library collections** by automating cataloging and metadata management



THE IMPACT OF USING AI FOR DUBAI

The integration of AI in Dubai's libraries will significantly transform their operations by automating cataloging, enhancing resource discoverability, and providing personalised user recommendations. AI algorithms streamline the organisation of library materials by analying vast amounts of data and assigning metadata, which improves search functionalities and information retrieval for users. AI-powered recommendation systems analyse user behavior and preferences to offer tailored suggestions. Additionally, The AI system will allow libraries to summarise millions of books making the visitor experience easier and exiting.

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05

SMART URBANISM

Shaping the Future of Architecture and Land Development in Dubai

Urbanisation is accelerating globally, with over 66.67% of the world's population expected to live in urban areas by 2050.[1] This rapid growth presents significant challenges in architectural design and land development, including the need to optimise land use, manage resources sustainably, and create livable, smart cities. Traditional planning methods often struggle to address these complex demands, leading to inefficient land use, increased environmental impact, and the inability to meet the evolving needs of urban populations.

KEY STATISTICS

By 2050,

66.67%

of the global population will live in urban areas, increasing the need for innovative land use and sustainable development strategies.[1]

AI technologies are helping cities reduce their carbon footprint by up to

20%

using AI to optimise the design to reduce material waste , Also AI-driven design tools can reduce energy consumption by analysing local climate data to optimise the building's orientation and materials, cutting energy use by

30%[2]

76%

of architecture and construction companies plan to invest more in AI over the next three years as AI offers benefits such as increasing productivity **(44%)**, automating repetitive tasks **(39%)**, and producing informed design options **(36%)** for these companies.[3]

HOW DOES IT LOOK LIKE IN DUBAI?

Dubai, renowned for its rapid urban development and iconic architecture, drives its architectural and land initiatives through the Dubai Municipality and Dubai Land Department (DLD). The DLD regulates real estate transactions and fosters investment, while Dubai Municipality emphasises sustainable urban planning and digital transformation . Both entities face challenges in navigating complex regulations, adapting to rapid urbanisation, and overcoming environmental constraints like harsh climate conditions . To address these, they are increasingly leveraging AI and the latest technologies to streamline processes and enhance decision-making.

HOW AI WILL SOLVE THIS CHALLENGE

Dubai is set to revolutionise its architectural and land development processes by fully integrating AI. The Dubai Municipality, in collaboration with private sector partners, is implementing AI-driven systems to optimise land use, streamline design, and align with sustainability goals. AI-powered platforms will analyse vast datasets, including geographic and environmental data, to recommend optimal land use strategies and enhance architectural design. By incorporating AI into Building Information Modeling (BIM) systems, the city aims to create more efficient, sustainable, and aesthetically pleasing structures.

THE IMPACT OF USING AI FOR DUBAI

The integration of AI into Dubai's architectural and land development strategies is significantly enhancing the city's ability to manage rapid urbanisation while maintaining its commitment to sustainability and innovation. AI-driven tools are enabling more efficient use of land, reducing the environmental impact of new developments, and ensuring that Dubai's architectural projects continue to set global benchmarks for excellence. These advancements are expected to reduce design time by 40%, improve resource efficiency by 35%, and significantly cut construction delays and budget overruns.

These AI advancements are expected to reduce design time by

40%

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35%

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06

TRANSFORMING LOST & FOUND

Shaping the Future of Item Recovery in Dubai

WHY LOST AND FOUND IS A CHALLENGE GLOBALLY

Losing personal belongings is a frustrating and common experience for many people. In the United States alone, **Americans spend an estimated $2.7 billion annually to replace lost items[1].** The lost and found industry has traditionally been plagued by inefficient manual processes, making it difficult for owners to recover their lost items.

KEY STATISTICS

More than

20%

of residents in urban areas **report losing personal items** annually.

A significant percentage of these items are never recovered, indicating a major issue within the lost and found systems[2].

Research indicates that only about

50%

of lost items are successfully **matched and returned** to their owners.

This low recovery rate is attributed to inefficiencies in current lost and found systems[2].

Surveys reveal that only

40%

of individuals believe their lost items **would be returned.**

This lack of trust in lost and found services further complicates the recovery process for lost belongings[2].

WHAT DOES IT LOOK LIKE IN DUBAI?

Dubai has implemented a comprehensive system to manage lost and found items, including a law that requires found property to be handed to the police within 48 hours, with finders eligible for a reward of up to AED 50,000.

Dubai Airports and the Dubai Police app provide streamlined platforms for reporting and recovering lost items. Due to human errors in labeling these objects (e.g., a kandora labeled as a shirt), **it can be challenging for the Dubai Police or Dubai Airport system to match found items with reported ones.**

HOW WILL AI SOLVE THIS CHALLENGE?

The introduction of AI and machine learning is **revolutionising the lost and found industry.**

AI algorithms can analyse and recognise specific features of lost items, such as color, shape, or unique markings, from images uploaded by users. This capability dramatically increases the likelihood of a correct match, with some platforms reporting accuracy improvements of over 50% compared to traditional methods.

Machine learning (ML) algorithms can also analyse patterns and trends in data to predict where and when items are most likely to be lost, allowing for preemptive measures to prevent potential losses. For example, ML can identify high-risk areas and times for losing items, such as crowded events or public transport during rush hour, and alert users to be extra vigilant during these times.

50% Accuracy Improvements

THE IMPACT OF USING AI FOR DUBAI

Implementing an AI lost and found system in Dubai could serve as a model for cities worldwide, addressing common challenges in item recovery and enhancing public trust in law enforcement. By leveraging technology, urban centers can significantly improve their lost and found processes, ensuring more items are returned to their rightful owners and fostering a sense of community responsibility.

AI solution integrated within Dubai Police, or any other entity will revolutionise the lost and found experience for citizens and tourists as well. This solution will include **an advanced search engine capable of accurately matching lost items automatically based on text descriptions or images with the reported lost item in the database.** It will ensure a seamless recovery process, even for items that are mislabeled or described inaccurately. This will triple the number of returned items and reducing phone inquiries by 30% and reduce the response time on every report.

300%

Increase

in the number of **returned items**

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07

AI TEXT RECOGNITION
FOR ANCIENT MANUSCRIPTS

Shaping the Future of Preserving History Through Advanced Technology in Dubai

WHY THE PRESERVATION AND DIGITISATION OF ANCIENT MANUSCRIPTS IS A GLOBAL CHALLENGE

Preserving and interpreting ancient manuscripts is a global challenge due to the fragility of these documents and the complexities of deciphering old scripts and languages. Traditional methods of text recognition and preservation are labor-intensive, time-consuming, and prone to human error. Many manuscripts are damaged, faded, or written in obscure languages, making accurate transcription difficult and risking the loss of valuable historical knowledge. In the Arab world, this issue is particularly urgent, given the region's vast collection of Islamic and Arabic manuscripts that hold immense historical, cultural, and scientific value. Initiatives like the Khazaaen digital archive and the Bibliotheca Alexandrina's projects are working to digitise and preserve these manuscripts, but the scale of the task remains daunting in the face of these challenges [1].

