CITY OF LONDON

THE GLOBAL CITY

in collaboration with EY

AI: Accelerating Innovation

How Artificial Intelligence is turbocharging UK financial and professional services

Contents

Foreword

City of London Corporation

Artificial Intelligence (AI) is rapidly transforming the world around us. From education to innovation, transport to technology, every sector will be impacted by AI.

This report shows how financial and professional services (FPS) is at the forefront of this revolution. FPS businesses are at the vanguard of investing in and adopting AI technologies to boost productivity, develop products, and improve customer experience. Indeed, this report finds that the sectors with the highest levels of AI adoption are legal, IT, finance, and accounting.

By leading on AI and other technologies, the FPS sector can help put the United Kingdom at the centre of a global transition that will boost domestic economic growth. The City of London Corporation recently published Vision for Economic Growth, a roadmap to drive prosperity across the country to 2030 and beyond. An integral part of that vision is turning the country into a digital-first economy. Sensible and safe AI development will be key to unlocking that economic growth. The sector understands that AI offers risks as well as benefits, and these must be properly mitigated.

An important foundation to this investment is clear regulatory expectations on how firms can safely adopt and scale AI. Here, it makes sense for policymakers to use guidance and an outcomes-based approach, rather than rigid rules which can quickly become outdated. This flexibility does not mean low standards – far from it. The confidence to invest, use AI, and grow is contingent on sound regulation.

The United Kingdom has been a hotbed of innovative FPS technology success. With deep pools of expertise, talent, and capital, businesses feel confident immersing themselves in our vibrant ecosystem. AI is no exception. There are currently 3,000 AI firms in the UK employing over 50,000 people. This report sets out areas, such as digital upskilling, where the ecosystem can be strengthened even further.

By enhancing our ecosystem and taking a proportionate regulatory approach, we have a great opportunity to embrace AI, accelerate innovation, and drive economic growth. Let's take it.

Chris Hayward
Policy Chairman of the City of London Corporation

Foreword

Ernst & Young LLP (EY)

Artificial Intelligence (AI) has had a profound impact on businesses and individuals with some truly impressive statistics. One in six organisations in the UK are utilising AI technology, ChatGPT reached over 100 million users just two months after its launch to become the fastest-growing consumer internet application ever, and FPS is projecting to allocate $31bn by 2025 to AI investments, according to one estimate.

AI has truly become mainstream and the benefits of AI to organisations and individuals will only increase as there is greater adoption and investment in AI technology. AI investment in the UK is the highest in Europe, and according to the Department for Digital, Culture, Media & Sport, there are over 3,000 companies focused on AI solutions, with adoption of AI by FPS already above 25%.

This report highlights how FPS has been a key contributor to the innovation in AI technology and its evolution, and provides insights on AI adoption, investment, and case studies on how AI is being utilised in FPS.

For FPS to remain at the forefront of AI innovation, the development of AI needs to factor in wider ecosystem enablers, including digital upskilling, investment, guidance for organisations on consumer protection, with the appropriate balance of regulatory considerations. The report concludes with perspectives from the City of London Corporation on the importance of these elements.

Axe Ali
Partner, Private Equity and Venture Capital

Section 1
AI is transforming Financial and Professional Services (FPS)

1.1 FPS at the forefront of AI innovation

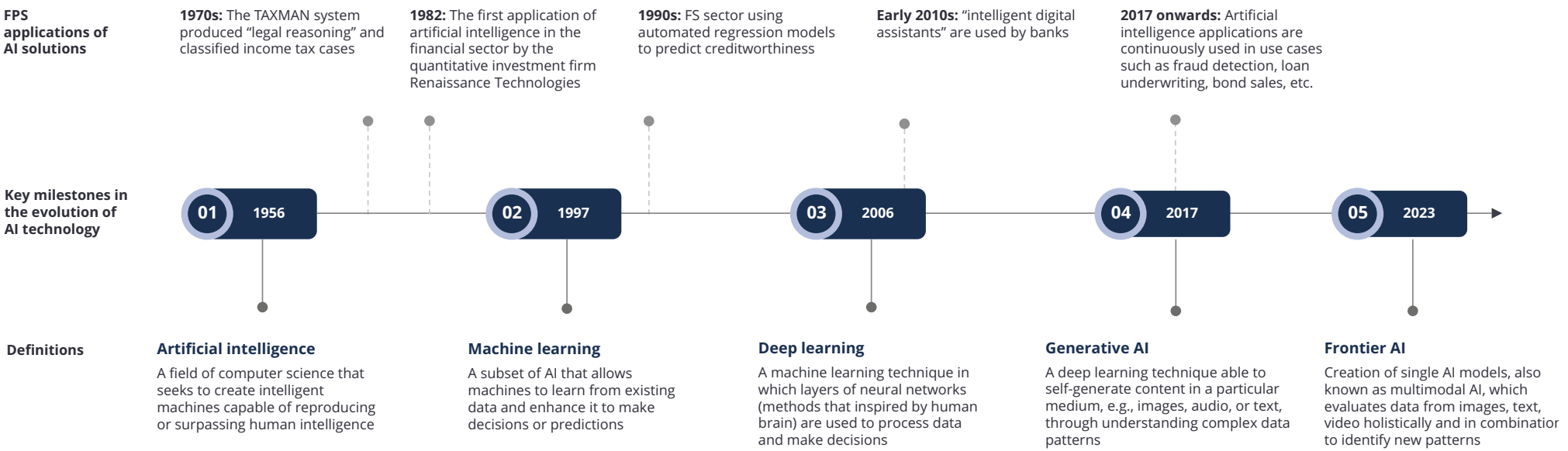
Whilst AI has recently gained public prominence, the transition of AI to the mainstream has been the result of continuous innovation. FPS has been a key contributor to that evolution.[1]

The genesis of AI started c.70 years ago from the field of computer science and sought to create machines which were capable of human levels of intelligence. The foundational building block for AI technology is data on which machines are 'trained' and permits them to 'learn'.

