



*'creating a level playing field'*

# State Of Artificial Intelligence (Ai) In The Postal & Telecommunications Sector In Zimbabwe

## **Report by the**

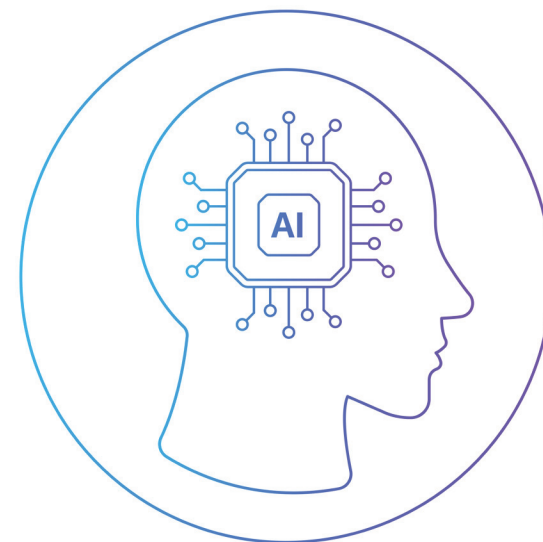
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## Executive Summary

With the global Artificial Intelligence in communications market projected to reach \$38.8 billion by 2031<sup>1</sup>, the significance of Artificial Intelligence in the industry is hard to ignore. The global communications industry has taken significant strides in leveraging artificial intelligence (AI) to revolutionize the way they operate. The explosive growth of data, growth in digital users coupled with advancements in computational power and sophisticated computing architecture, have propelled artificial intelligence (AI) into the forefront of innovation across diverse industries such as retail, finance, healthcare, and transportation. The postal and telecommunications sector has been no exception. The Postal and Telecommunications Regulatory Authority of Zimbabwe (PO-TRAZ) conducted exploratory research on the adoption of Artificial Intelligence by the postal and telecommunications sector of Zimbabwe, in line with its mandate to promote the development of postal and telecommunication systems and services with practicable recognised international standards and public demand.

The report highlights the transformative capabilities of Artificial Intelligence in the postal and telecommunications. It also brings to light the low AI adoption levels by players in the postal and telecommunications sector in Zimbabwe. The current use cases of AI application are still limited in scale and scope, focusing mainly on customer service and sales and marketing functions. The players are largely consumers, they are yet to be actively involved in the commercial development and production of AI solutions. Nevertheless operators, particularly in the telecommunications sector, are intent on strategically embracing AI as evidenced by the historical and planned capital expenditure on AI solutions. The study made various recommendations to the gaps identified, such as the establishment of a multi-stakeholder AI and or/Big Data Steering Committee, facilitating the availability of Data for AI, implementation of a light-touch regulatory framework for the development and use of responsible Artificial Intelligence (AI) and a national focus on AI centred research, innovation & skills development.



Operators, particularly in the telecommunications sector, are intent on strategically embracing AI as evidenced by the historical and planned capital expenditure on AI solutions

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## 1.1 WHAT IS ARTIFICIAL INTELLIGENCE (AI)?

The definition of 'intelligence' provides the basis to explicate 'Artificial Intelligence'. 'Intelligence', in its simplest form, may be defined as the ability to learn and perform suitable techniques to solve problems and achieve goals, appropriate to the context, in an uncertain, ever-varying world (Professor C. Manning, 2020)<sup>2</sup>. While several definitions of AI have surfaced over the last few decades, John McCarthy offers the following definition in this 2007 paper "What is Artificial Intelligence"<sup>3</sup>:

**"It is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence but does not confine itself to methods that are biologically observable."**

In its simplest form, artificial intelligence is a field, which combines computer science and robust datasets, to enable problem-solving. ITU<sup>4</sup> in its report on 'Artificial Intelligence for Good', states that "Artificial Intelligence (AI) comprises a set of widely different technologies, which can be broadly defined and grouped together as self-learning, adaptive systems". It also encompasses sub-fields of machine learning and deep learning, which are frequently mentioned in conjunction with artificial intelligence. These disciplines are comprised of AI algorithms which seek to create expert systems which make predictions or classifications based on input data.

The idea of a machine that thinks dates to ancient Greece. However, the birth of the artificial intelligence conversation was denoted by Alan Turing's<sup>5</sup> seminal work, "Computing Machinery and Intelligence" which was published in 1950. In this paper, Turing, often referred to as the "father of computer science", asks the following question, "Can machines think?" From there, he offers a test, now famously known as the "Turing Test", where a human interrogator would try to distinguish between a computer and human text response. The term 'artificial intelligence' was coined by John McCarthy in 1956. Later that year, Allen Newell, J.C. Shaw, and Herbert Simon created the 'Logic Theorist', the first-ever running AI software program. The field of AI is constantly evolving and with it the terminology used to describe different aspects of AI will continue to evolve over time.

## 1.2 WHY AI?

According to the renowned AI author, Professor Harari<sup>6</sup>, AI is different from every previous technology in human history because it is the first technology that can make decisions by itself, create new ideas by itself and that can learn and develop by itself. Although the AI timeline goes back to the 1940s, it is only recently that AI has advanced from narrow AI to the current era of Artificial General Intelligence (AGI) where the machine can understand or learn any intellectual task that a human is capable of learning. According to IBM<sup>7</sup>, these advancements are providing economic sectors, including the postal and telecommunications industry, with the ability to respond to business requirements by creating limitless applications on top of AGI. The embedding of AI technologies in business tasks and its effective use in this 4th industrial revolution is crucial to success of modern-day businesses and many organisations are incorporating AI.

In the postal and telecommunications sectors, operations present one of the most challenging and complex areas to manage. Operators who excel in this area typically achieve a higher level of success than their rivals. In recent years, however, AI has offered innovative solutions that promise to streamline operational processes for better performance through, but not limited to the following:

- ✓ Enhancing customer experience
- ✓ Improving contact centre operations
- ✓ Predictive maintenance
- ✓ Preventing fraud
- ✓ Network optimization
- ✓ Robotics Process Automation
- ✓ Predictive Analytics
- ✓ Revenue Assurance

AI is revolutionising every sector; this is enabled by the stupendous growth in computational power, data analytics and the widespread availability of telecommunication access worldwide.