KEY STATISTICS

AI text recognition tools can improve the accuracy can achieve a

62%

accuracy rate in restoring damaged texts. However, when used in conjunction with historians, the accuracy improves from 25% to 72%, demonstrating a substantial improvement when AI and human expertise are combined.[2]

The Leiden University Libraries hold approximately

6,500

manuscripts from the Middle East and other parts of the Islamic world. Additionally, the UCLA Library has a significant collection of Islamic manuscripts, with around

8,000

volumes primarily in Arabic, Persian, and Ottoman Turkish.[3, 4]

AI-powered Optical Character Recognition (OCR) systems have **significantly improved transcription accuracy, achieving levels as high as**

94.61%

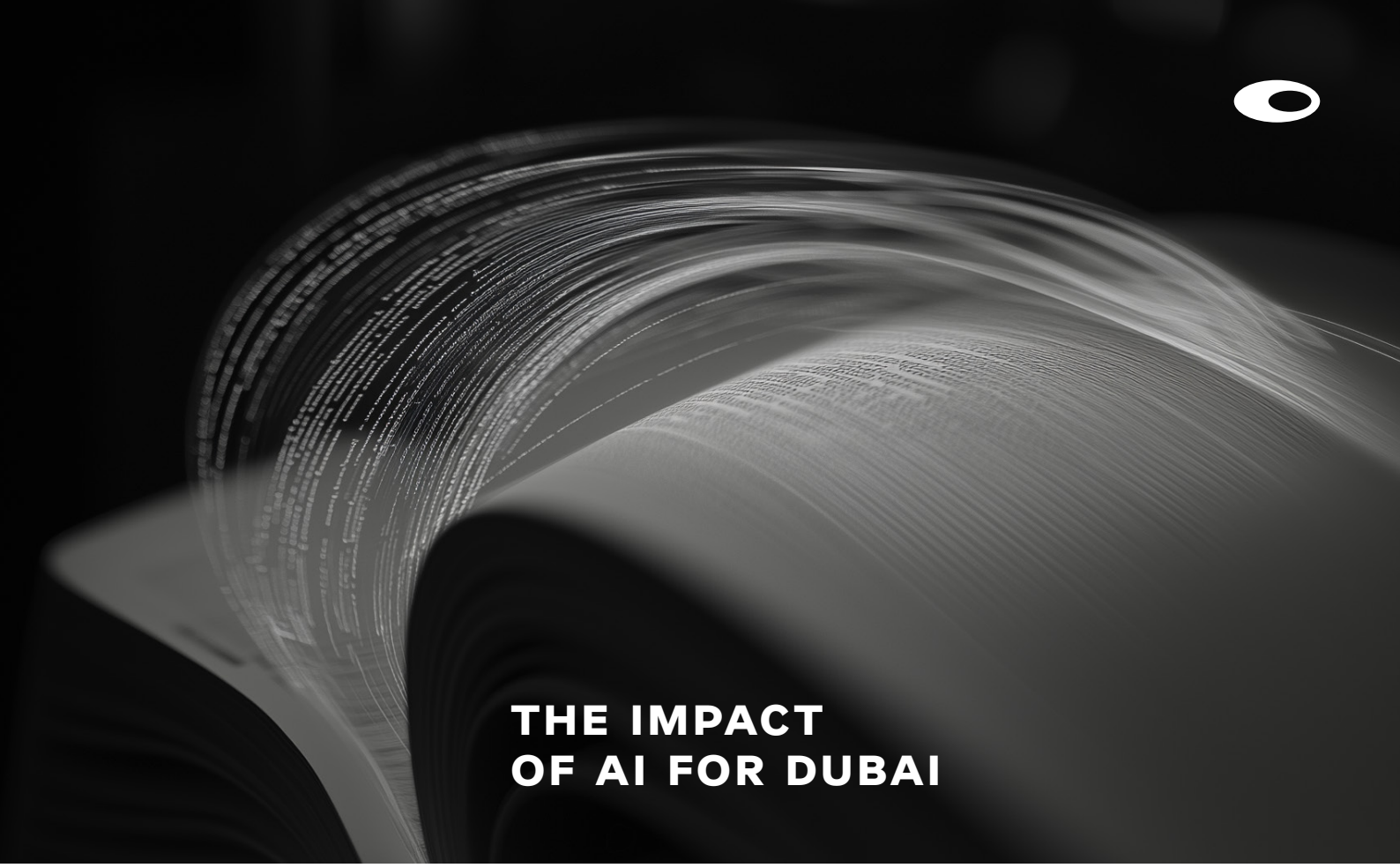
for complex scripts like the Carolingian Minuscule.[5]

HOW DOES IT LOOK LIKE IN DUBAI?

Dubai, a city that values both its rapid progress and rich cultural heritage so the preservation and digitisation of manuscripts are being addressed through initiatives like the Dubai Digital Library (DDL) and the Mohammed Bin Rashid Library. The DDL aims to digitise over 1,600 books, including manuscripts, to preserve national heritage and facilitate cultural exchange [6]. Despite these efforts, challenges remain, such as the high costs of digitisation and the technical difficulties of accurately digitising Arabic scripts. These initiatives are crucial for preserving Dubai's rich cultural heritage and making it accessible to future generations.

HOW AI WILL SOLVE THIS CHALLENGE

AI is revolutionising the preservation of ancient manuscripts by automating the recognition and transcription of old texts. AI algorithms, trained on vast datasets of ancient scripts, can accurately identify and transcribe even the most challenging manuscripts, including those written in obscure languages or damaged over time. This technology drastically reduces the time needed for transcription, allowing for the preservation of a larger number of manuscripts. For instance, the AI tool Ithaca, developed by DeepMind, has been shown to significantly enhance the accuracy of restoring ancient Greek texts. **On its own, Ithaca can achieve a 62% accuracy rate in restoring damaged texts. However, when used in conjunction with historians, the accuracy improves from 25% to 72%, demonstrating a substantial improvement when AI and human expertise are combined [2].** Additionally, AI-powered Optical Character Recognition (OCR) systems have significantly improved transcription accuracy, achieving levels as high as 94.61% for complex scripts like the Carolingian Minuscule [4]. The use of AI also facilitates the creation of searchable digital archives, making these manuscripts more accessible to researchers and the public.



THE IMPACT OF AI FOR DUBAI

Dubai employs AI for managing its extensive manuscript collections, the city could see significant benefits, including enhanced digitisation efficiency by automating up to 80% of tasks, and improved transcription accuracy reaching up to 95%, particularly for complex Arabic scripts. Using AI would also reduce digitisation costs by 50%, making large-scale projects more feasible. Furthermore, AI would ensure long-term preservation and global accessibility of manuscripts, facilitating cultural exchange and scholarly research. Additionally, AI would improve data management and retrieval, allowing easier access to specific documents or information for researchers and the public in Dubai.

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08

AI IN REAL ESTATE

Shaping the Future of Property Markets in Dubai

WHY REAL ESTATE IS A GLOBAL CHALLENGE

Government authorities face several challenges in the real estate industry, particularly in valuation, rental processes, and transactional audits. Accurate property valuation is hindered by the lack of comparable properties, economic fluctuations - as seen in the 52% drop in real estate deal value from 2022 to 2023 - unique property features, regulatory issues, and unreliable data [1]. Transactional audits are complicated by the complexity of real estate transactions, the need for seamless technology integration, data security concerns, and frequent regulatory changes. These challenges require governments to adopt strategic approaches and innovative solutions to effectively manage and regulate the real estate sector.

KEY STATISTICS

The global real estate market value in 2024 is projected to reach approximately

USD634.90 trillion

underscoring its critical role in the global economy.[2]

The AI in real estate market was valued at approximately

USD222.65 billion

in 2024 and is projected to grow to

USD303.06 billion

by the end of 2025. This growth is expected to continue, reaching

USD988.59 billion

by 2029, with a compound annual growth rate (CAGR) of

34.4%[3]

By 2025, it is estimated that

80%

of real estate investors will use proptech in some capacity.[4]

HOW DOES IT LOOK LIKE IN DUBAI?