FPS by its very nature collects, analyses, and utilises extensive volumes of data, which enabled the sector to be an early adopter of AI technology. The technology has become increasingly sophisticated to the point where machines are able to self-generate content, hence the concept of 'generative AI' (Gen AI).

Frontier AI models are now being developed which combine various AI techniques and solutions with increased computing capability to deliver outputs which are multi-faceted in nature.

Figure 1: The evolution of AI and application to FPS



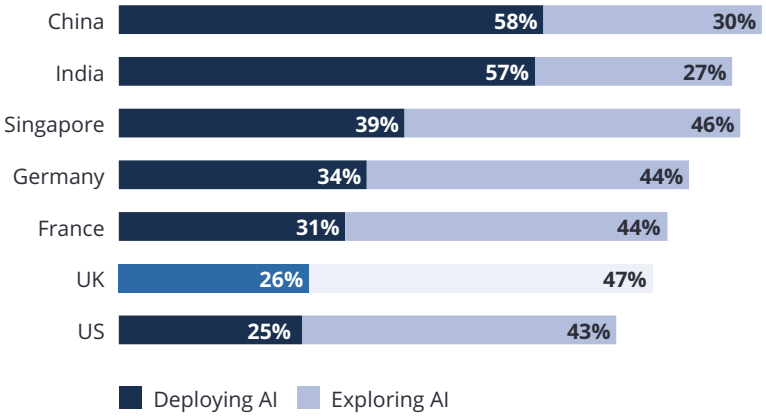
Source: Fortune, EY-Parthenon analysis

1.2. FPS is a leading adopter of AI

Globally, the deployment of AI is higher in Asia, with the UK and US similar in percentage terms of deploying and exploring the use of AI.[2] China and India have accelerated the development of AI due to large talent pools and the increased level of government focus.

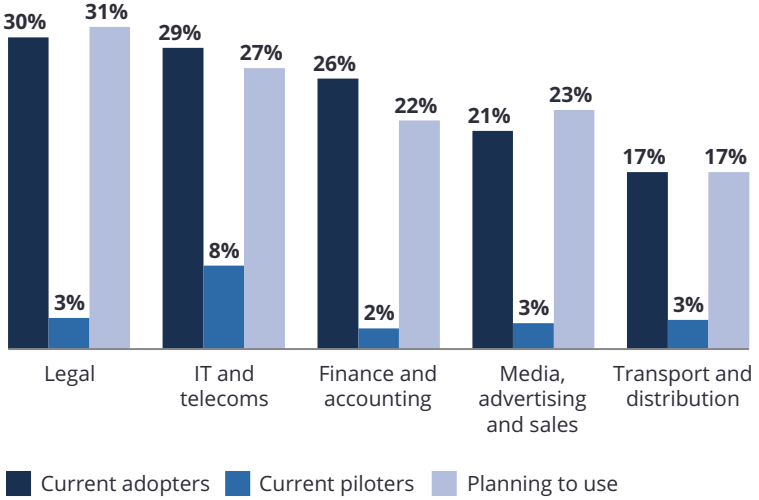
AI uptake in the UK varies significantly by sector, with those that have focused on digitising operations and services adopting AI more readily. The continuous trend of digitisation in banking, insurance, and business services combined with access to open data has been a facilitator of AI growth with financial services and legal services having adoption rates of 26% and 30% respectively.[3]

Figure 2: AI adoption by country. %, 2022



Source: Fortune, EY-Parthenon analysis

Figure 3 Share of AI adoption by sector. %, 2020

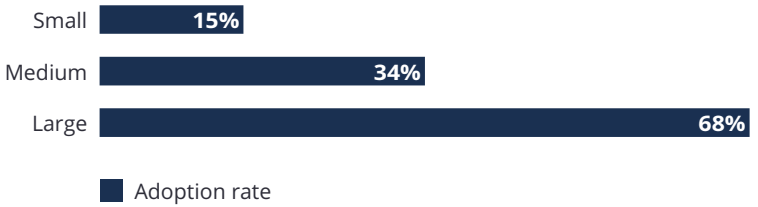


Source: IBM

The size of organisations appears to influence the adoption rate of AI with 72% of large financial services firms reported to be using or developing machine learning (ML) applications. For smaller organisations, the ability to adopt and benefit from AI technologies may require additional support.[4]

The two most common solutions to be adopted by companies that are planning to use AI were data management and analysis at 89% and natural language processing at 85%.[5]