These factors are primarily facilitated by massive investments in telecommunications network infrastructure and deployment of next generation technologies such as 4G and 5G.

### 1.3 PURPOSE OF THE STUDY

In line with its mandate to promote the development of postal and telecommunication systems and services with practicable recognised international standards and public demand, the Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) found it imperative to conduct exploratory research on the adoption of Artificial Intelligence by the postal and telecommunications sector of Zimbabwe. Specific research objectives include:

- ✓ Determine the current state of AI adoption in the postal and telecommunications sector in Zimbabwe.
- ✓ Ascertain the prevalent AI technologies in use and their application in Zimbabwe's postal and telecommunication sector.
- ✓ Ascertain the key drivers as well as barriers to AI adoption by postal and telecommunications operators Zimbabwe.
- ✓ To assess the impact of AI use by postal and telecommunications operators in Zimbabwe.
- ✓ To ascertain historical and projected expenditure on AI solutions by the postal and telecommunications sector players.
- ✓ To proffer recommendations on accelerating AI development, adoption and use.

### 1.4 SIGNIFICANCE OF THE STUDY

The survey will provide a first step in laying the basis to understand the progress in AI adoption and use, identify gaps as well as proffer recommendations that will guide POTRAZ in its regulatory roles. The findings of the study will also be valuable to postal and telecommunications operators, and other stakeholders who are interested in understanding how AI is transforming the sector and how to support its responsible and beneficial adoption.

### 1.5 THE SURVEY

The study was cross sectional in nature. The sampling the frame was comprised of all licensed operators in the postal and telecommunications sector and a census approach was employed on selecting the study participants. Data collection was done through semi-structured questionnaire that comprehensively covered both the aspects of qualitative and quantitative to address the intended objectives. Self-Administered Online Interviews (SAOI) were conducted through the KOBO toolbox platform, where participants were given a link the platform to fill in the responses and upload to the server.

Data analysis was done through descriptive statistics on the quantitative data using the SPSS software and content analysis was applied the qualitative areas of the collected data. The comprehensive questionnaire and the census approach sampling ensured validity, reliability, and generalizability of study. Responses were received from the following postal and telecommunications operators:



| Sector             | Respondants                                             |
|--------------------|---------------------------------------------------------|
| Telecommunications | 1. Econet                                               |
|                    | 2. NetOne                                               |
|                    | 3. Telecel                                              |
|                    | 4. TelOne                                               |
|                    | 5. Liquid                                               |
|                    | 6. Dandemutande                                         |
|                    | 7. Telecontract                                         |
|                    | 8. Powertel                                             |
|                    | 9. DFA                                                  |
|                    | 10. Africom                                             |
| Postal & Courier   | 1. Zimpost                                              |
|                    | 2. DHL                                                  |
|                    | 3. FedEx                                                |
|                    | 4. Unifreight                                           |
|                    | 5. One Logistics                                        |
|                    | 6. Trek Transport t/a Skynet Worldwide Express Zimbabwe |
|                    | 7. Financial Strategies                                 |
|                    | 8. Merchandise Carriers Pvt Ltd                         |
|                    | 9. Tuma Logistics                                       |

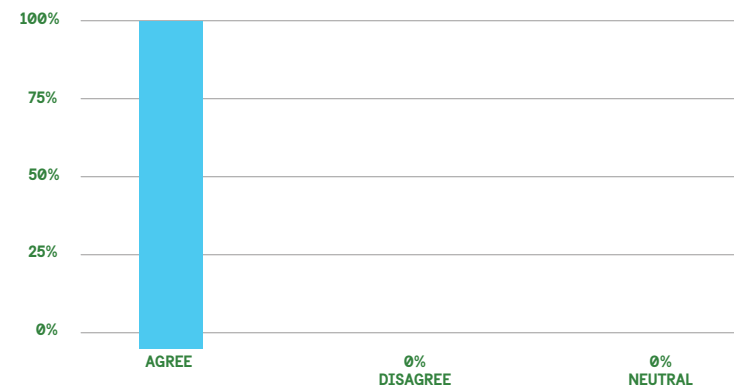
## 2. Research Findings: Telecommunications

### 2.1 PERCEIVED IMPORTANCE OF AI

The importance of integrating AI into diverse business operations was underscored by the telecommunications service providers, as 100% firmly agreed that the adoption of AI was key to the growth of the telecommunications sector.

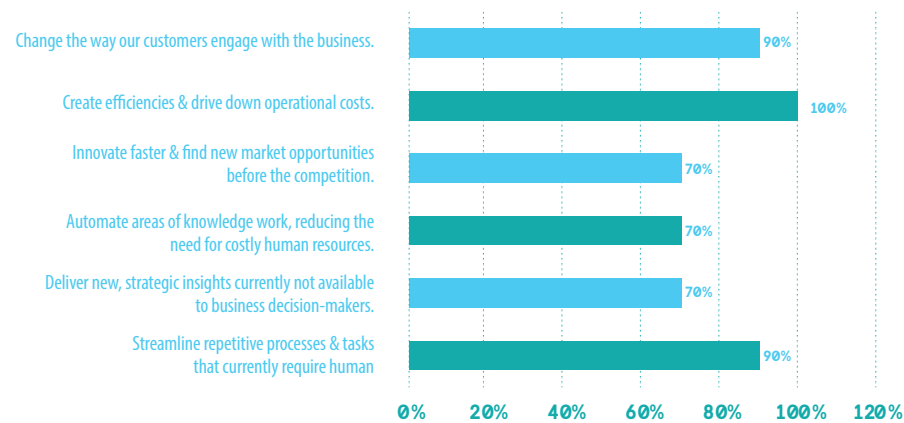
**Figure 1: Perceived Importance of AI**

Q: Do you believe that the adoption of Artificial Intelligence is key to growth of the sector?



