



AI and Data Analytics Transforming Veterinary Sector

Ruchi Sharma**International Institute of Veterinary and Education Research, Rohtak-124001, Haryana, India****Corresponding Author:** Ruchi Sharma, International Institute of Veterinary and Education Research, Rohtak-124001, Haryana, India.**DOI:** 10.31080/ASVS.2024.06.0883**Received:** April 29, 2024**Published:** June 01, 2024© All rights are reserved by **Ruchi Sharma**.

The vast market size of the veterinary sector across the globe, encompassing pharmaceutical industries, veterinary hospitals and clinics, disease diagnostics, animal products, and the food industry, continues to grow at a progressive pace. As per the report of Mordor Intelligence, the total valuation of the global veterinary service market in 2024 stood at USD 122.7 billion and is expected to grow by 4.90 per cent CAGR during 2024-29 [7]. The veterinary healthcare market is projected to grow by a CAGR of 6.83 per cent from USD 58.30 billion in 2024 to USD 85.14 billion by 2029 [7]. The factors deriving this growth can be attributed to the increased pet population in urban regions, the increased prevalence of disease outbreaks, and growing sentiments towards animal welfare and insurance. Despite this upward trend, the veterinary services and healthcare sector lacks the competence to meet the sustainable production and growing demand of the general population. According to Weave's Report 2023, in the last five years, the veterinary service market has become highly competitive, which makes it difficult for small practitioners to generate profit and add to their customer base [5]. However, the aforementioned challenges can be tackled by employing AI and data analytics software in regular practice.

In this digitally globalized society, where the widespread reach of the internet to the general population and the adoption of artificial intelligence (AI) and information technology (IT) have influenced every sector of society, the veterinary sector has made no exception. For many big companies, to improve their customer experiences in order to increase their customer base, analyze and predict future trends, and expedite the disease diagnosis process followed by treatment and control at an early stage; AI and data analytics have proven to be a game changer. Before we dive further into the topic, it becomes necessary to understand that AI and IT are two different concepts. While AI involves creating autonomous intelligence systems to carry out tasks similar to humans but at a faster rate, IT deals with data analytics *i.e.*, collecting, processing, and analyzing Big Data which is being created every second and everywhere.

Big Data and analytics help veterinarians by providing data insights accumulated from various resources to identify patterns of clinical symptoms and referring to previous medications prescribed in similar cases. Veterinary practitioners use Veterinary Practice Management Software (VPMS) to inform their customers about follow-up or vaccination schedules *via* SMS or pop-up notifications. The veterinary healthcare industry is transforming by employing AI and data analytics to streamline multiple processes to save time, hasten decision-making, and monitor fraud activities in the system. The increasing investments in research and development, in areas like diagnostics and data analysis, help researchers explore more ways to develop high-precision disease diagnostic tools and find cures for rare diseases. Digital technologies help farmers monitor animal health status by detecting early signs of illness like changes in body temperature, cough, and deflection in the level of activity from normal *etc.* Various digital devices like smart collars, ear tag sensors, and thermal imaging sensors help detect and record fluctuations in body temperature, and pulse rate, and to track animal movements, *etc.* [1]. AI and data analytics have already been adopted and advanced in many developed countries, while some developing countries in Asia are catching up with the pace. In Switzerland, approximately 47 per cent of poultry farmers are using smartphones to monitor chickens on the farm [6]. About 30 per cent of the farmers in Scotland use electronic identification (EID) tools, and 13 per cent use surveillance cameras for farm management [2].

According to the Market Analysis Report by Grand View Research, the overall market value of AI in the animal healthcare sector is expected to grow at a CAGR of 19.1 per cent from USD 1108 million in 2023 to USD 3.76 billion in 2030 [3]. The contribution of AI to the global revenue share from the animal healthcare sector has been highest for North America, *i.e.*, 35 per cent, followed by the Asia Pacific region, which is expected to grow at 21 per cent from 2023 to 2030 [3]. Although security breaches and data privacy remain some of the predominant concerns in adapting digital technologies, modern infrastructure tools provide opportunities to develop further in this field and overcome these challenges. The future of AI

and data analytics in the veterinary sector seems very promising and more veterinarians should tap into it to promote “One Health” and sustainable production.

Bibliography

1. Digital Revolution in Animal Health Report. How Predictive, Monitoring and Diagnostics Technologies are Enabling Tailored Care and Better Welfare for Animals”. *Health for Animals*. Digital Revolution in Animal Health – Health for Animals.
2. Liu Jiayi., *et al.* “Farmers’ Uptake of Animal Health and Welfare Technological Innovations. Implications for Animal Health Policies”. *Frontiers in Veterinary Science* 6 (2019).
3. Market Analysis Report. “Artificial Intelligence (AI) In Animal Health Market Size, Share and Trends Analysis Report By Solutions, By Application (Diagnostics, Identification, Tracking and Monitoring), By Animal Type, By Region, And Segment Forecasts, 2023-2030”. *Grand View Research* (2022).
4. The 2023 Veterinary Business Insights Report. Weave (2023).
5. T Groher., *et al.* “Digital technology adoption in livestock production with a special focus on ruminant farming. *Cambridge University Press* (2020).
6. Veterinary Industry Size and Share Analysis - Growth Trends & Forecasts (2024 - 2029). (2022). *Mordor Intelligence*.