Chapter 1
Foundations of the Internet of Behavior

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ABSTRACT

The Internet of Behavior (IoB) is a research subject that seeks to examine human behavior data on the Internet through the lens of behavioral psychology, gain insights into human behavior, and better comprehend the intention behind the conduct. In today's rapidly expanding world, the Internet of Things plays an increasingly important role. The data gathered by IoT devices contains useful information on users' behavior, interests, and preferences. This has paved the door for a new type of technology.

I. INTRODUCTION

The Internet of Things, behavioral science, and data analytics are utilized to gather information on individual behavior and cognitive tendencies. This data is then processed to discover behavioral insights, which are used for a number of goals, including improving marketing campaigns and patient monitoring. The Internet of Things (IoT) is a field that combines several elements, including the Internet, sensors, and processors, to create a system capable of processing data received from nodal devices to monitor and regulate an environment. With billions of IoT devices being

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deployed throughout the world, there is certainly no shortage of data. However, the large volume of data created by the IoT devices was not being effectively managed (Patel & Doshi, 2022). IoB utilizes big data analytics, AI, and IoT to analyze and interpret behavioral data, providing insights into consumer preferences, habits, and decision-making processes both online and offline (Patel & Doshi, 2022).

Figure 1. **Internet of Behavior**

The Internet of Behavior is a concept that brings together data analysis, behavioral analysis, technology, and human psychology. This combination allows the system to foresee human behavior, gain insights from available data, and even influence human behavior based on actions and interests obtained through interactions. Organizations aiming to sell items or services can influence behavior by curating customized material based on an individual's interests and interactions (Altuna, Martínez-de-Morentin, & Lareki, 2020).

IoB technology faces three primary obstacles:

1. Regulations:

Data privacy has become a significant political issue in many countries, particularly following major data breaches by platforms such as Facebook, Yahoo, and LinkedIn. Companies will need to develop IoB devices and systems that comply with regulations in various countries. An IoB system may even need to restrict some functionality in regions where data collection is limited (Embarak, 2022).

2. Value:

Consumers demand better products, exceptional customer experiences, and an improved lifestyle in exchange for their personal data. Since IoB data can include particularly sensitive information, the value provided to customers must outweigh the risks (Embarak, 2022).