Telecommunications operators also identified the following as the biggest benefits of Artificial Intelligence in revolutionising their businesses:

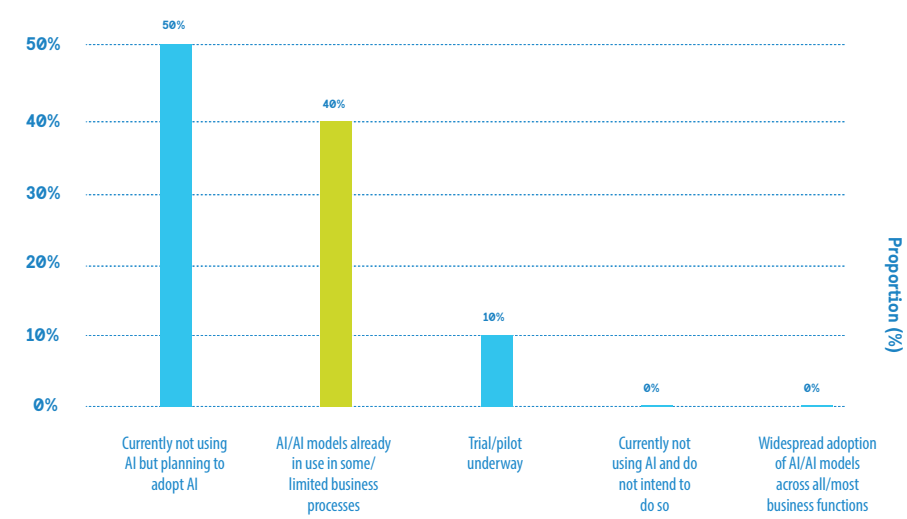
**Figure 2: Benefits of AI**



## 2.2 AI ADOPTION LEVELS

The study assessed the AI adoption levels in the telecommunication sector. The results show that adoption is still nascent as only 40% of telecommunications service providers had adopted AI solutions for some of their business operations. Furthermore, none reported widespread adoption of AI across most business functions as shown in Figure 3 below:

Figure 3: AI Adoption Level for Telecommunications Operators



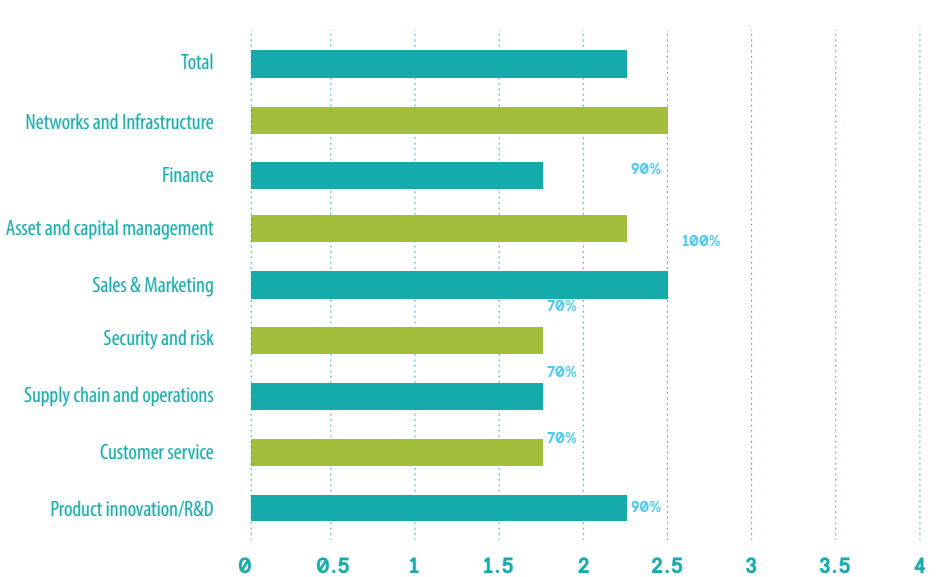
Q: Currently, at what level is your organisation using AI?

As shown above, only four telecommunications operators had AI models already in use in some business functions. Some operators highlighted that they had adopted a 'wait and see' approach in light of data protection implications that come with AI. It is important to note that although adoption still relevantly low, the intention is there; one operator was in a trial/pilot phase at the time of the study. The anticipated period of adoption by most operators who indicated the intention to incorporate AI in their function was less than a year, with plans scheduled for 2024.

## 2.3 CURRENT USE CASES

The survey sought to determine the current use functions of AI in organisations who had already adopted AI. The results shows that currently the main function of AI by telecommunications operators is in customer services, with all (100%) percent of the operators indicating use of AI in this function. The use of AI in other functions is shown in Figure 4 below:

Figure 4: Current AI Use Cases



The second popular AI use function is in Networks and infrastructure, with 75% of operators who had already adopted AI confirming its use in network optimisation. Other use cases of AI were in product innovation as well as research and development, sales and marketing, finance, security as well as risk management. Operators were asked to specify the AI technologies in use per function and the feedback is shown in Table 1 below:

