**Use of Informatics and Data Analytics in Retail**

Tracy Harvey

IS415 – Informatics & Analytics

Olympic College

There are many ways that businesses in the retail industry could use Informatics and analytics to improve their businesses. In fact they are implementing some of these processes right now in their business model. Lets take a look at what could be done and possibly what companies are already doing to leverage big data to work for them.

The first couple of ways that a retail business could use analytics to improve their business would be for optimization of their supply chain and for inventory management. By, using Artificial Intelligence (AI) and Machine Learning (ML) to forecast demand by using predictive analytics to accurately predict customer demand which would limit the amount of times the retailer is out of stock on something and on the flip side of that minimize the instances where they have excess inventory due to something not selling well. AI and ML could use Informatics to identify suppliers that have a high performance history to build a large strategic supply network so that getting products to their customers is as streamlined as possible.

In inventory management analytics could be used keep track of your stock in real time and then manage the purchasing of new stock or moving of existing stock to fill in for the purchased products, again, to manage over or under stock situations. An article on ciodive.com named How Walmart enhances its inventory, supply chain through AI states “AI and ML based predictions help the company balance its network, placing inventory in the right location and at the right time as shoppers pack their physical or digital shopping carts” (*How Walmart Enhances Its Inventory, Supply Chain through AI*, n.d.). These AI and ML models that Walmart is employing use both informatics and analytics to analyze the behavior of customers, such as the customer’s preferences and purchasing patterns to make extremely accurate predictions for not only what customers will purchase but what stores they are likely to purchase them from so that, as stated above, the inventory can be where the inventory is needed, when it is needed.

The Walmart article brought up another good point where informatics and analytics can be extremely useful to retail companies, customer insight. Customer insight is a combination of behavioral analytics such as preferences and demographics and the use of informatics to establish a history of purchasing patterns to better allow the AI and ML models to predict when and where customers are likely to purchase items and more importantly what those items are likely to be. These predictions are extremely useful and can be used in a variety of different ways. For instance, if your analysis finds that a certain store has a customer base that is predominantly of say an elderly demographic that store is likely to sell things that the elderly are likely to need at a faster rate so the business would be able to adjust that store’s inventory and product stock purchases accordingly.

In conclusion, the use of informatics and analytics in the retail industry provides a lot of opportunities for retail businesses to better their operations and customer satisfaction. Businesses that harness these tools effectively are very likely to gain the competitive edge through optimizing their supply chains, improving their inventory management systems, and offering tailored product choices to their customer base. As the landscape in the retail markets continues to change and evolve informatics and analytics will become more and more important tools if businesses want to flourish and grow.

**References**

***How Walmart enhances its inventory, supply chain through AI*. (n.d.). CIO Dive. Retrieved January 10, 2024, from** [**https://www.ciodive.com/news/walmart-AI-ML-retail/638582/**](https://www.ciodive.com/news/walmart-AI-ML-retail/638582/)