# Chapter 13
# Redefining IoT and AI Transformations in Livestock Farming:
## Pitch the Vision for Innovative Solutions

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## ABSTRACT

*IoT and AI technologies continue to rapidly develop and change the way many industries, including agriculture, veterinary and fishery operate. Agriculture has also incorporated several technologies such as robotics, nanotechnology, synthetic protein and gene editing in its traditional farming system. The technology mash-up holds essential value in increasing efficiency and driving to a more sustainable, ecological agriculture. As the world continues to enter into this time, it is also becoming clear that new solutions have turned up bringing a revolution with AI and IOT in Livestock Management by giving a fresh way of facing these problems which then already faced for decades. This chapter provides an overview of the broad space orchids land with examples of livestock farming solutions for IoT and AI transformations.*

## 1. INTRODUCTION

With the need to tackle issues such as productivity, animal wellbeing and environmental impact the industry is beginning to look at digital phenotyping. On the base of a few techniques used in broiler genomics, this technology will show how one can save time and effort by converting physical objects into their digital representation for research purposes as well practical application to bring production changes & health monitoring which change agriculture (Neethirajan et al. E-agriculture as a concept, more so in countries such as India with fast growing economic landscape is within the crux of tech

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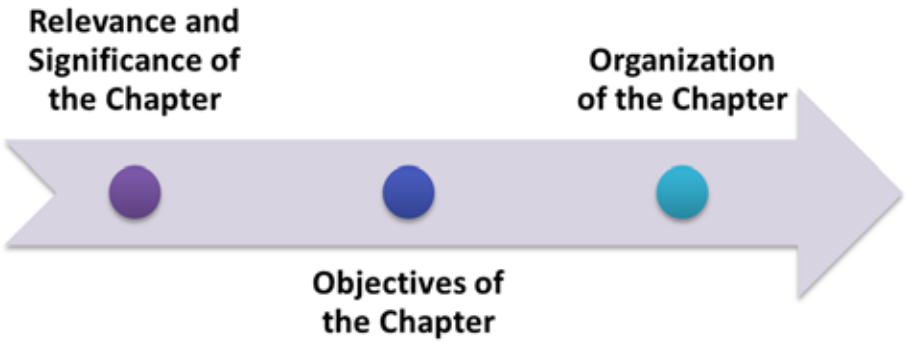
meeting traditional farming. IoT reveals its revolutionary focus on utilizing mobile technology and the internet in agriculture. In turn, this integration also facilitates the expansion of agricultural functionality through new farming practices and government intervention which provides a more inclusive system in agriculture with analytics (Pachiappan et al., 2024).

Big data and smart farming as its impact that beyond primary production, Big Data is changing the entire food supply chain, impacting operational decisions and enabling new business models to flourish. This change underlines the move of different sectors in agriculture including tech corporations and start-ups as well as farmers themselves. Farmers can remotely monitor their animals in real time using state-of-the-art IoT and AI that keep track sheep deploy the time with health information (Gyamfi et al., 204). The remote access enables farmers to monitor their animals from anywhere, which is a benefit when managing large fields or animal facilities. The process like irrigation, pest control, and fertilization can be done more fastly by proper management under remote monitoring (Mohanty et al., 2024). By implementing IoT and AI technology in the agriculture industry, farmers can track husbandry on a more granular level than ever before. Wearable animal devices with smart sensors can provide real-time data on the health, activity and feeding of animals. Using AI to process this data, we can pull out early signs of illness and disease with almost live feeding regime tailored for optimal health. In some instances, this highlights the tech-specific ways that technology could lead to more sustainable or ethical views of food production through managing animal welfare with tailored applications (Qossin et al., 2024) across all of agriculture and in livestock management. This serves as important information for policymakers, agricultural stakeholders and technology developers to understand their implications. The findings of this study provide insights on how conducive regulatory frameworks could be developed for a responsible adoption of IoT and AI in agriculture. Farmers and stakeholders can also benefit with practical implications, challenges posed by inclusion of these technologies on field. Introduction Edge Computing Preliminaries in Agriculture Chapter Structure and Roadmap ConclusionsClosing Remarks About the Author Accordingly, a more skilled and sustainable livestock production practice enhances output in addition to animal welfare (De Abreu & van Deventer, 2022).

*Figure 1. shows the Landscape of Introduction Split Sections*

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