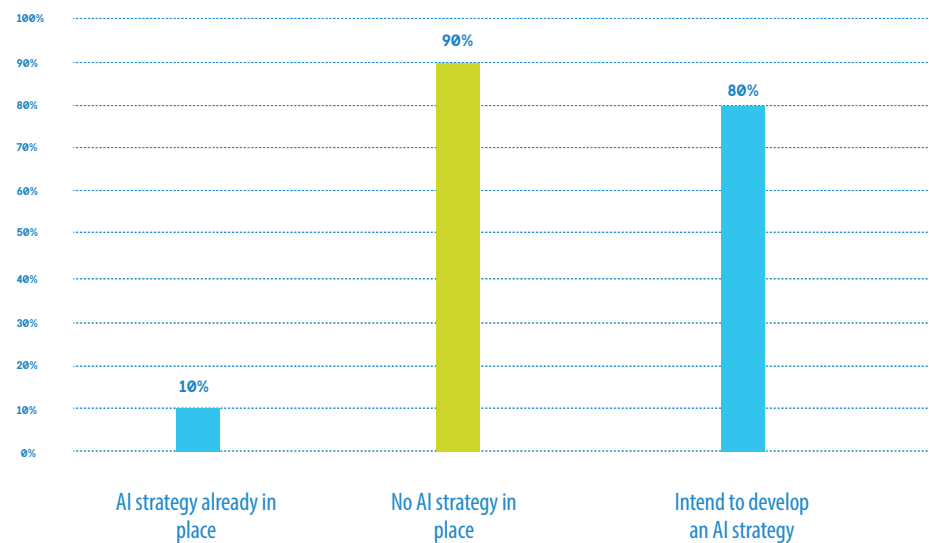
Table 1: AI Technologies per Function

| Function                                     | Ai Technologies Applied                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Networks And Infrastructure</b>           | <ul style="list-style-type: none"> <li>Group Artificial Intelligence Architecture Experience (GAIA-X) for 360-degree view of our customers' usage and Super App deployment</li> <li>Network Automation using ChatGPT Enterprise</li> <li>Bandwidth filtering and control algorithms</li> <li>ML Automated Management Systems</li> </ul> |
| <b>Finance</b>                               | <ul style="list-style-type: none"> <li>Machine Learning (ML) to analyse &amp; predict financial patterns as well as identify fraud.</li> </ul>                                                                                                                                                                                          |
| <b>Sales &amp; Marketing</b>                 | <ul style="list-style-type: none"> <li>Predictive Analysis technology through Churn Prediction Models.</li> <li>ML, NLP &amp; Recommender Systems:</li> </ul>                                                                                                                                                                           |
| <b>Security And Risk</b>                     | <ul style="list-style-type: none"> <li>Predictive Analysis technology through Anomaly detection model.</li> <li>Intrusion detection and prevention system using AI solutions such as Knowbe4 AI.</li> </ul>                                                                                                                             |
| <b>Customer Service</b>                      | <ul style="list-style-type: none"> <li>Natural Language Processing (NLP) technology through Chatbots &amp; Virtual Assistants</li> <li>Google Dialogflow</li> <li>Einstein GPT</li> </ul>                                                                                                                                               |
| <b>Product Innovation As Well As R&amp;D</b> | <ul style="list-style-type: none"> <li>Machine Learning Algorithms &amp; Recommender Systems</li> <li>AI Algorithms in Recommendation Engine, Business Intelligence Platforms &amp; Device Offers</li> <li>CoPilot</li> <li>ChatGPT Enterprise</li> </ul>                                                                               |

## 2.4 AVAILABILITY OF AI STRATEGIES

The existence of an AI strategy shows intent and signifies the importance that an organisation places on AI. The proportion of organisations that had existing AI strategic plans/blueprints was low, with only 10% of the operators confirming that they had holistic AI strategies in place. This represented one operator, Econet. The feedback from operators is shown in Figure 5:

Figure 5: AI Strategies

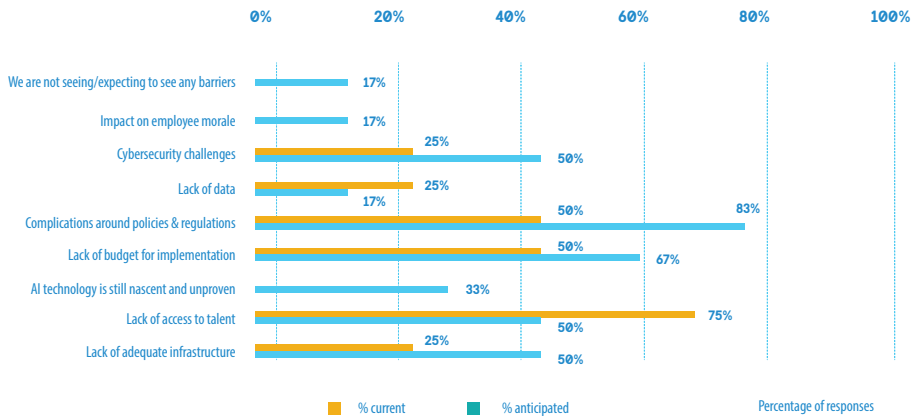


As shown above, 80% of those organisations without AI strategies had plans to develop and implement AI strategies in the future. Developing a strategic approach is vital for organizations looking to adopt AI technologies effectively.

## 2.5 BARRIERS TO AI ADOPTION & USE

Telecommunicated operators were asked to cite the current barriers they were facing in the adoption and implementation of AI as well as anticipated barriers for those who were still in the planning state. The feedback is shown in Figure 6 below:

Figure 6: Barriers to AI Adoption & Use



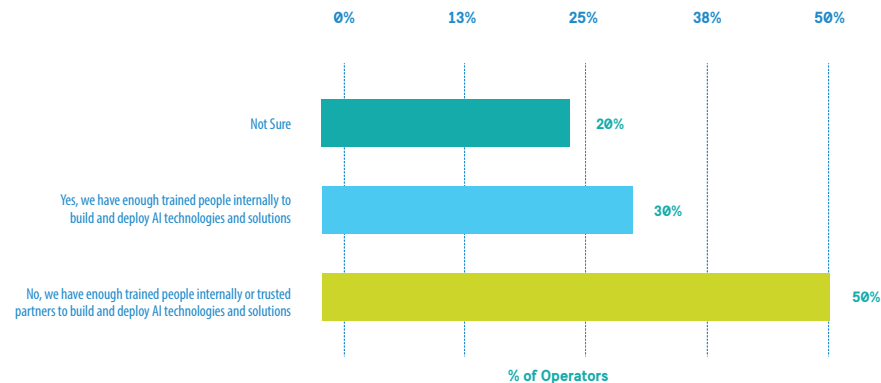
The most cited barriers were ‘complications around policies & regulations,’ ‘lack of talent,’ budgetary as well as infrastructure constraints. Organizations that identified policy and regulation as a barrier to AI adoption highlighted specific perceived hindrances which were summarised as follows:

- High taxation: “We cannot access high computing capacity; it is capital intensive and if we are subject to high customs duties if we import.”
- The Pacing Problem: “Most regulatory bodies and Governments are currently drafting Policies and Bills that govern AI for good, Data Access and Privacy. This has not been the case in Zimbabwe. We are willing to join task forces working on the drafting and adoption of such policies so that we can expedite AI-driven automations”.
- Promulgation of the Cyber & Data Protection Act (Chapter 12:07): “A key consideration for organisations with respect to AI and the Cyber & Data Protection Act (Chapter 12:07) is the issue of automated decision-making and automated processing of data. There is need for guidelines to provide regulatory clarity on AI systems with respect to data protection”.