Figure 4: AI adoption of each enterprise size. %, 2020



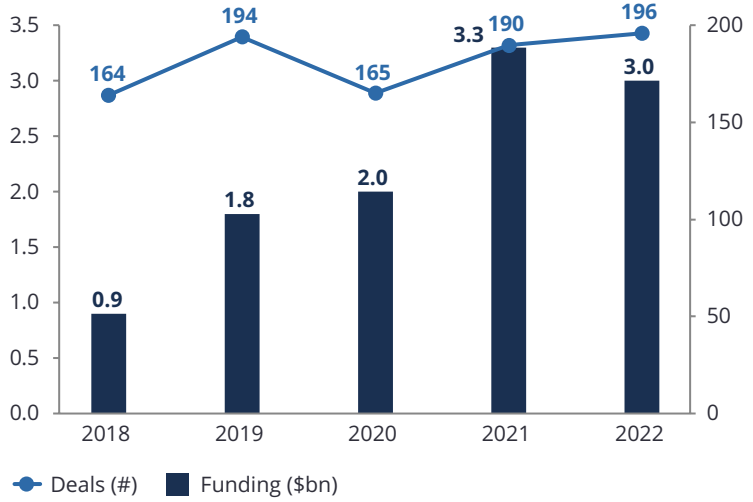
Source: DCMS

1.3 FPS contributing to investments in AI technology and skills

The growth of AI has had a noticeable impact to the UK economy and in 2021 there were over 3,000 AI companies in the UK, employing over 50,000 people and generating over £10 billion in revenues.[6] The UK's AI market was valued at over $21 billion as of 2022 and is estimated to grow at a c.34% per annum between 2022-35, and potentially worth $1 trillion by 2035.[7]

Investment into AI has increased considerably over the last few years globally and is estimated to reach $200 billion by 2025.[8] Projections indicate that financial institutions are expected to allocate an extra $31 billion globally by 2025 specifically for AI investments.[9]

Figure 5: UK Private capital funding to AI companies and number of deals. #, 2018-2022



Source: CB Insights

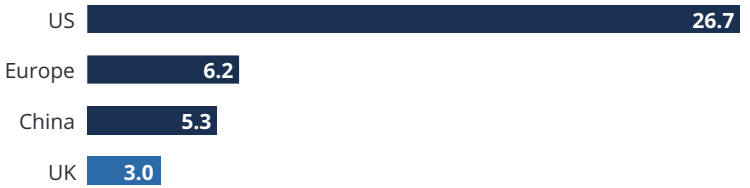
In the UK, private capital investment was $3 billion. The UK recieves around 50% of the investment in Europe and was third globally after the US and China.[10] [11] UK AI scaleups secured nearly double the funding compared to France, Germany, and the rest of Europe combined.[12]

Innovation and investment in AI have positioned the UK to attract top-tier AI talent from around the world. The UK is the second most likely global destination for mobile AI researchers, after the US. However, the gap between demand and supply of AI skills remains significant and is growing, more AI expertise is needed.

In 2020, there was a 16% increase for online AI and Data Science job vacancies and research found that 69% of vacancies were hard to fill.[13] A survey conducted by the AI Council and the Alan Turing Institute in 2021 highlighted that 81% of respondents agreed there were significant barriers in recruiting and retaining top AI talent in their domain.[14]

The impact of AI on knowledge-based sectors is expected to have material implications. In a survey of 1,200 individuals in the financial and professional services sector, 90% expected AI to reshape skills and talent and 66% expected AI would give rise to new career paths.[15]

Figure 6: Private capital funding to AI companies in leading markets. $bn, 2022



Source: CB Insights

1.4 AI in FPS leading to widespread benefits

The initial focus from FPS has primarily concentrated on the efficiency and productivity gains which can be achieved through AI.

FPS, and specifically Banking within, is among the sectors benefiting the most in terms of productivity impact.[16]

As AI has become more sophisticated, FPS have broadened the scope of what AI can achieve to encompass more societal benefits and outcomes for end users.

Key examples include:

- **Inclusion:** Expanding the suite of propositions and products through improved decisioning and modelling to allow access for underserved customer segments
- **Wellbeing:** Improving engagement with customer segments and delivering beyond the traditional service-based concept of FPS to financial and mental well-being
- **Literacy:** Increasing education and awareness for customer segments to demystify FPS and develop customers capabilities
- **Sustainable finance:** Identifying more sustainable investment strategies to achieve outcomes including decarbonisation and supporting transition to net zero

Figure 7: Key potential positive outcomes for (generative) AI

Illustrative, non-exhaustive. Source: EY-Parthenon analysis

1.5 Increasing trend for deeper AI integration in FPS

Table 1: Overview of AI highlighting key statistics on future growth

TRENDS	CONTEXT	FINANCIAL SERVICES HIGHLIGHTS
Continuous adoption	– In a future scenario where barriers of adoption have steadily been overcome, the adoption rate increases from 15.1% in 2020 to 22.7% in 2025, with an additional 267,000 businesses using AI in their operations[17] – By 2040, once AI has become easier to understand, implement and cheaper, the overall adoption rate is forecasted to reach 34.8%, with 1.3 million businesses using AI[16]	– The overall median number of machine learning (ML) applications in the financial services sector is expected to increase by over 3.5x (from below 10 to close to 30) over the next three years[18] – In particular, the increase in ML applications are forecasted to be highest in banks (2x) and insurance firms (2.5x)[17]
Enhanced productivity	– AI and other technologies possess the capability to automate work activities that absorb 60% to 70% of employees' time today, which contribute an annual productivity growth ranging from 0.2% to 3.3% – Generative AI could enable labour productivity growth of 0.1% to 0.6% annually through 2040[19] – Implementing AI in customer care functions has the potential to enhance productivity, providing value equivalent to 30% to 45% of current function costs[18]	– Banking sector is poised to experience increased productivity ranging from 2.8% to 4.7%[18]
Transition to value added services	– With Generative AI, companies have the tools to move on from lower-value tasks in data processing and risk management, towards customer care and personalisation – Firms are increasingly looking at personalisation tools to enhance product quality and save time for the consumer[20]	– c. 50% of banks are exploring 10+ novel use cases for Generative AI, with enhanced marketing (including personalised product recommendations and customer segmentation), human-like customer service bots and knowledge and/or document management (augmented information search) are top priorities.[21]