In Dubai, the real estate market is a vital part of the city's economic fabric, contributing significantly to its GDP and attracting global interest as of the first half of 2024 the Dubai real estate market saw a 30% year-on-year growth in transaction volume, with a total of 43,075 property sales transactions valued at AED 122.9 billion [5]. The Real Estate Self Transaction (REST) platform, for instance, embodies Dubai's forward-thinking approach, enabling fully digital transactions that minimise human intervention. The government has relaxed foreign ownership laws, allowing expatriates to own freehold properties in designated areas, and has introduced the Golden Visa to encourage long-term investment. The Dubai real estate market can be highly volatile, with fluctuating property prices and demand driven by economic conditions and geopolitical factors. In addition, high competition and rapid technological advancements in the industry require constant adaptation to remain effective and compliant. These challenges necessitate strategic foresight and innovative solutions to effectively manage and regulate Dubai's dynamic real estate market.

HOW AI WILL SOLVE THIS CHALLENGE

AI offers transformative potential for Dubai's real estate market by enabling more accurate property valuations, improving market predictability, and streamlining the transactional process. AI-driven property valuation tools use machine learning and automated valuation models (AVMs) to analyse large datasets, including property attributes, market trends, and historical sales data, to provide more accurate and efficient property valuations. In addition, AI predictive analytics can anticipate market shifts, providing early warnings about potential downturns or opportunities, thereby allowing investors and developers to act proactively rather than reactively. AI also employs machine learning algorithms to examine large datasets, identifying anomalies and trends that may indicate issues such as fraud or non-compliance. This efficiency allows property managers to focus on enhancing the tenant experience and improving property value, rather than being bogged down by administrative tasks.

THE IMPACT OF USING AI FOR DUBAI

The adoption of AI in Dubai's real estate sector will redefine how properties are managed, invested in, and transacted. By harnessing AI's capacity to analyse vast datasets—including historical property prices, economic indicators, and emerging market trends—Dubai can enhance the accuracy of property valuations by up to 85% using AI. AI's predictive models can also identify under-the-radar areas poised for growth, directing investment to high-potential neighborhoods before they become widely recognised. This foresight can lead to a 20% increase in investment returns as stakeholders capitalise on emerging trends. When it comes to property management, tasks such as maintenance scheduling, tenant communication, and even energy management can be optimised through AI, leading to a 25% reduction in operational costs.

Dubai can enhance the accuracy of property valuations by up to

85% using AI

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09

AI IN CUSTOMS SECURITY AND LOGISTICS

Shaping the Future of Trade Through Intelligent Monitoring in Dubai

WHY CUSTOMS SECURITY AND LOGISTICS ARE A GLOBAL CHALLENGE

The customs security and logistics sectors are vital to global trade but face significant challenges in maintaining the security and efficiency of supply chains. As the volume of goods transported across borders increases, traditional inspection and monitoring methods are becoming less effective. This is underscored by a 26% rise in supply chain security breaches from 2022 to 2023, which highlights the growing threat of cyberattacks and the urgent need for enhanced cybersecurity measures [1]. The complexity of modern logistics, coupled with the rising risks of smuggling, terrorism, and other illegal activities, demands more advanced solutions to safeguard the integrity of international trade. To address these challenges, it is essential to adopt digital solutions and advanced technologies to enhance customs processes, ensure compliance, and secure the supply chain against diverse threats.

KEY STATISTICS

The global logistics market is projected to reach

USD 12.8 trillion

by 2025, highlighting the sector's vital role in the global economy.[2]

In 2023, Dubai Trade registered a record

32.6 million

transactions, marking a

25%

increase from the previous year, with nearly half related to clearance and border controls. [3]

Successfully implementing AI-enabled supply-chain management has enabled early adopters to improve

logistics costs by	15%
inventory levels by	35%
and service levels by	65%

compared with slower-moving competitors.[4]

THE DUBAI CONTEXT

Dubai, as one of the world's leading trade hubs, is heavily reliant on efficient, secure logistics and customs operations. The strategic location of Dubai, bridging East and West, makes it a crucial point for international trade, which also presents challenges in maintaining efficient customs operations while ensuring security. Dubai Customs has launched the Siyaj (Fence) initiative, which is the first integrated 24/7 control system globally. This system employs advanced technologies, drones, and rapid intervention teams to enhance border security and facilitate trade. **One of the primary challenges is managing the sheer volume of goods, as evidenced by Dubai Customs processing over 30.4 million transactions in 2023 alone[5].** This high volume necessitates advanced technological solutions to maintain operational excellence and ensure compliance with international standards.

AI'S ROLE IN ADDRESSING THESE CHALLENGES

To maintain its competitive edge and ensure the integrity of its trade routes, Dubai is increasingly adopting AI-driven solutions to enhance logistics and customs security. The Dubai authorities are piloting AI systems that monitor and analyse vast amounts of data from shipping manifests, cargo movements, and trade transactions. AI algorithms are capable of automatically identifying potential threats such as weapons, explosives, and other prohibited items by classifying objects within X-ray images into predefined categories. These systems are designed to detect anomalies and potential security threats in real time, such as unusual shipping routes or discrepancies in customs declarations.

AI is also being utilised to streamline customs procedures and reduce the time required for inspections. By leveraging AI algorithms that can cross-reference data from multiple sources, customs officials can quickly identify high-risk shipments for further inspection, while allowing low-risk shipments to pass through more efficiently.

THE IMPACT OF USING AI FOR DUBAI

The integration of AI into Dubai's logistics and customs operations is significantly enhancing the city's ability to manage and secure its trade routes. The use of AI-driven monitoring and predictive analytics tools is being used to improve detection of security threats and more efficient customs processes. As a result, Dubai will be able to maintain its position as a leading global trade hub, offering a secure and efficient environment for international commerce. Additionally, AI can help to reduce logistics costs by up to 15% and increase the efficiency of Dubai's trade operations. These advancements enhance Dubai's status as a global trade hub and help ensure that its logistics and customs processes remain secure and resilient in the face of evolving challenges.

AI can help to reduce logistics costs by 15% and increase the efficiency of Dubai's trade operations.

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10

AI-POWERED WORKFORCE MANAGEMENT

Shaping the Future of Government Hiring and Productivity in Dubai

WHY WORKFORCE MANAGEMENT IS A GLOBAL CHALLENGE

Globally, demographic shifts are impacting the public sector, with Gen Z expected to make up about 30% of the workforce by 2030, necessitating adjustments in workforce composition and service delivery. Employee retention remains a challenge, with career development, leadership, and compensation being the top reasons for public sector employees leaving their jobs [1]. In addition, upskilling and training are crucial yet challenging due to limited budgets and resources, which restrict the ability to offer comprehensive training programs. Addressing these challenges requires focused efforts to improve career development, enhance workplace conditions, and invest in continuous learning, ensuring the workforce remains capable and motivated despite these ongoing obstacles.

KEY STATISTICS

The market for workforce management solutions is expected to reach

USD 9.3 billion

by 2026, driven by the increasing demand for automation and AI-powered tools economy.[2]

65%

of the **skills required to perform jobs** will change by 2030. [3]

A study by McKinsey & Company found that **AI-powered hiring tools** improve hiring efficiency by up to

20%

AI's ability to learn and adapt over time is a massive benefit in talent acquisition.[4]

THE DUBAI CONTEXT

Dubai is a city that relentlessly pursues innovation and excellence in public sector efficiency, beginning with its dedicated public sector employees. The Dubai Government Human Resources Department (DGHR) embodies this commitment through the launch of the Future of Work initiative. This forward-thinking program is designed to equip Dubai's government employees and talent with cutting-edge methodologies aligned with global best practices, which also helps to prioritise strategic hiring and upskilling activities. However, there are significant challenges in these areas due to various factors, including the evolving expectations and working styles of newer generations, such as Gen Z, who require a much more tailored approach to development and engagement.