## 2.6 AVAILABILITY OF SKILLED HUMAN CAPITAL

Difficulty in accessing the right skills is one of the major barriers to AI adoption in many markets, even for early adopters. This was also confirmed by the local telecommunications operators. Telecommunications operators were asked whether they had skilled personnel to effectively use AI technologies to drive business outcomes. Only 30% of all telecommunications operators were affirmative that they had skilled personal to build and deploy AI technologies and solutions; 50% confirmed that such skills were not immediately available as shown in Figure 7:

**Figure 7: Availability of Skilled Human Capital**

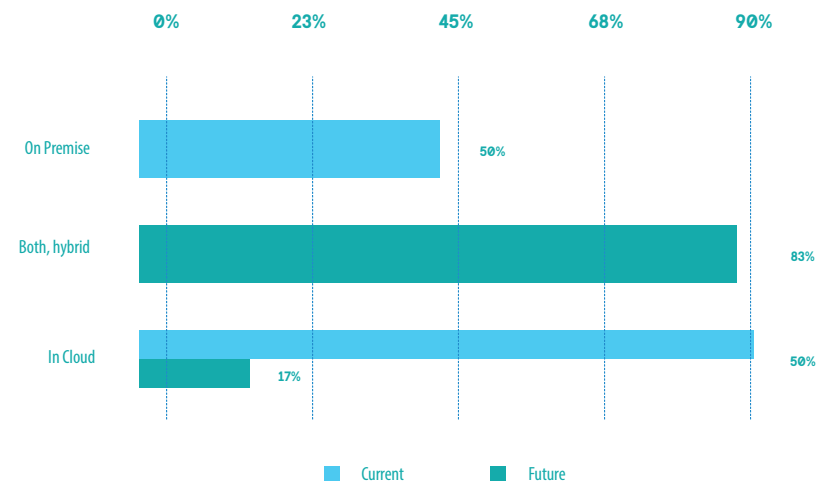


The survey also revealed that the majority telecommunications operators in Zimbabwe that have deployed AI mainly use external vendors and partners to help them deploy their solutions.

## 2.7 DEPLOYMENT ENVIRONMENT FOR AI WORKLOADS

The deployment environment for AI workloads was evenly distributed between the cloud platform and on premise and no organisation is currently implementing hybrid hosting. However, 83% of the operators revealed that planned future deployment environment is going to be a combination of both platforms (hybrid).

**Figure 8: AI Deployment Environment**

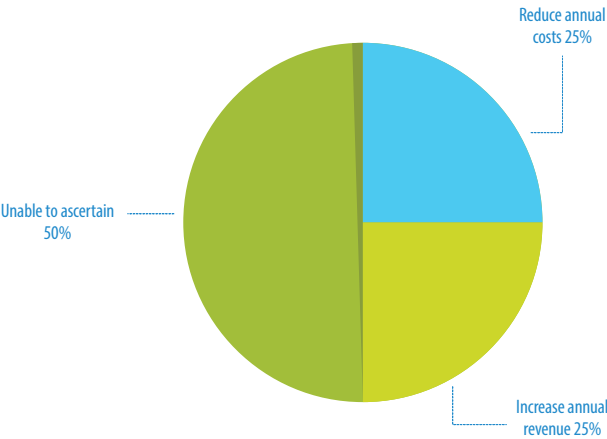


Benefits of hybrid AI deployment include data security, context and efficiency. With generative artificial intelligence (AI) poised to permeate virtually all types of consumer and enterprise applications, network architecture becomes increasingly important. If the goal is to use AI to quickly decide and effect an action, latency is a major consideration. And with increasingly performant end user devices, hybrid AI architectures that distribute AI workloads between centralized clouds, distributed edge clouds and the device itself bring several benefits.

## 2.8 ECONOMIC IMPACT OF AI

The survey also sought to gauge the impact of AI experienced by organisations who were already using AI in some of their business functions. The feedback from the telecommunication service providers is shown in Figure 9 below:

Figure 9: Economic Impact of AI

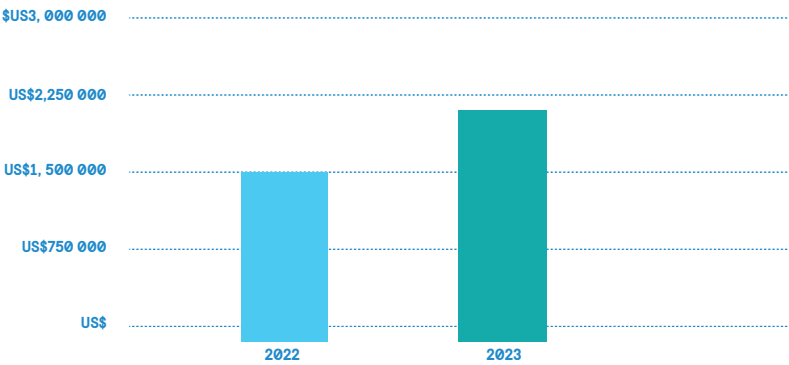


25% of respondents reported an annual increase in revenue due to AI adoption, concurrently another 25% reported an annual costs reduction. However, the majority (50%) of the organisations indicated that they could not ascertain the impact. This is attributable to the fact that use is still nascent, it is still in the short run, a long run assessment may be required

2.9 MONETARY INVESTMENT TOWARDS AI

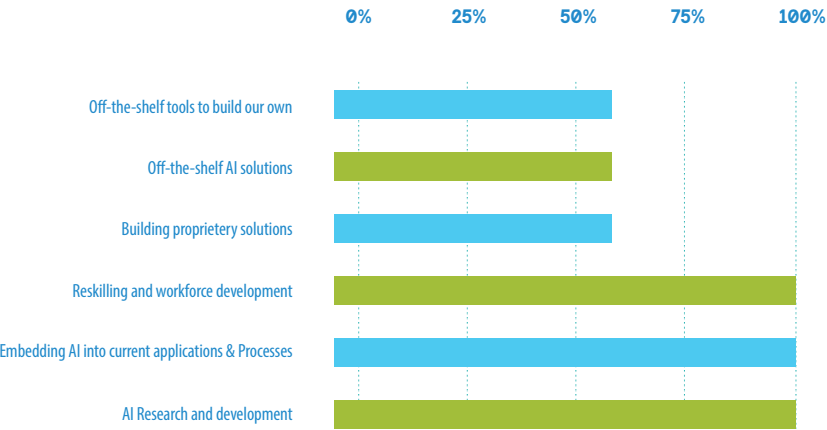
Telecommunications service providers invested at least USD1.9 million in AI solutions in 2022. Over 50% of this amount was attributable to Econet. The industry total rose to at least USD2.1 million in 2023.