TRENDS	CONTEXT	FINANCIAL SERVICES HIGHLIGHTS
Increased investments	– The government aims to elevate the combined research and development (R&D) spending in both the public and private sectors to reach 2.4% of the GDP by the year 2027[22] – Almost half (45%) of CEOs plan significant investments in AI in the next year[23]	– FS companies are expected to invest $31 billion in AI applications, significantly contributing to the growth of the sector[24] – Almost half (45%) of banks are already investing in Generative AI and 52% are planning to invest or interested in learning more[25] – It is projected that 72% of financial institutions are planning to make investments in core technology. 79% are placing a priority on investing in cloud technologies, and 66% are focusing on APIs, data science, and AI learning initiatives[26]
Increasing demand on AI specific talent	– Two thirds of UK firms (67%) expected that the demand for AI skills in their organisation was likely to increase[27] – More than 110,000 UK job vacancies in 2020 for AI and Data Science roles.[26] Share of AI related jobs is in 2022 was 1.1% of all job postings, versus 0.6% 5 years ago[28] – In the 2023 budget, the UK government committed almost £1 billion of government funding towards AI research	– 55% of banks are identifying insufficient internal expertise as a key challenge[29]
Considerations on safe and ethical use	– As the COVID-19 pandemic has accelerated and intensified the digitalisation trend, consumer and investor protection considerations are increasingly important[30] – 65% of CEOs are concerned about the ethical implications and unintended consequences of AI[31]	– 53% of of banks are concerned about legal and reputational risk given the nascency of Generative AI.[32] (Example: dispute on whether the AI algorithm discriminates against women by granting larger limits to men than women on credit card applications)

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Section 2
AI applications are powering progress in FPS

2.1 Use cases of AI in the FPS sector

Figure 8: Selected AI use cases

BANKING & CAPITAL MARKETS	WEALTH & ASSET MANAGEMENT	INSURANCE	PAYMENTS AND FINTECH	PROFESSIONAL SERVICES
MORGAN STANLEY **OpenAI-enabled chatbots** (beta-testing) AI-based engine called Next Best Action, which delivers customised messages and prospects guided by financial advisers	**FIDELITY** **Conversational AI assistant** (proof of concept stage) Speech capabilities support tool that aids portfolio managers and quantitative analysts in automating the equity investment process	**ALLIANZ** **Single-click, fully-automated E2E claims processing** Natural language processing powered digital hub that uses Lauri, the virtual AI lawyer tool developed by Keoghs, to process stage 3 injury claims	**VISA** **Self learning fraud detection** Neural networks based antifraud tool that utillises data going through the transaction systems and generates virtual fraudsters, pitting them against existing anti-fraud tools to identify gaps in fraud detection models	**MACFARLANES** **Automated document management** Platform (for 650 lawyers) in partnership with Harvey, that is using OpenAI and ChatGPT technology to help streamline legal services and generate cost-effective solutions in data processing, synthetising, documents drafting
BANK OF AMERICA **Virtual financial assistant** Hyper-personalisation tool that delivers real-time financial advice, personal finance insights, and portfolio performance	**VANGUARD** **Strategic recordkeeping for financial advisers** Real-time record maintenance platform that leverages VR and conversational AI, and enables customisation of retirement planning customer journey	**PRUDENTIAL FINANCIAL** **Personalised financial planning & insurance** AI backed platform (LINK) that uses gamification to support financial goals, and offers help with insurance and portfolios PruFast Track offers doctor-less Underwriting-as-a-Service, based on GenAI mortality predictions	**AMERICAN EXPRESS** **Automated and augmented customer services** Natural language processing based applications that enables voice-to-text transcription, travel booking processing, classifying emails for delivery to the correct departments, and automation of customer service chat	

Selected examples, non-exhaustive. Source: press search and company websites

2.2 Financial services case study – HSBC on Financial Crime Detection

Starting from 2018, HSBC has increased its commitment to digital transformation, directing substantial investments towards technology, including AI and data analytics. The Dynamic Risk Assessment (DRA) award-winning AI tool, launched in November 2021 and operational in various markets (such as US, UK, Hong Kong, UAE, Mexico), identifies criminal activities by discerning patterns that might elude human observation or more rigid traditional rulesets.

"The introduction of AI has brought about an increase in our financial crime detection capabilities, reducing our false positives and customer friction, while enabling our investigators to focus on addressing real risk."

The Challenge

HSBC Financial Crime team used an in-house rule-based system for identifying unusual and suspicious activities. In a traditional rule-based approach, the process involved generating numerous alerts, which then required analysis by human investigators, resulting in false positive alerts and unnecessary financial crime detection cases. In 2019, expanding a previous strategic partnership with Google, hitherto focused on a range of Cloud services, the team embarked on a mission to develop an AI solution for Financial Crime detection by leveraging Google's engineering capabilities and Cloud infrastructure, coupled with HSBC's knowledge of financial crime risk management.