HOW AI WILL SOLVE THIS CHALLENGE

AI is revolutionising workforce management in the public sector by leveraging advanced technologies to address recruitment, retention, and upskilling challenges. **Machine learning algorithms** streamline recruitment processes through talent intelligence systems that analyse large datasets, automating resume screening and candidate matching. **AI-driven talent management systems** use natural language processing and data mining to create personalised career development paths, improving employee retention by identifying internal job opportunities and aligning them with individual aspirations.

In the realm of upskilling, **AI-powered personalised learning pathways** utilise deep learning to assess skill gaps and recommend targeted training programs, ensuring employees stay aligned with organisational goals and technological advancements. Additionally, AI enhances organisational agility by integrating into HR processes such as workforce planning and performance management, using decision trees and reinforcement learning to optimise efficiency and inform structural redesigns. Collectively, these AI applications foster a more engaged, adaptable, and future-ready public sector workforce.

THE IMPACT OF USING AI FOR DUBAI

The integration of AI into Dubai's workforce management strategies is setting new benchmarks for public sector efficiency. By harnessing AI, Dubai can streamline its recruitment processes, improve the quality of its hires, and create a more agile and responsive workforce. These advancements are crucial for maintaining high standards in public service delivery and ensuring that Dubai's government remains a leader in innovation and efficiency.

Strategically, AI in workforce management aligns with Dubai's vision of becoming a global leader in smart governance. By adopting AI-driven workforce management systems, Dubai is not only optimising its talent pool but also preparing its government entities to meet the challenges of the future. This approach ensures that Dubai's government workforce is equipped to navigate the complexities of a rapidly changing world, ultimately contributing to the city's long-term success and global standing.

By harnessing AI, Dubai can ① streamline its recruitment processes, ② improve the quality of its hires, and ③ create a more agile and responsive workforce

CITATIONS

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11

AI-POWERED INVESTMENT TOOLS

Shaping the Future of Investment Strategies and Financial Sector in Dubai

WHY INVESTMENT MANAGEMENT IS A GLOBAL CHALLENGE

The global investment landscape is characterised by a wide array of financial instruments, including stocks, bonds, funds, and alternative investments, each offering distinct risk-reward profiles. Economic challenges such as geopolitical tensions, inflation, and regulatory changes significantly impact investment strategies. In recent years, Foreign Direct Investment (FDI) flows have come under pressure, experiencing a decline of over 10% globally and 7% in developing countries [1]. Tight financing conditions in 2023 led to a 26% downturn in international project finance, which is crucial for infrastructure investment in areas such as power and renewable energy [1]. This trend underscores the critical need for adopting the latest technologies and advanced tools capable of processing large datasets, predicting market trends, and optimising investment strategies. These innovations are essential for both countries and individuals to sustain and enhance investment flows in an increasingly complex global environment.

KEY STATISTICS

The value of foreign direct investment (FDI) inflows to the UAE in 2023 amounted to

USD30.688 billion

compared to

USD22.737 billion

in 2022, to rank **2nd globally** in FDI inflows.[2]

There is a noticeable shift in Foreign Direct Investment (FDI) from traditional manufacturing to services and digital sectors.

From 2004 to 2023, the share of cross-border greenfield projects in the services sector **increased from**

66% to 81%

largely driven by technological advancements. This trend is particularly evident in developed regions where digital infrastructure is more established.[3]

Most believe AI will be revolutionary for financial services.

The vast majority

72%

of investors believe that AI is a game changer for investors and traders.

and nearly three out of four

74%

believe the technology will help Financial Advisors (FA) better serve their clients.

In fact, over three out of five

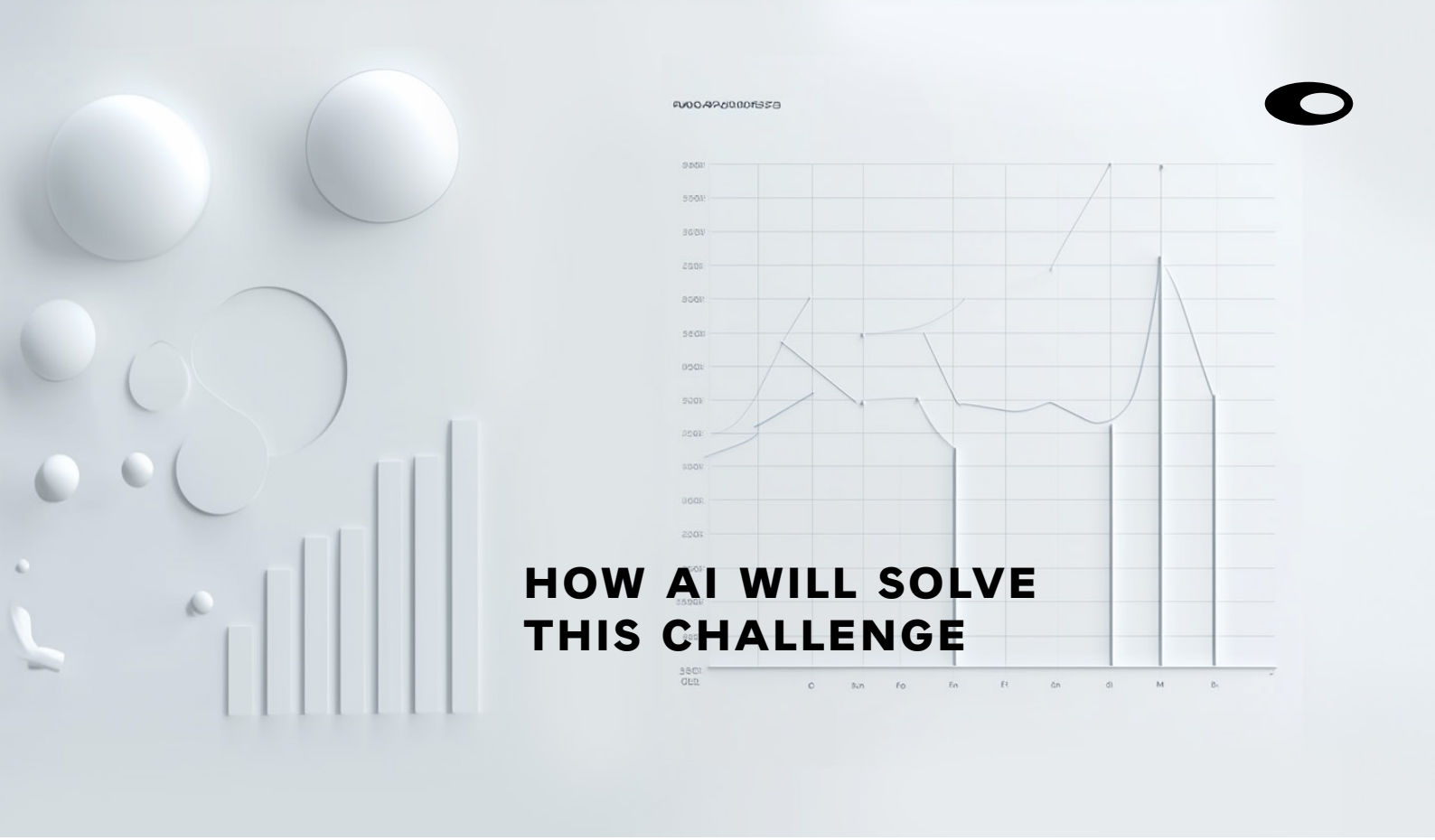
63%

would be interested in working with a Financial Advisor that leverages it.[4]

WHAT DOES IT LOOK LIKE IN DUBAI?