Figure 10: Expenditure on AI



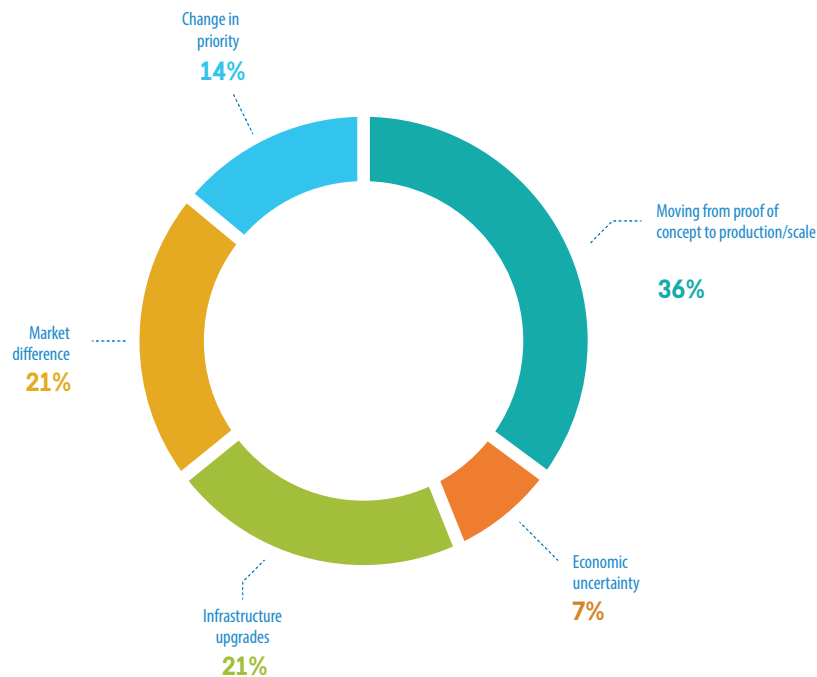
The investments are expected to have a more notable positive trajectory going forward because more operators indicated that they were planning to implement AI solutions in 2024. Furthermore 75% of the operators already using AI revealed that they will increase their AI expenditure in 2024. The 2024 AI expenditure plans are summarised in Figure 11 below:

Figure 11: Future AI Plans



The major areas of planned AI expenditure include “AI Research & Development”, “Embedding AI into current applications and processes” and “reskilling and workforce development”. The factors affecting 2024 AI expenditure decisions by the telecommunication operators are cited in Figure 12 below:

**Figure 12: Factors Affecting 2024 AI Expenditure Decisions**



Moving from proof of concept (POC) was noted as the main factor determining 2024 AI expenditure. Infrastructure upgrades and market differentiation at 22% and 21% respectively were the second and third major revealed factors determining 2024 AI expenditure by telecommunications operators.

## 2.10 REGULATORY SUPPORT

Telecommunication operators were also given the opportunity to air their opinions on the regulatory action, if any, necessary to drive AI adoption and use. The overall sentiments of the operators were that POTRAZ had a critical role to play in fostering an enabling environment for the uptake of emerging technologies such as AI. Operators highlighted several specific areas where POTRAZ could act, including:

- Developing AI guidelines or policies: The authority could start engagements to discuss the drafting and adoption of AI and data governance policies in the Zimbabwean context. Such policies could govern the access, retrieval, manipulation, and use of data for AI-driven automations.
- Ensuring data protection and privacy: ensuring that there are regulations are enforced to protect the privacy of individuals' data and to prevent the misuse of AI.
- Collaborating and fostering information exchange: organizing cross-sector symposiums and conferences to facilitate information exchange on AI. This would help to raise awareness of AI and to promote the responsible development and use of AI in Zimbabwe.
- Testing AI solutions: POTRAZ should lead AI discussions by also testing and advising on responsible AI solutions that have been vetted for security and reliability. This would help organizations to choose safe and effective AI solutions.
- Developing conformity assessment guidelines: developing conformity assessment guidelines for high-risk AI applications (e.g., those used in government or the civil service). This would help to ensure that such applications are developed and used in a responsible manner.
- Defining general obligations for providers and users: This would help to create a more transparent and accountable AI ecosystem.
- Creating an enforcement and governance structure for AI systems: This would help to ensure that AI systems are used in a responsible and ethical manner.

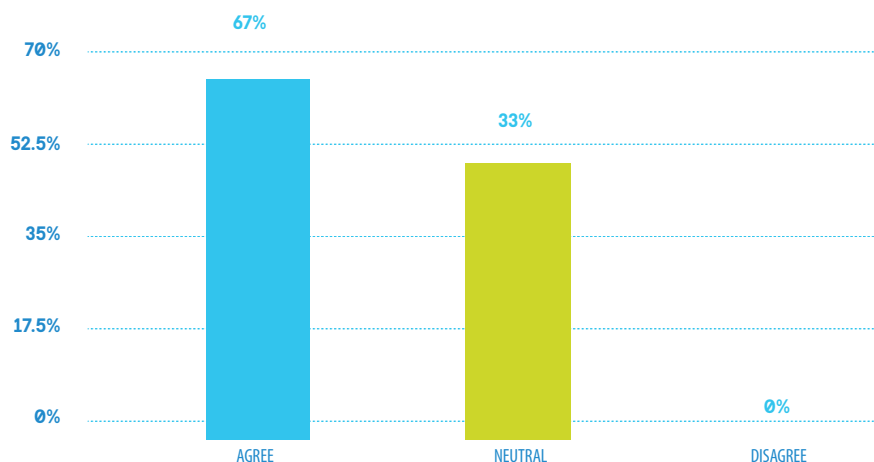
- Driving awareness of AI: POTRAZ could drive the awareness campaign of AI to ensure that it is acceptable to the environment.
- Fostering AI R&D: Investing in research and development to support the development of responsible AI solutions in Zimbabwe.