The Solution

The AI technology deployed is designed to identify trends, patterns, and behaviours by distinguishing between what is considered normal and abnormal for a customer, contextualising customer behaviour and applying a dynamic assessment of risk. The ongoing efforts in DRA involve the development of additional capabilities to address new and emerging risks. The solution has implemented a Single Case Handler model, streamlining the process by assigning one individual to handle alerts from their generation to the final decision. This not only accelerates the progression of a case but also eliminates the duplication of effort that arises when the same information is reviewed by multiple analysts at different levels.

The DRA programme is managed by a designated AI team comprising close to 100 professionals, including data science and technology experts, all contributing to the strategic transformation programme that encompasses infrastructure change. The involvement of business stakeholders throughout the entire lifecycle ensures a holistic and effective risk management approach, with ongoing communication with regulators to keep them informed of the advancements.

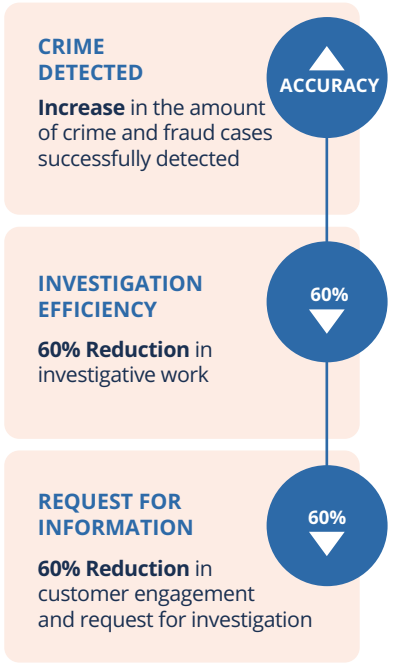
Ongoing monitoring is in place to control any indicators of bias in the model. HSBC's data ethics framework is applied to ensure that data management is aligned with the established data policy and ensure AI and machine learning capabilities are free from bias in accordance with HSBC's ethical standards.

The Result

The solution has achieved a 2-4-fold increase in detected crime cases, as well as a c. 60% reduction in cases requiring an investigator's attention. The implementation of a more accurate monitoring capability has resulted in fewer but higher-quality alerts, allowing investigators to focus on real risk and significantly reducing unnecessary requests for information to customers.

The DRA tool resulted in a positive outcome for approximately 500 employees globally, with 100 resources positively impacted in the UK alone, while customers are benefiting from a better customer experience due to the c. 60% reduction in customer information requests.

The DRA also supports Suspicious Activity Report (SAR) filings, as the tool facilitates quicker and more comprehensive identification of financial crime in the book, therefore providing law enforcement agencies with more useful information.



Professional services case study – Allen & Overy on Day-to-day Legal Application

ALLEN & OVERY

As an innovative international law firm Allen & Overy (A&O) has been utilising AI products for over five years with the ambition to be at the forefront of adopting new technologies that enhance their business. At the start of this year, A&O announced launching a partnership with Harvey, an artificial intelligence platform constructed on a version of OpenAI's latest models, specifically enhanced for legal applications. In doing so A&O was one of the few firms to deploy GPT-4 across it's entire business.

"Professionals want to be part of companies that embrace technology, generative AI tools have the potential to significantly enhance job satisfaction."
Tom Roberts, Partner – Allen & Overy

The Challenge

A&O acknowledged that previous AI applications brought benefits in accelerating some time-consuming tasks, however, limitations with the technology meant it was not versatile enough to be transformational for its core business. Generative AI presented a new opportunity to improve productivity and client service across the business. Considering the nature of the legal profession, the key challenges were in navigating responsible deployment of AI and addressing risks related to accuracy.

The Solution

A&O has rolled out a suite of GPT-4 enabled tools to its staff. This includes both Harvey and ContractMatrix (A&O's end-to-end contract review and negotiation solution). As a result, over 3,500 lawyers, across 43 countries, are now using generative AI in their day-to-day work. Utilising generative AI allows A&O lawyers and business teams to improve efficiencies in a number of different ways – for example, legal research, drafting, document and market trend analysis, summarising and translating information. Whilst the output needs careful review by an A&O lawyer, GPT-4 enables A&O lawyers to deliver faster, smarter and more cost-effective solutions to their clients.

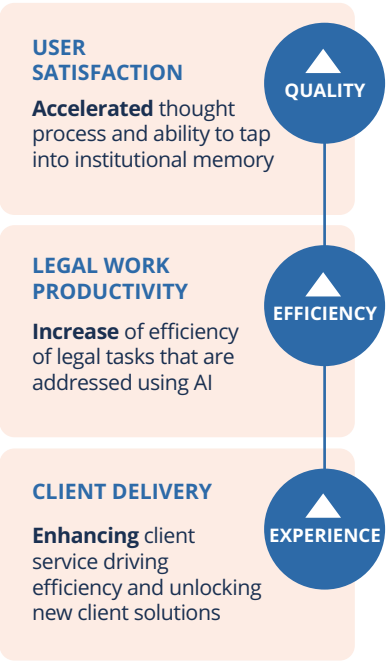
A&O's deployment and use of generative AI is designed around understanding the technology: knowing that it makes mistakes and an "expert in the loop" is critical. A&O underwent an extensive risk management, information security, data protection, tech architecture and change management programme when introducing the technology. The adoption and evolution of generative AI products within A&O is spearheaded by their Markets Innovation Group which established a specific governance structure, rules on use and training programme.