Dubai's investment landscape, as part of the UAE, is vibrant and rapidly evolving, fueled by significant Foreign Direct Investment (FDI) inflows and strategic initiatives aimed at attracting global investors. In 2023, the UAE achieved remarkable FDI inflows of USD 30.688 billion, a substantial increase from USD 22.737 billion in 2022, ranking it second globally in FDI inflows [2]. Dubai's appeal as a premier business hub is further enhanced by numerous investor incentives, including full ownership rights for companies established by foreign nationals. Initiatives such as NextGenFDI, a collaboration between government and private entities, have streamlined licensing and incorporation processes, particularly benefiting technology companies.

Dubai is actively promoting investment in high-growth sectors such as fintech, e-commerce, agritech, healthcare, education, tourism, and renewable energy. This strategic focus, combined with a favorable regulatory framework and world-class infrastructure, positions Dubai as a leading destination for international investment. However, there remains significant room for innovation, particularly in harnessing technological advancements and strategic initiatives to further solidify Dubai's role as a global leader in the investment landscape.



HOW AI WILL SOLVE THIS CHALLENGE

Artificial intelligence (AI) is poised to revolutionise the investment landscape and Foreign Direct Investment (FDI) by offering advanced data analysis, predictive analytics, and risk management capabilities. AI's ability to rapidly process large volumes of data allows it to identify patterns and trends that traditional methods may overlook, leading to more informed decision-making. Through predictive analytics, AI can forecast market trends and evaluate investment opportunities, enabling investors to anticipate changes and make proactive decisions. In risk management, AI is invaluable for identifying potential risks and stress-testing portfolios, helping investors optimise their strategies.

Moreover, AI-driven automated trading algorithms enhance efficiency by executing trades with speed and precision, significantly reducing costs. AI also improves client communication by simplifying complex strategies into understandable language, fostering trust and satisfaction. In the realm of FDI, AI leverages data-driven insights to craft strategies that attract investors, creating more favorable investment climates. The integration of AI with technologies like blockchain is further transforming the fintech landscape by enabling secure transactions and personalised services.

THE IMPACT OF AI-POWERED INVESTMENT TOOLS IN DUBAI

Integrating AI into Dubai's investment landscape, FDI, and key industries like tourism, manufacturing, and real estate is set to be transformative. By 2030, AI is projected to contribute up to $320 billion to the Middle East economy, with the UAE capturing nearly 14% of this value[5]. In investment and FDI, AI enhances decision-making by analysing large datasets, predicting market trends, and optimising risk management, making Dubai a more attractive destination for global investors.

In tourism, AI-driven analytics personalise visitor experiences and predict trends, potentially boosting revenue by 30% in the next decade. The manufacturing sector benefits from AI through automation and predictive maintenance, reducing downtime by up to 20% while increasing productivity. In real estate, AI can forecast market demand, optimise pricing, and improve property management, potentially increasing profitability by 25% in the coming years.

By 2030, AI is projected to contribute up to **$320 billion to the Middle East economy,** with the **UAE capturing nearly 14%** of this value[5].

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12

AI FOR SPEND MANAGEMENT

Shaping the Future of Government Operations and Financial Discipline in Dubai

GLOBAL CHALLENGES IN SPEND CONTROL

Effective financial management is a critical challenge for governments worldwide, as they strive to ensure fiscal discipline, reduce waste, and optimise resource allocation. For instance, governments today spend an estimated $13 trillion each year on public contracts for goods, services and public works. As much as a quarter of that is wasted in inefficient or shortsighted procurement practices. Halting the waste could free up at least $1 trillion a year to put economies on a path towards green, resilient, and inclusive development [1]. Moreover, the complexity of government budgets, with multiple departments and layers of expenditure, makes it difficult to maintain oversight and accountability. This challenge is further exacerbated by the need to respond quickly to economic changes while ensuring public funds are used efficiently and transparently.

KEY STATISTICS

The World Bank estimates that up to 25% of the

USD 13 trillion

spent annually on **public procurement is wasted** due to inefficient or shortsighted practices.

This amounts to approximately

USD 1 trillion

in potential savings each year if procurement processes were optimised.[1]

As of 2023, **global public debt reached a record high** of

USD 97 trillion.

This figure includes both domestic and external debt across central, state, and local governments worldwide.[2]

According to research from IBM, **50% of companies using AI** for forecasting reduced overall error by at least

20%

Moreover, **25% of companies** saw a decrease of at least

50% [3]

WHAT DOES IT LOOK LIKE IN DUBAI?

Dubai, as a leading global city, recognises the importance of maintaining stringent financial controls to support its ambitious development goals. Dubai's Department of Finance launched the SFP program to develop the Public Financial Management system by transitioning to a Performance-Based Budgeting System (PBBS). This initiative aims to enhance fiscal planning and budgeting processes, ensuring fiscal sustainability and efficient resource management [4]. The UAE has implemented automated systems to enhance the budgeting process, ensuring transparency and efficiency. These systems help identify main and complementary services for each government entity and compare similar activities across various authorities [5]. To maintain its global leadership, Dubai must continue to adopt advanced technologies like AI while addressing challenges such as integration and data privacy. Intensified efforts in technology adoption and personnel upskilling are crucial for optimising financial management and sustaining long-term growth.

HOW AI WILL SOLVE THIS CHALLENGE

AI can significantly enhance financial tracking, spending, and procurement processes by providing real-time analytics, predictive insights, and automated decision-making. Through machine learning algorithms, AI can detect anomalies in financial transactions, optimise budget allocations, and streamline procurement by predicting demand and identifying cost-saving opportunities. AI-driven systems can also automate routine tasks, reducing human error and increasing efficiency across all financial operations. Integrating AI ensures accurate tracking, transparent spending, and efficient resource management, ultimately improving fiscal sustainability and accountability for the Dubai government.

THE IMPACT OF USING AI FOR DUBAI

AI will play a crucial role in enhancing Dubai's financial management and spending control. By integrating AI-driven systems, the Dubai Government will be able to monitor, analyse, and optimise expenditures in real-time. These AI systems automatically detect anomalies in spending patterns, such as deviations from budgeted amounts or unusual transactions, enabling prompt investigation and corrective action, which could lead to a 30% reduction in financial errors. Additionally, AI will streamline the budgeting process by analyzing historical data and economic indicators to generate accurate forecasts and identify potential risks. This proactive approach could result in a 25% decrease in budget variances, improving overall financial discipline and ensuring that public funds are allocated more effectively. By automating routine financial tasks, AI also frees up government officials to focus on strategic decision-making, further enhancing the efficiency and effectiveness of Dubai's financial management and support the objectives of the Dubai Strategic Plan 2030 development project as well as the Dubai Economic Agenda "D33."

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13

AI IN ADVERTISING

Shaping the Future of Media and Advertising in Dubai

WHY ADVERTISING AND MEDIA IS A GLOBAL CHALLENGE

The global media and advertising landscape is undergoing significant growth and transformation, with digital advertising spending projected to reach $870.85 billion in 2027, making up 62% of total media ad spend [1]. This surge is fueled by advancements in technology, particularly in programmatic advertising, which allows for more precise targeting and personalisation. However, the industry faces challenges such as adapting to rapid technological changes, balancing privacy concerns in the digital age, and creating content that resonates with audiences who have shorter attention spans, especially among Gen Z. This generation, known for its preference for authenticity and quick, engaging content, is pushing marketers to rethink their strategies.