## 3. Research Findings: Postal & Courier

### 3.1 PERCEIVED IMPORTANCE OF AI

Unlike the telecommunications sector, where there was total agreement by service providers on the importance of AI for sector growth, postal and courier players were not in total agreement as shown in Figure 13 below:

Figure 13: Perceived Importance of AI



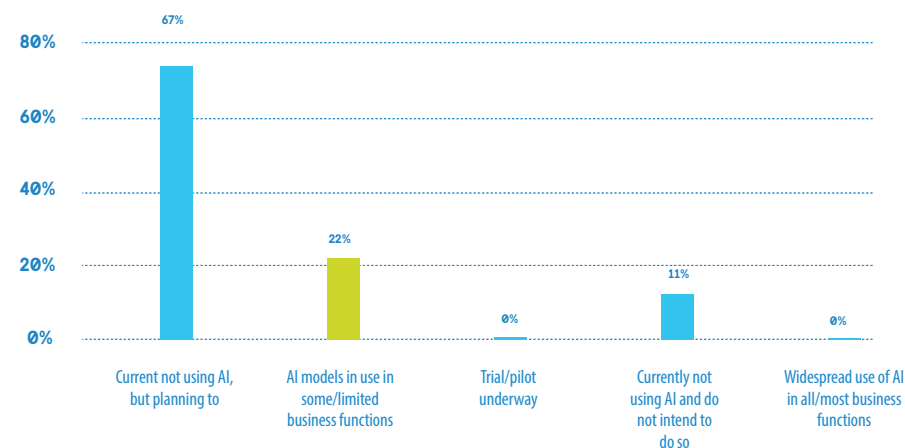
### Q: Do you believe that the adoption of Artificial Intelligence is key to growth of the sector?

Although none disagreed, a considerable 33% were neutral as shown in Figure 13 above. However, evidence from other economies has clearly demonstrated the role of AI technologies in reshaping and growing the postal and courier business.

### 3.2 AI ADOPTION LEVELS

The study assessed the AI adoption levels by the postal and courier service providers. The results show that adoption level by postal and courier operators was lower than that for telecommunications operators as shown in Figure 14:

Figure 14: AI Adoption Level for Postal & Courier Operators



### Q: Currently, at what level is your organisation using AI?

Only two (2) courier operators had AI models already in use in some business functions. One (1) operator indicated they had no intentions to use AI as they did not see any strategic advantage. On the other hand, eight (8) postal and courier players indicated that although they were yet to be AI users, they had plans to do so in future; nevertheless, they had no anticipated adoption timeframe. This implies that postal and courier operators did not view AI adoption and use as an urgent matter.

### 3.3 CURRENT USE CASES

The survey sought to determine the current use functions of AI in organisations who had already adopted AI. As mentioned earlier, only two postal and courier operators were using AI solutions in some business functions. The main uses of AI by these courier operators were in the following functions:

- Supply chain and operations: “scanning of proof of deliveries, fleet management and automated processing of courier”.
- Sales & Marketing: “Algorithms to track social media trends and mentions”.

The use of AI solutions by postal and courier operators was evidently not as extensive when compared to telecommunications service providers.

### 3.4 BARRIERS TO AI ADOPTION & USE

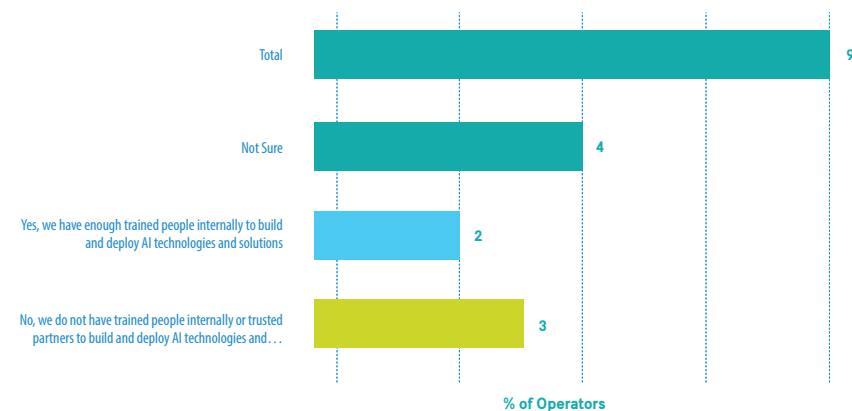
Postal and courier operators were asked to cite the current barriers they were facing in the adoption and implementation of AI as well as anticipated barriers for those who were still in the planning stage. The cited barriers include:

- Financial constraints
- Lack of data (training models & algorithms)
- Lack of adequate infrastructure
- Weak business case for AI technologies
- Policy and Regulatory challenges
- Cybersecurity challenges

### 3.5 AVAILABILITY OF SKILLED HUMAN CAPITAL

The postal and courier service providers were also asked whether they had skilled personnel to effectively use AI technologies to drive business outcomes. The feedback by postal and courier operators was similar to the feedback from telecommunications operators as shown in Figure 15 below:

Figure 15: Availability of Skilled Human Capital



Very few operators were affirmative that they have enough skilled human resources internally to build and deploy AI solutions. This points to the need for a holistic approach to address skills gaps.