The Result

To evaluate the success of these tools and inform future development, A&O has a "feedback loop" from users across the globe, monitors user engagement (including distribution across job types, jurisdictions, and age groups) and engages with clients on their perspective and use cases.

While this is just the beginning of a journey the pace of adoption is unprecedented and the feedback is overwhelmingly positive on the need to continue on the journey with the right focus on responsible and risk managed adoption. A&O is not yet at the stage of quantifying productivity gains but says it is clear that using generative AI to unlock a comprehensive understanding of legal data, precedents, and institutional knowledge will enhance A&O's client service and drive efficiency.

The future strategy involves implementing more customised generative AI applications, tailored solutions that address case specific needs. The team plans to continue to explore new products and use cases, ensuring that the firm stays at the forefront of innovation.



Section 3

Ecosystem and regulatory considerations

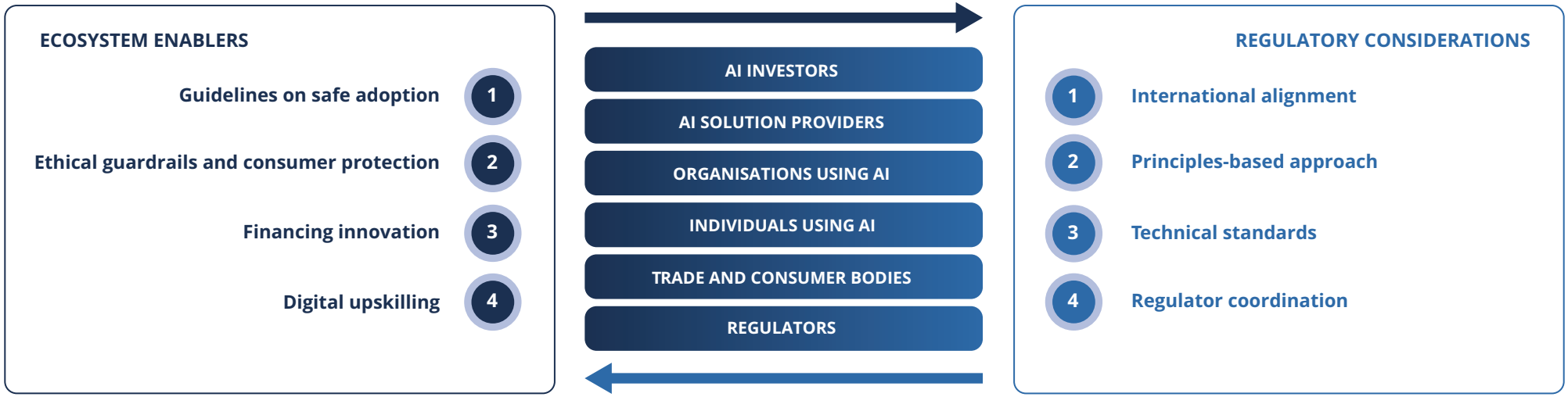
AI presents a challenge for governments and regulators as the many use cases present a large spectrum of risks, some of which may already be managed in existing sectoral approaches. Regulators will need to understand how their existing frameworks take account of AI applications and determine whether they sufficiently address such risks.

Regulators seek to balance AI regulation to protect markets, consumers, and civil society without stifling innovation. Existing regulations are technology-neutral but need to consider new AI-specific risks like transparency, sustainability, model bias, liability, and IP ownership. Regulators should engage with stakeholders in the financial sector to identify gaps and introduce new guidance and rules thoughtfully.

Divergent global regulations increase entry costs and stifle innovation. Regulators need to be cognisant that the digital economy and technologies such as AI are inherently cross-border and therefore international regulatory cohesion and alignment should be encouraged to support global growth.

For FPS to remain at the forefront of AI innovation, the City of London Corporation highlights that the development of AI needs to factor in wider ecosystem enablers with the appropriate balance of regulatory considerations.

Figure 9: Ecosystem framework



Source: CoLC and EY-Parthenon analysis

Table 3: Ecosystem enablers and considerations

1 Governance guidelines on safe adoption

CONSIDERATIONS

Good governance will create the confidence that will drive AI adoption. A critical element of good governance is an effective AI assurance ecosystem. This ecosystem includes best practices, consensus-based standards, tools and services to assure regulators and others that AI systems work as they are supposed to.

It is important that there is a common understanding across stakeholders of AI terms and concepts. The Government is well placed to provide clarity on AI definitions.

2 Ethical guardrails and customer protection measures

CONSIDERATIONS

The AI ecosystem needs to tackle the challenge of unlawful bias. Unlawful bias needs to be detected and prevented whilst avoiding disproportionate regulatory burdens. Technical tools and a more diverse workforce can help detect and mitigate bias. Regulators could stress-test data to create a standardised, bias-free dataset upon which the industry can build and test AI models.

There ought to be a wider societal conversation about how AI can be used 'fairly'. Customers may consider it inappropriate for artifical intelligence to decide on matters with significant impact on a person, such as whether they can take out a mortgage.