KEY STATISTICS

The global digital advertising market is expected to reach

USD870.85 billion

in 2027, with a compound **annual growth rate** (CAGR) of

15.4%

from 2025 to 2030.[1, 2]

Using AI-generated content and personalised marketing, Michaels increased response rates, as they went from personalising **20% of their email campaigns to personalising**

95%

and a

25%

Clickthrough rate (CTR) lift on email campaigns.

They also saw a

41%

CTR lift on SMS campaigns using the same strategy. [3]

87%

of CMOs agree **AI represents the future of advertising and marketing,**

83%

of CMOs say **AI will allow human teams to be more creative** and

86%

agree it will **improve efficiency.** [4]

WHAT DOES IT LOOK LIKE IN DUBAI?

Dubai has solidified its position as a major regional and international hub for media and advertising, with the Dubai Media Council (DMC) driving the industry's evolution through initiatives such as the Emirati Media Talent Pledge and the 'One Media Dubai' platform [5, 6].

Dubai Media City, offering state-of-the-art infrastructure and a supportive business environment, has attracted global giants such as CNN and BBC, and serves as a key part of a comprehensive media ecosystem that includes Dubai Production City and Dubai Studio City. This ecosystem is home to 3,000 companies and 30,000 professionals, broadcasting in multiple languages to millions worldwide [7].

However, to maintain its leadership in the region, the industry must swiftly adapt to rapidly evolving technologies and meet the ever-changing demands of new generations. Embracing innovation is essential for Dubai to continue setting the standard in the media landscape and to sustain its position as a premier global media hub.

HOW AI WILL SOLVE THIS CHALLENGE

AI can transform government media and advertising by automating and optimising processes traditionally dependent on human resources and high production costs. Using AI-driven tools such as generative models, governments can create realistic images, videos, and even virtual spokespersons without the need for costly photoshoots, modeling sessions, or video production crews. These AI models can generate visuals and content that reflect various demographics and environments, enabling highly personalised and region-specific advertisements at a fraction of the cost.

Additionally, AI-powered data analytics can streamline audience segmentation, allowing governments to target specific groups with precision, optimising resource allocation for maximum impact. Through machine learning algorithms, advertising campaigns can be continuously monitored and adjusted in real-time, leading to better performance while reducing wasteful expenditure on underperforming ads. Furthermore, AI can predict trends and public responses, allowing governments to proactively adjust messaging and content strategies. This not only improves engagement but also significantly reduces the trial-and-error costs associated with traditional media campaigns, making government communications more efficient, effective, and cost-conscious.

WHAT DOES IT LOOK LIKE IN DUBAI?

Dubai government is adopting AI in media and advertising, significantly reducing costs while enhancing efficiency and effectiveness. AI could automate content creation, such as generating text, visuals, and videos, cutting the need for expensive production processes, reducing 50-70% in content creation costs. With AI-driven audience segmentation and real-time ad optimisation, Dubai government entities could target specific groups more accurately, ensuring that public messages are delivered to the right people at the right time. Additionally, predictive analytics would enable more informed decision-making, leading to higher engagement and better return on investment for public campaigns, ultimately allowing the government to allocate resources more effectively and respond rapidly to evolving public needs.

AI could automate content creation, such as generating text, visuals, and videos, cutting the need for expensive production processes, reducing **50-70% in content creation costs.**

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14

AI FOR DIGITAL HISTORICAL RECONSTRUCTIONS

Shaping the Future of Heritage Preservation in Dubai

WHY HISTORICAL RECONSTRUCTION IS A GLOBAL CHALLENGE

Preserving and restoring historical sites and artifacts is essential for safeguarding our global cultural heritage. As of July 2024, there are 1,223 World Heritage Sites spanning 168 countries [1]. Many of these cultural treasures face significant threats from natural decay, conflict, and rapid urbanisation, heightening the urgency to protect them. However, the process of restoration is both costly and time-consuming, with funding primarily sourced from state governments and private donations. Traditional reconstruction methods are often hampered by high expenses, lengthy timelines, and incomplete records, making accurate restoration a formidable challenge. The growing risk of losing these invaluable landmarks underscores the importance of leveraging innovative solutions to preserve our shared heritage for future generations.

KEY STATISTICS

For the biennium 2024-2025, the World Heritage Fund is set at

USD5.8 billion

with an additional **USD0.4 million earmarked for emergency assistance.**[2]

The global heritage tourism market size was valued at

USD556.96 billion

in 2021 and is expected to expand at a compound annual growth rate (CAGR) of **3.8% from 2022 to 2030.**[3]

AI can improve the **accuracy of historical reconstructions** by up to

62% and **71%**

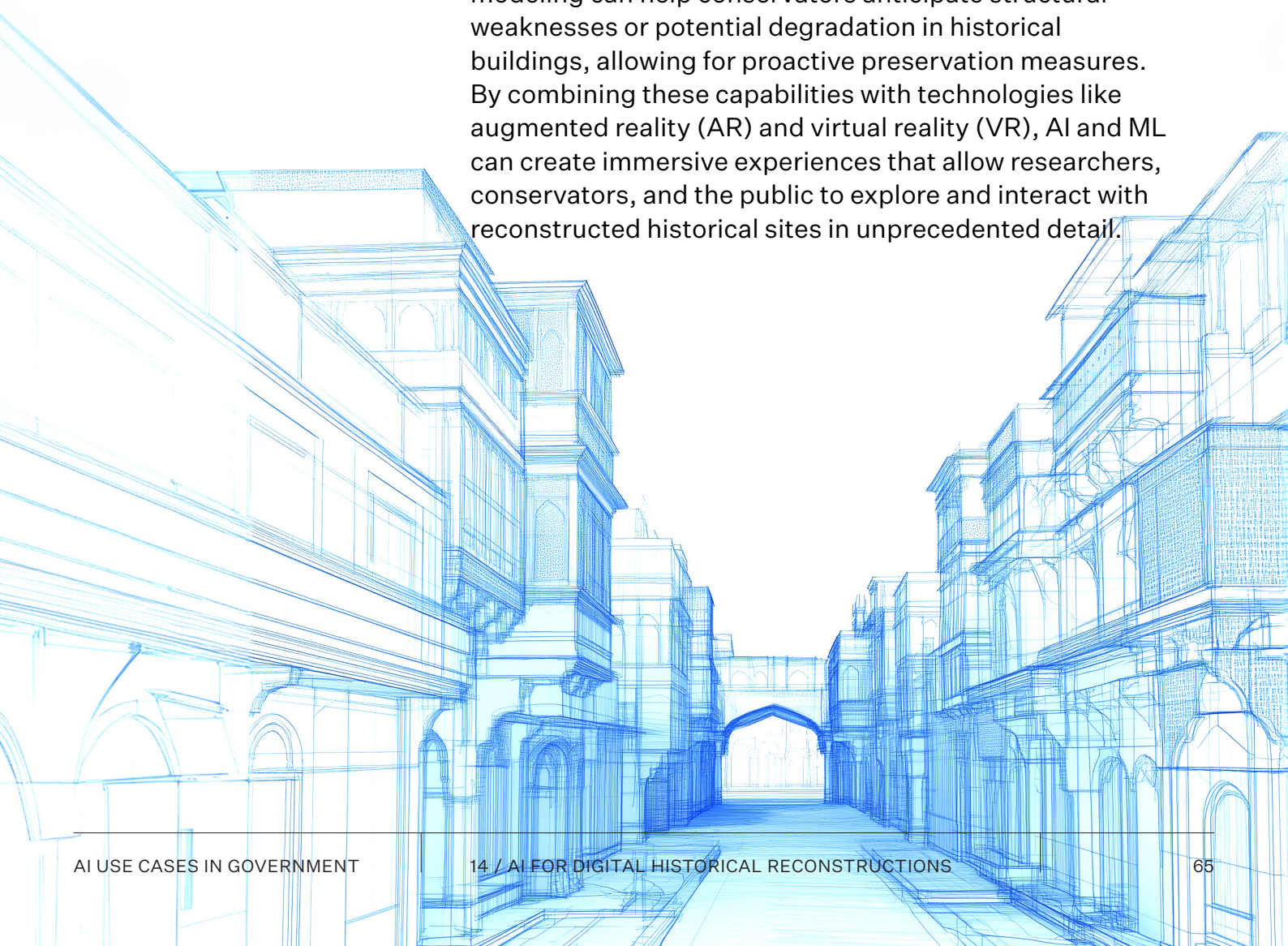
accuracy i**n identifying their original location,** and can **date texts to within 30 years of their ground-truth date ranges** enhancing the preservation and educational outcomes of cultural heritage projects.[4]

