The supply chain collaborative inventory management model in the context of big data proposed in this article is mainly to solve the "bullwhip effect" caused by information asymmetry in China's supply chain inventory management mentioned in the previous article, which causes the inventory of each participant in the supply chain a large backlog and a waste of resources in the overall supply chain. The article chooses the most representative fast-moving consumer goods industry with the "bullwhip effect"—the beer industry as an example to construct and analyze the later model. The model conforms to the ordering characteristics of most Chinese consumer industries. In order to simplify the model, the author mainly sets three supply chain units: manufacturers, wholesalers and retailers[1]. A statistical prediction unit based on collaborative big data logistics and its direct relationship of each link is: in the whole supply chain, collaborative data platform units based on big data is directly influenced by past consumption.
data to predict product[2], manufacturers’ production capacity and distribution transport capacity are affected by information flow provided by collaborative platform, and at the same time, actual information demand by beer wholesalers and retailers is the gist for producers to adjust and improve. By the same token, the wholesalers zero bound inventory is also affected by collaborative platform information flow. Retailer’s inventory is also affected by the actual consumption. Each prediction unit on collaborative platform is affected by consumer information to different extent at the same time, according to the relationship of each link, drawing the cause-and-effect graph of beer industry supply chain based on big data as Figure 3 show:

According to the above cause-and-effect diagram, we can further get the system dynamics figure of beer industry collaborative supply chain based on big data, And simplify part of the simulation to make the model more compliant with specific operating conditions, we performed the following hypothesis.

References