Chapter 16
Implication of Predictive Maintenance for Industrial Marketing:
A Case Study From the Air Compressor Industry

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ABSTRACT

This chapter discusses the implication of predictive maintenance (PM) for industrial marketing companies. Using an illustrative case study from the Indian industrial air compressor market, it shows that predictive maintenance solutions will change the way of conventional sales and marketing. Sellers need to focus on early innovation adopters among its customers. They also need to engage with existing customers early on in the purchase process and highlight how PM can reduce the total cost of ownership. PM can be sold effectively to different types of customers- transactional, value-oriented, and collaborative. Industrial marketers have to position the solution appropriately to gain competitive advantage.

INTRODUCTION

Artificial Intelligence (AI), Machine Learning (ML) and Internet of Things (IoT) will transform the business world. Industrial Internet of Things (IIoT) is a significant subset of the IoT led transformation and explores the industrial application of IoT. Today, there is no doubt about this transformation, often captured by the term Industry 4.0. The IIoT market is estimated at USD 110.7 billion by 2025 (Statista, 2020). While at a conceptual level the defining role of technology is easy to understand, implementation issues are yet to be fully appreciated and understood. Implementation has both geographical and sectoral connotation. IIoT implementation is particularly challenging in developing countries like India where the diversity of the industrial landscape makes it difficult to envision a single roadmap for tech-

nological innovation and adoption. At a functional level, how will Industrial Internet of Things affect strategy, finance, operations, human resource and marketing departments of companies? The business as usual scenario will change and all such changes will not be positive. However, understanding the functional implications of IIoT can provide the top management with strategic insights for managing radical changes in the shop floor.

This paper discusses predictive maintenance and its implication for industrial marketing practice. Predictive maintenance (PM) solution and technique are used to predict the servicing requirement of running equipments. PM helps in accurate and timely maintenance that not only saves money for companies but also increases the working life of equipments. The innovations in IIoT have led to a strong growth to the PM market. It is expected to grow three times to $12.3 billion by 2025 (MarketsandMarkets, 2020). While the promise of PM is alluring, there are significant challenges and costs for companies implementing such solutions. The challenge of developing and marketing a PM solution is not only about R&D and budgets but also re-organization and managing customer mind-set. The author discusses the implication of PM for industrial marketing using the case of Elgi Equipments Limited, one of the largest air compressor manufacturers in the world. While Elgi was successful in implementing a PM based solution for customers, several challenges emerged in relation to diffusion of innovation, customer relationship management and organizational procurement process. The findings of the study show that innovation of IIoT will change industrial marketing both from the seller and buyer perspective.

BACKGROUND

In any industry, maintenance plays a key role in ensuring trouble free factory/equipment operation leading to higher productivity and profitability (Lopes et al, 2020). Maintenance cost is a major portion of factory operating cost and has been going up due to increase in labour costs. Thus it is important to have an effective maintenance management system in factories. Machine breakdown has several implications like stalled production, damage to connected systems, loss of productive man power, all leading to lesser revenue and lower customer satisfaction. In several industries like railways or airlines, maintenance is also directly related to safety of human lives. Equipment maintenance involves monitoring their condition and taking steps to ensure their continuous operation.

Maintenance can be divided into three types- *reactive, preventive and predictive*. The traditional approach has been reactive- to undertake servicing or repair as and when required. This approach is based on the decision of individuals and often not backed by data analysis. It relies on human monitoring and prone to errors, often leading to unscheduled downtime and loss in factory operations. Reactive maintenance leads to high inventory, high labour overtime costs, high machine downtime and lower production.

The advent of technology allowed better data collection and analysis techniques that allowed managers a more granular understanding of equipment health history and plan for preventive maintenance (Bousdekis et al, 2019). Preventive maintenance gained ground with better understanding of machine running and what causes routine failures. Basic preventive tasks like inspection, lubrication and machine alignment checking are done to prevent avoidable failures. Preventive maintenance is task or time based e.g. lubricating engine parts every month and based on statistical and historical analysis. While better than reactive maintenance, preventive maintenance is inefficient as actions are often not optimized for each equipment but rather for the whole facility. For example, in a factory, a pump may require inspec-

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