WHAT DOES IT LOOK LIKE IN DUBAI?

In Dubai, the preservation and reconstruction of heritage sites play a vital role in the city's cultural preservation efforts. Since 1991, the Dubai Municipality's Architectural Heritage Department has been leading initiatives to conserve historical buildings, adhering to international standards. The city is home to over 17 significant archaeological sites, including Saruq al-Hadid and Al Sufouh, which reflect Dubai's rich history spanning over 300,000 years. Managed by the Dubai Culture and Arts Authority, these sites are carefully preserved to enhance public access and appreciation. The emirate's commitment to heritage preservation is further exemplified by the approval of a project to restore an additional 35 heritage sites and buildings, as part of a larger initiative to protect Dubai's cultural and architectural heritage [5].

HOW AI WILL SOLVE THIS CHALLENGE

Artificial intelligence (AI) and machine learning (ML) technologies offer significant potential for enhancing historical construction projects through advanced analysis and reconstruction techniques. These technologies can analyse vast amounts of historical data, including architectural plans, archaeological findings, and historical documents, to create accurate 3D models of ancient structures. Machine learning algorithms can be trained on existing historical buildings to recognise architectural styles, construction techniques, and materials used in different periods, enabling more precise reconstructions of partially destroyed or lost structures. AI-powered image recognition and processing can enhance the quality of old photographs or drawings, providing clearer visual references for restoration work. Additionally, predictive modeling can help conservators anticipate structural weaknesses or potential degradation in historical buildings, allowing for proactive preservation measures. By combining these capabilities with technologies like augmented reality (AR) and virtual reality (VR), AI and ML can create immersive experiences that allow researchers, conservators, and the public to explore and interact with reconstructed historical sites in unprecedented detail.



THE IMPACT OF USING AI FOR DUBAI

Dubai is pioneering the use of AI to preserve and showcase its cultural heritage, seamlessly integrating cutting-edge technology with tradition. By leveraging AI and Generative AI, the city is developing detailed 3D models and immersive virtual reconstructions of historical sites, offering interactive experiences through virtual reality (VR) and augmented reality (AR). These advancements not only elevate cultural tourism but also make Dubai's rich history more accessible to a global audience. With AI at the forefront, Dubai is not only shaping the future of heritage preservation but also reinforcing its position as a global leader in innovation and cultural preservation.

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15

AI CHATBOTS FOR GOVERNMENT TRANSACTIONS

Shaping the Future of Government Transactions in Dubai

WHY GOVERNMENT TRANSACTIONS ARE A GLOBAL CHALLENGE

Governments worldwide face significant challenges in providing efficient and accessible public services due to budget constraints, technological advancements, and growing demands. With public sectors accounting for 16% of total employment and 38% of formal employment globally, optimising service delivery is crucial [1]. Digital transformation is a key focus, but gaps in accessibility persist, with an average of 35.7 accessibility errors on government websites, highlighting the need for improvement [2]. Additionally, population growth and diverse service demands increase complexity and costs. Younger generations, who are more tech-savvy and expect seamless digital interactions, are driving new demands for instant, personalised services, requiring governments to adopt more agile and user-centered approaches. To address these issues, governments are prioritising infrastructure and sustainability, while strategic planning and investment remain essential for adapting to rapid technological changes and ensuring equitable access to public services.

KEY STATISTICS

The Global AI chatbot Market size is expected to be worth around

USD66.6 Billion

by 2033, from **USD 6.4 Billion in 2023, growing at a CAGR of 26.4%** during the forecast period from 2024 to 2033.[3]

The citizen satisfaction score (CSS) for private-sector services is

2.5X

times higher than CSS for government services.[4]

Zendesk, a leading customer service platform, states that **"Bots can take over answering up to**

80%

of those sorts of routine inquiries." This again supports the high percentage of routine queries that can be handled by chatbots.[5]

WHAT DOES IT LOOK LIKE IN DUBAI?

Dubai has been at the forefront of leveraging the latest technologies and chatbot technology to enhance government services accessibility and availability. Government entities launched several initiatives to streamline citizen interactions through unified chatbots. Digital Dubai, which launched its unified data platform **'Dubai Pulse,' hosts about 1,237 open and shared data systems from 70 entities to support and accelerate chatbot development and other AI applications and solutions** [6]. However, challenges still exist, as traditional rule-based chatbots often proved ineffective, requiring significant effort, learning, and cost for deployment across all entities. Additionally, the shift towards social media chatbots, ChatGPT, and large language models (LLMs) has necessitated Dubai to take proactive steps, in order to maintain its position as a global leader in smart government solutions.

HOW AI WILL SOLVE THIS CHALLENGE

AI has significantly disrupted the chatbot industry by transforming how automated interactions are designed and delivered. Traditional rule-based chatbots often relied on predefined scripts, limiting their ability to handle complex queries or adapt to the nuances of human conversation. With the rise of AI, particularly machine learning and natural language processing (NLP), chatbots can now understand context, learn from interactions, and provide more personalised responses. Large Language Models (LLMs) like GPT have taken this further by enabling chatbots to generate human-like conversations, greatly enhancing their flexibility and accuracy. In the realm of government services, LLMs have expanded accessibility by allowing citizens to engage in more dynamic and intuitive interactions, reducing the friction often encountered in bureaucratic processes. These advancements help streamline service delivery, improve user satisfaction, and reduce the cost of maintaining multiple communication channels, positioning AI-powered chatbots as essential tools in modern governance.

AI-powered chatbots are not only capable of handling basic inquiries; they can assist with more sophisticated applications like renewing licenses, offering personalised guidance through government portals, and explaining laws and regulations in a simplified manner. Additionally, they can provide vital public safety and health information, deliver instructions for compliance with rules, and make essential services more accessible to the general public.

THE IMPACT OF USING AI FOR DUBAI

These AI chatbots are capable of automating routine tasks and enhancing citizen interactions handling over **60%** of routine inquiries, resulting in a **35%** reduction in operational costs for government departments and a **25%** improvement in service delivery times.