3 Financing innovation of high growth companies

CONSIDERATIONS

Many innovative and high-growth companies in the tech sector often struggle to access growth capital from domestic institutional investors. This can hamper their ability to grow domestically and compete globally.

The UK needs to continue reforming its capital markets and pensions systems to better enable institutional investment into FPS Tech. This would benefit savers as well as the high growth companies. The Mansion House Compact is one step in this direction, with further opportunities for reform throughout the long-term savings value chain.

4 Digital upskilling and reskilling of the workforce

CONSIDERATIONS

There is an increasing overlap between tech and FPS: one in eight roles in the sector are now tech roles. Some 95% of financial services firms identify data analytics and insight skills as a priority.[33]

Firms need to invest in retraining, skills forecasting, and building better links with the education system. The Government can help forge these links and incentivise workers and firms.

Senior managers in firms, including Boards, need to upskill to ensure that there is effective governance of AI technologies.

Regulators need to upskill on AI technologies to properly understand the activity they are supervising.

The UK could improve the UK's short-term business mobility visa routes to improve access to international talent.

Table 4: Regulatory considerations for policy makers

1 International alignment

CONSIDERATIONS

- AI technologies will be adopted around the world. So, international guidelines on how to harness AI will make it easier for countries to exploit the benefits of AI at scale and manage risks. Countries will benefit from having a starting point and international firms will benefit from similar regulatory approaches
- In May 2023, G7 leaders identified principles in the Hiroshima Artificial Intelligence (AI) Process and called for an early stocktaking of opportunities and challenges on generative AI

ACTIONS

- Regulators should monitor AI developments in different jurisdictions
- Regulators should continue to engage and drive international discussion on AI regulation, to facilitate alignment
- The G7 to finalise AI principles and international standard setters to consider what it means for their work

Key stakeholders: G7/G20, OECD

2 A principles-based approach

CONSIDERATIONS

- FPS and AI ecosystems need regulators to apply an outcomes based framework to AI
- Regulators should evaluate how existing rules apply to AI in financial services before introducing new ones
- Firms would value guidance on how the use of AI fits within existing legal supervisory expectations
- Regulators have successfully used sandboxes to catalyse safe innovation and should continue to do so

ACTIONS

- Government should set high level AI principles for regulators to implement
- Regulators should use guidance, not rules, to guide the sector's actions.
- FCA to establish an AI sandbox: this could be used to share data and allow wider collaboration across the ecosystem. For example, include energy firms in AI sustainability projects
- Guidance on the liability that firms may face when using AI technology

Key stakeholders: FCA, PRA, DSIT, DBT HMT, ICO, CMA, Ofcom

3 Technical standards

CONSIDERATIONS

- FPS sector recognises the importance of technical standards for a consistent, cross-sectoral AI development in a responsible and safe manner
- The establishment of voluntary industry standards can complement regulatory efforts

ACTIONS

- AI Standards Hub should be developed to help with the development of international standards on AI systems

Key stakeholders: AI Standards Hub

4 Regulator coordination

CONSIDERATIONS

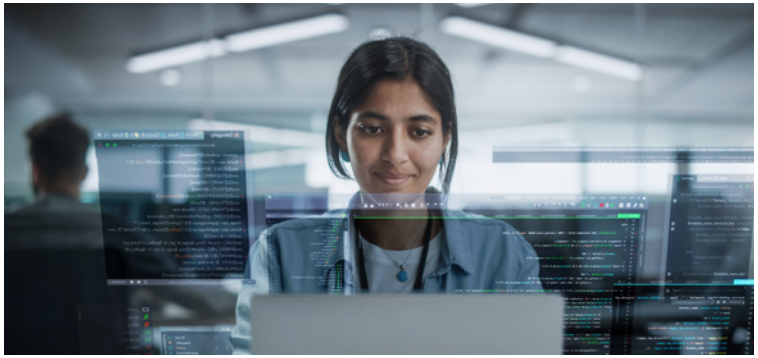
- UK regulators need to provide collective leadership on cross-sectoral digital issues between finance, tech, innovation and AI
- A consistent cross-regulator approach would make compliance easier

ACTIONS

- UK's Digital Regulation Cooperation Forum to focus on driving regulatory coordination for digital and AI issues in FPS
- Consider collaboration between all major regulators, not just the Digital Regulation Cooperation Forum, for whom AI is a significant issue

Key stakeholders: DRCF, DSIT

Divergent jurisdictional approaches are already challenging for FPS firms with a global footprint as organisations strive to navigate an uncertain and increasingly complex regulatory environment. However, such complexity is increasing the cost of entry to markets and potentially stifling both innovation and competition. A parallel may be drawn with data protection legislation. The EU's GDPR was implemented in 2018 and provided the strictest data protection framework globally. Five years later, there are around 120 jurisdictional data protection laws and spend on data protection compliance has increased exponentially with the fear of large financial sanctions and reputational damage. There are many cases of organisations pulling out of jurisdictions due to overly strict data protection obligations, such as data localisation. Regulators need to be aware that the digital economy and technologies such as AI are inherently cross-border and therefore international regulatory cohesion and alignment should be encouraged to support global growth.