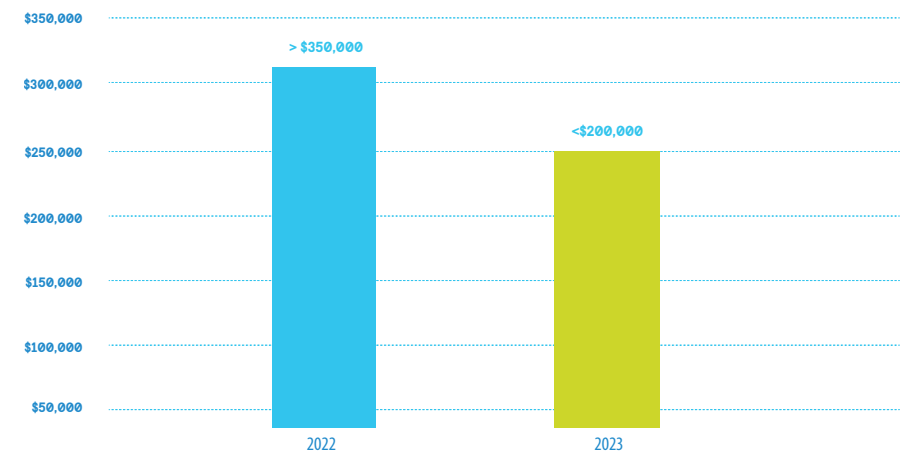
3.6 ECONOMIC IMPACT OF AI

The survey also sought to gauge the impact of AI experienced by organisations who were already using AI in some of their business functions. Both of the postal and courier operators who were using AI solutions in some business functions highlighted that they could not ascertain the impact that the technologies have had on their businesses. This is attributable to the fact that use is still nascent, it is still in the short run. As with the telecommunications sector, a long run assessment may be required to determine the financial impact of AI.

3.7 MONETARY INVESTMENT TOWARDS AI

The two postal and courier operators who are using AI solutions spent over USD350,000 on AI in 2022. However, this figure declined to less than USD200,000 in 2023 as shown in Figure 16 below:

Figure 16: Expenditure on AI



2024 AI expenditure by postal and courier operators is not expected to increase from 2023 levels as indicated by the operator responses.

3.8 REGULATORY SUPPORT

Postal and courier operators were also given the opportunity to air their opinions on the regulatory interventions, if any, necessary to drive AI adoption and use. As with telecommunications operators, the general sentiments of the postal and courier operators were that POTRAZ had a critical role to play in fostering an enabling environment for as AI and other emerging technologies. Operators highlighted several proposed areas of intervention by POTRAZ such as:

- Ensuring affordability and reliability of the Internet, as it is a driver and determinant of effective of AI adoption.
- Develop a policy framework that promotes use of AI and budget support.
- Vetting and testing of AI models
- Lobbying for fiscal support for AI and other emerging technologies.
- “Slackening” of regulatory red tape that might cause delays in adopting AI.
- Taking the lead in developing knowledge on AI and raising awareness across all industries.

The input from postal and courier operators on the regulatory support necessary to drive AI adoption was similar to the input from telecommunications operators. POTRAZ has a critical role to play; as with all emerging technologies, the regulator should lead dialogue, share knowledge, raise awareness at the same safeguard the interests of the sector players and consumers.

## 4. Conclusion & Recommendations

The report brings to light the low AI adoption levels by players in the postal and telecommunications sector in Zimbabwe. The use and application of AI solutions is still nascent; the scale and scope are still limited. The players are largely consumers, they are yet to be actively involved in the development and production of AI solutions. Nevertheless operators, particularly in the telecommunications sector, are intent on strategically embracing AI as evidenced by the historical and planned capital expenditure on AI solutions. The following recommendations are made based on the study findings:

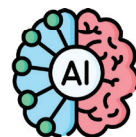


- **Establishment of a Multi-Stakeholder AI and or/Big Data Steering Committee**

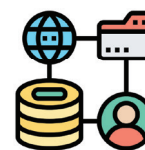
AI technology is not confined to a single sector. The AI ecosystem has multiple stakeholders- private sector, research, government, legal bodies, regulators, standard setting bodies, etc. The regulatory principles are expected to serve these stakeholders of the AI ecosystem. This makes consultation with the various stakeholders in the ecosystem, on various aspects of AI very pertinent. Therefore, there should be an organised platform for elaborate consultation with all the concerned stakeholders before formulation of any guidelines, strategy, or policy. For synergy and coordination, the Ministry of ICT, Postal & Courier Services and POTRAZ should take the lead role as the administrative ministry for AI and administrative agency for AI respectively.

- **Facilitate the Availability of Data for AI**

AI and other 5G based technologies require big data. Data is essential for adoption of AI as data is the basis for training and validation of AI models. Further-



more, for developing indigenous AI use cases and applications, the digitalization and sharing of available data with cross-sector government departments, government agencies and private sector is critical. However, there is currently a lack of access to open data. There is need for a data governance framework that ensures the availability of non-personal data and anonymized data from both Government and Private entities that is safely accessible by the technology, research and innovation eco-systems, with due regard to applicable laws. Other countries have implemented such initiatives e.g., The Open Data Initiative of India.



- **Implement a light-touch regulatory framework for the development and use of responsible Artificial Intelligence (AI)**

There is need to adopt a light-touch regulatory framework that should be applicable across sectors. The regulatory framework should ensure that specific AI use cases are regulated on a risk-based framework, where high risk use cases are regulated through legally binding obligations. The principle is to regulate only where necessary and to implement the sandbox approach so as not to stifle innovation. The broad tenets of the suggested regulatory framework should comprise of:

- ✓ A Multi Stakeholder committee as highlighted earlier.
- ✓ Defining principles of responsible AI and their applicability on AI use cases based on risk assessment.
- ✓ Ensuring that principles of responsible AI are made applicable at each phase of AI framework lifecycle e.g., design, development, validation, deployment, monitoring and refinement.
- ✓ Developing model AI Governance Framework to guide organizations on deploying AI in a responsible manner.

- ✓ Developing model Ethical Codes for adoption by public and private entities in different sectors.
- ✓ Implementing regulatory sandboxes for testing AI based solutions.
- ✓ Creating public/institutional awareness for responsible use of AI.
- ✓ Sharing of best practices deployed across sectors for use of responsible AI.



- **Focus on AI centred Research, Innovation & Skills Development**

The study revealed that Zimbabwean postal and telecommunications players are only consumers of AI, they are yet to be actively involved in developing AI solutions. To promote development and use of locally grown solutions, innovation and skills development should be prioritised. More Acceleration Centres and Centres of Excellence should be established to enable educational institutions, startups, innovators, researchers and other public/private entities to develop and demonstrate technological capabilities. Collaboration between industry and the academia should be cultured to facilitate the designing and upgrading of technology related curriculum to meet the emerging critical skill-sets.

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