The Dubai.AI platform, launched in collaboration with the Dubai Center for Artificial Intelligence (DCAI), serves as a personal digital assistant, offering real-time responses to queries across various sectors [7]. Complementing this is the "U-Ask" platform, a unified AI-powered solution that provides generative AI-driven information in both Arabic and English, allowing users to access service requirements and application links in one place [8]. These platforms, alongside data initiatives like Dubai Pulse, which hosts 1,237 shared data systems, have significantly improved the accessibility and efficiency of government services. These AI chatbots are capable of automating routine tasks and enhancing citizen interactions handling over 60% of routine inquiries, resulting in a 35% reduction in operational costs for government departments and a 25% improvement in service delivery times. The success of AI chatbots in Dubai will help the city to serve as a model for other cities and countries looking to enhance their public services through innovation and technology.

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Conclusion

In conclusion, the 15 AI Use Cases in Government underscores the transformative potential of AI across diverse sectors of governance. By integrating AI into everyday services, governments are not only enhancing operational efficiency but also improving the overall quality of life for citizens. From personalised healthcare to smart urbanism, AI is playing a pivotal role in driving innovation, accessibility, and sustainable solutions.

As governments worldwide grapple with increasing complexity, AI offers a scalable and adaptive approach to tackle challenges that have persisted for decades. These use cases serve as a blueprint for the future of governance—where data-driven decisions, real-time automation, and personalised public services become the norm. The success of 75 pilots specficly the 15 mentioned in this report are a testament to AI's power to reshape public sector operations, fostering a more inclusive, responsive, and efficient governance framework.

Moving forward, it is critical for governments to continue investing in AI talent, infrastructure, and partnerships with the private sector to sustain the momentum of this digital revolution. As Dubai positions itself as a global leader in AI through initiatives like the Dubai Centre for Artificial Intelligence, these case studies provide valuable insights into how AI can be harnessed to create more prosperous, secure, and resilient communities.

Together, these efforts will not only accelerate the adoption of AI in government but also create a lasting legacy of innovation and excellence in public service delivery.

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Government Entities

Digital Dubai Authority
Dubai Electricity and Water Authority
Dubai Media Council
Dubai Department of Economy and Tourism
Dubai Customs
Dubai Police Force
Dubai Culture and Arts Authority
Dubai Health Authority
Dubai Airports
Ports, Customs and Free Zone Corporation
Dubai Corporation for Ambulance Services
Dubai Land Department
Dubai Foundation for Women and Children
Dubai Courts
Roads and Transport Authority
Dubai Government Human Resources Department
Dubai Municipality
Dubai Public Prosecution
Mohammed Bin Rashid Housing Establishment
Awqaf and Minors Affairs Foundation
Mohammed Bin Rashid Library
Dubai Sports Council
Mohammed Bin Rashid School of Government
Dubai Civil Aviation Authority
Dubai Civil Defense
Federal Authority for Identity, Citizenship, Customs & Port Security
Community Development Authority
Dubai Chamber of Commerce and Industry
Knowledge and Human Development Authority
Hamdan Bin Mohammed Smart University
Dubai Integrated Economic Zones Authority
Islamic Affairs and Charitable Activities Department
Watani Al Emarat Foundation

AI Companies

EmoTech
Lisan AI
Momenti MENA FZ LLC
Beyond Eris Solutions
Camb AI
Isazi AI
Pixonal
Uktob.AI
Xenon Stack
Musavir.ai
Emaww
Kebula S.r.l.
Pento Pix
SocialXai
Vidby
Wrtn Technologies
Xtory
AIM technologies
Dxwand
Enterprise bot
Rocket science
Siren Analytics
StoreGene
Uno AI
ViAct
VisionarySchoolmen Pte Ltd.
Widebot AI
Xkool

ON USING GENERATIVE ARTIFICIAL INTELLIGENCE

As part of Dubai's strategic push to accelerate the adoption of emerging technologies, and under the broader direction of the Dubai Future Foundation (DFF), GenAI was deployed in select foundational areas to support this use case report particularly in content development, linguistic refinement, visual design, and research mapping. This report represents insights from the top 73 pilot use cases, carried out in collaboration with 33 Dubai government entities, as part of the broader GenAI Accelerator initiative.

In this early phase, GenAI was leveraged to support content creation by enhancing the clarity, consistency, and tone of written materials ensuring alignment with professional and governmental communication standards. Language models were employed to detect and correct grammar issues, elevate sentence structure, and enhance coherence across various sections of the report.

From a research and analysis standpoint, GenAI was instrumental in synthesising global technology trends, policy shifts, and emerging innovations. It was used to extract insights from a wide range of international reports, datasets, and foresight publications enabling the identification of cross-sectoral patterns and benchmarks. GenAI supported the rapid aggregation and comparison of global statistics related to AI adoption, economic impact, and regulatory developments, helping contextualise Dubai's position within the global innovation landscape. This informed the selection and prioritisation of use cases based on their potential scale, urgency, and transformative impact on public sector delivery and efficiency. Visual design was augmented through the use of GenAI-generated imagery, where key opportunity areas were brought to life using symbolic representations that captured the tone and intent of the content.

It is important to note that all operational, technical, and implementation learnings particularly those tied to practical deployment, risk calibration, and ethical governance—will be shaped and validated through ongoing real-world pilots and engagement with government partners during the next phases of the GenAI Accelerator program.

ABOUT THE DUBAI FUTURE FOUNDATION

Dubai Future Foundation aims to realise the vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, for the future of Dubai and consolidate its global status as a leading city of the future. In partnership with its partners from government entities, international companies, startups and entrepreneurs in the UAE and around the world, Dubai Future Foundation drives joint efforts to collectively imagine, design and execute the future of Dubai.

Under the supervision and with the support of His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai, Chairman of the Executive Council of Dubai and Chairman of the Board of Trustees of Dubai Future Foundation, DFF works on a three-pronged strategy: to imagine, design and execute the future. It does this through the development and launch of national and global programmes and initiatives, preparing plans and strategies for the future, issuing foresight reports and supporting innovative and qualitative projects. These contribute to positioning Dubai as a global capital for the development and adoption of the latest innovative solutions and practices to serve humanity.

Dubai Future Foundation focuses on identifying the most prominent challenges facing cities, communities and sectors in the future and transforming them into promising growth opportunities by collecting and analysing data, studying global trends and keeping pace with and preparing for rapid changes. It is also looking at future sectors, their integration and the reshaping of current industries.

Dubai Future Foundation oversees many pioneering projects and initiatives, such as the Museum of the Future, Area 2071, The Centre for the Fourth Industrial Revolution UAE, Dubai Future Accelerators, One Million Arab Coders, Dubai Future District, Dubai Future Solutions, Dubai Future Forum, Dubai Metaverse Assembly. Its many knowledge initiatives and future design centres contribute to building specialised local talents for future requirements and empowering them with the necessary skills to contribute to the sustainable development of Dubai.

DISCLAIMER

This report was prepared for informational,educational and guidance purposes. Based on studies, research , research and the pilots executed during Dubai Center of Artificial Intelligence Program that should not necessarily be adopted or implemented. The findings, interpretations, and conclusions expressed in this report do not necessarily reflect the views of DFF.

The information presented in this report is based on studies, research, and data available up to the date of publication. The report aims to provide information and stimulate critical thinking and informed decision-making in the areas of future foresight. DFF disclaims all liability related to the content and use of the report (or any reliance placed on it, in particular, for any interpretation, decisions, or actions based on the information in this report). DFF does not recommend or endorse any specific actions, strategies, or viewpoints discussed in this report.

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This report is provided in English as the authoritative and operative version.

Any Arabic translation of The 15 AI Use Cases in Government is solely for convenience. While efforts have been made to ensure accuracy, the English version shall prevail in case of any discrepancies or inconsistencies between the two translations.

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