Note: Table highlights the regulator which is being proposed to take the lead, and not an indication of whether a regulator exists with indicated scope. The US and EU environment is more nuanced due to state level and member country level regulations

Figure 10: Review of regulatory intensity and regulatory bodies[34]

REGULATORY INTENSITY

Legend

- Regulatory approach in consultation
- Draft principles in consultation
- Draft law/framework in consultation
- Law/regulatory framework implemented

	UK	Australia	Brazil	Canada	China*	EU	India	HK	SG	US
Intensity	◑	◔	◔	◔	◕	◕	◔	◔	◑	◔

OVERVIEW OF REGULATORY BODIES AND AUTHORITIES TAKING THE LEAD ON AI REGULATION

	UK	Australia	Brazil	Canada	China*	EU	India	HK	SG	US
EXISTING										
Consumer protection	●	●								●
Data privacy	●	●	●	●	●	●		●	●	
Online safety		●			●					
NEW										
AI Office	●					●	●		●	●
Gov't tech/ digital dept	●	●	●	●	●	●	●		●	●

*Refers to mainland China

Annex

Endnotes

1 https://fortune.com/2023/07/21/ai-finance-history-regressions-generative-artificial-intelligence-pagaya-kasisto/

2 IBM Global AI Adoption Index 2022 (n = 7,502) (2022) Note: Alternate surveys are available such as the AI Index Study (University of Stanford) that have different adoption rates (e.g. 59% for North America, 48% for Europe) where discrepancies may be attributable to sample size, composition, definition, etc.

3 DCMS – AI Activity in UK Business (n=2,008 covering all sectors and business sizes) (2022)

4 Bank of England – Machine learning in UK financial services (2022) (n=168 financial institutions, of which 42% responded. The respondents were larger firms and no responses were received from smaller fintech firms or start-ups, indicating a skew towards larger firms)

5 DCMS – AI Activity in UK Business (n=2,008 covering all sectors and business sizes) (2022)

6 Number of companies includes dedicated AI and diversified technology companies actively offering AI solutions. DCMS – AI Activity in UK Business (n=2,008 covering all sectors and business sizes) (2022)

7 International Trade Administration – United Kingdom artificial intelligence market (2023)

8 Goldman Sachs Research – AI investment forecast to approach $200 billion globally by 2025 (2023)

9 JLL Banking and Finance Outlook (2023)

10 UK Intellectual Property Office – Intellectual property and investment in Artificial Intelligence (2022)

11 CB Insights – State of AI (2023)

12 UK Intellectual Property Office – Intellectual property and investment in Artificial Intelligence (2022)

13 Office for Artificial Intelligence – National AI Strategy (2021)

14 Office for Artificial Intelligence – National AI Strategy (2021)

15 Thomson Reuters – Future of Professionals Report: How AI is the Catalyst for Transforming Every Aspect of Work (2023)

16 McKinsey & Company – The economic potential of generative AI: The next productivity frontier (2023)

17 DCMS – AI Activity in UK Businesses (n=2008) (2022)

18 Bank of England – Machine learning in UK financial services (2022) (n=168 financial institutions, of which 42% responded. The respondents were larger firms and no responses were received from smaller fintech firms or start-ups, indicating a skew towards larger firms).

19 McKinsey & Company – The economic potential of generative AI: The next productivity frontier (2023) Note: Measured in terms of the value derived from the industry's annual revenue

20 PWC – The macroeconomic impact of artificial intelligence (2018)

21 EY EMEA AI for Financial Services Survey (n=60) (2023)

22 The CEO Outlook Pulse – July 2023 (n = 1200) (2023)

23 EY Parthenon Retail and Commercial Banking Generative AI Survey (n=151) (2023)

24 JLL Banking and Finance Outlook (2023)

25 DCMS – AI Activity in UK Businesses (n=2008) (2022)

26 Lloyds Bank Financial Institutions Sentiment Survey (n=109) (2023)

27 Department for Business, Energy and Industrial Strategy – National AI Strategy (2022)

28 Lightcast – Artificial Intelligence in the UK (2022)

29 EY EMEA AI for Financial Services Survey (n=60) (2023)

30 OECD – Artificial Intelligence, Machine Learning and Big Data in Finance (2021)

31 The CEO Outlook Pulse – July 2023 (n = 1200) (2023)

32 EY EMEA AI for Financial Services Survey (n=60) (2023)

33 Financial Services Skills Council - Future Skills Report 2023 (2023)

34 EY Law analysis of the following: Office for Artificial Intelligence, Department for Science, Innovation and Technology: Policy paper – A pro-innovation approach to AI regulation (2023); Safe and responsible AI in Australia (2023); Department of Industry, Science and Resources; AI Roadmap, Commonwealth Scientific and Industrial Research Organisation; The National Congress decrees: Bill no 2338/2023 (2023); House of Commons of Canada: Artificial Intelligence and Data Act (2022); Algorithm Recommendation Management Provisions (in force); Interim Measures for the Management of Generative AI Services (in force); Deep Synthesis Management Provisions (draft); European Commission: EU AI Act (2021); Government of India: Digital India Act 2023 (draft); Ethical Artificial Intelligence Framework, Guidance on the Ethical Development and Use of AI; Model AI Governance Framework; Trusted Data Sharing Framework; National AI Programmes in Government and Finance; Veritas Initiative; Proposed Advisory Guidelines on Use of Personal Data in AI Recommendation and Decision Systems; Maintaining American Leadership in AI, Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government; AI Training Act; National AI Initiative Act; AI in Government Act; Algorithmic Accountability Act; National AI Commission Act; Digital Platform Commission Act; Global Technology Leadership Act; Transparent Automated Governance Act

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- Support a thriving economy
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