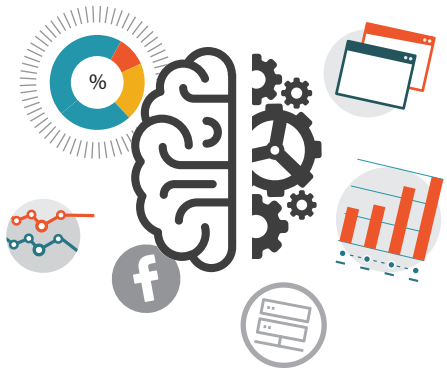
Inventory Distortion
Out of Stock Prevention

Inventory Distortion

In today's customer-driven business environment, it is imperative to have the right stock available in the right place, at the right time, and at the right price. Managing the best level of inventory in the DC as well as the store is a challenge retailers often face. Understocking can lead to lost sales opportunities. Worse, it can lose customers to your competitors. Not being able to identify trends means customers are less interested, and therefore aren't buying. If the sales aren't there, then shelves will be overstocked, which leads to heavy markdowns and missing gross margin targets! Most retailers today have several ways to engage the customer. An effective inventory management strategy ensures that engagement with customers – whether online or in store – is effective. Relying on real-time analytics to understand strategic and operational aspects as they happen means taking proactive steps to optimize business situations as they happen in real time. Informed decision-making becomes both predictive and prescriptive at that moment. Most retailers today have huge volumes of structured and unstructured transactional and operational data. With social media now an effective retailing tool and the growing influence of sensors and IoT data, the influx of data is huge. However, today's conventional systems are unable to handle the requirements of "big data" effectively. In spite of having "information" retailers don't have the "insights" needed to continually make the most of their businesses.

Industry Expectations

Today's retailer expects information systems to be cognitive: smart, intelligent and self-learning. For optimized decision-making, applications need a mindset that thinks about systems first. Systems must be able to look at the big picture to recommend the best strategy for that business situation, as a result of evaluating thousands of business-validated possibilities. The Industry requires an opportunity-driven model to ensure action is timely and makes the best of its business processes. Category management teams or store operations management teams need to be aware of opportunities well in advance so they can understand potential impacts to their business if these opportunities become a reality.



Additionally if the system could provide a business-validated strategy to preempt a potentially adverse situation, it would save potential revenue loss, gain a sales uplift or acquire a new customer. Business users would be notified if an adverse business situation arises that would require their immediate intervention in real time.

Diwo Introduction...

DIWO's cognitive solutions platform is based on a data analytics system for processing big data with built-in modules to handle data streaming, machine learning and graph processing. DIWO is able to integrate with a retailer's enterprise data solutions/ERP, data warehouse, and other downstream applications to glean insights from underlying data that can be acted upon. It can

integrate with third-party applications on weather, sentiment analysis, and syndicated data from industry. DIWO presents SEAL, an opportunity-driven business optimization methodology, to solve today's business problems. DIWO is a cognitive platform solution using the most advanced parallel processing technologies to aid smart decision-making. SEAL stands for:

SENSE

DIWO senses opportunities even before they arise, and presents them to the business team with details about the opportunity, the impact to revenue and the recommended strategy to address it.

EXPLORE

DIWO makes recommendations for the business opportunity it senses and allows the business user to optimize the strategy based on DIWO's deep insights and analytics.

ACT

DIWO provides a targeted action list to guide business teams as they implement the recommendations.

LEARN

DIWO assimilates learning from decisions and actions.

How DIWO can mitigate Out-of-Stock situations

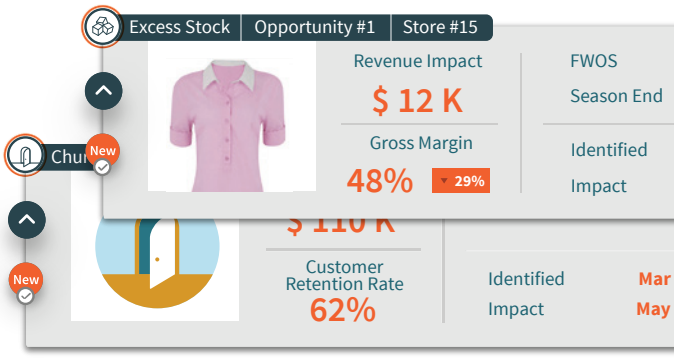
An industry study reveals an average Out-of-Stock (OOS) rate of eight per cent globally. In other words, one out of every 13 items that a customer wants to buy won't be on the shelf when they are ready to buy it. The odds of a shopper delaying a purchase after encountering an OOS is only 15 percent, (source: P&G reports); shoppers are much more likely to simply move to a different brand. Direct sales loss from such a rate of OOS is about four percent (source: P&G reports). But apart from lost sales, supply-chain operations costs, and ordering costs, there are other intangible costs such as customer satisfaction and brand perception, which can have a huge impact on the retailer's fortunes. Despite advanced systems, most retailers point out that not knowing about a possible OOS occurrence and lacking a solution to address it leads to maximum revenue losses. DIWO's opportunity-driven model succeeds at solving exactly this problem using DIWO SENSE. DIWO continuously monitors trends by analyzing the customer's basket in real time, as well as monitoring for the most vulnerable categories of SKUs that historically show an OOS tendency, in this way identifying the impact on products with high sell-through.

Based on its ability to view enterprise-wide inventory data in real time, DIWO is able to analyze and understand if the current sales trend could lead to running out of stock. With its advanced affinity analysis, it can easily identify affinity products and ensure that they are optimally stocked to support up-sell and cross-sell opportunities. DIWO's cognitive ability allows only the opportunities that have maximum revenue impact to surface. DIWO also records opportunities that were not brought to the forefront for the business user's reference. If required, these can be queued for further analysis. It is important to understand the time frame between when the opportunity emerges, and the actual financial impact for the opportunity presented. DIWO's advanced analytical engine determines potential revenue loss as well as revenue recovery, based on the DIWO-recommended strategy. DIWO presents empirical evidence of the opportunity based on historical data and advanced predictive machine-learning algorithms.

EXPLORE

DIWO EXPLORE runs tens of thousands of business strategy options and arrives at the most optimum strategy that the business user can implement to save revenue losses. As a part of this module, DIWO allows the business user to analyze the strategy, and present multiple insights and what-if analyses to understand the situation better. DIWO looks at multiple strategy combinations of inter-store transfer of required stock, expediting the DC order, and substituting or placing vendor orders. For each option, DIWO calculates the opportunity cost, as well as direct revenue impact of the action, identifying and recommending the best strategy. Once arriving at the decision, DIWO has already considered historical trends, current store trends, customers' interest in the product based on the social media analysis, and other industry syndicated data. The business user can visualize powerful and intuitive graphical analysis, and if inclined [required], easily tweak

them to manage parameters and customize the DIWO recommended strategy. Users can create and compare multiple strategies to decide the best way forward.

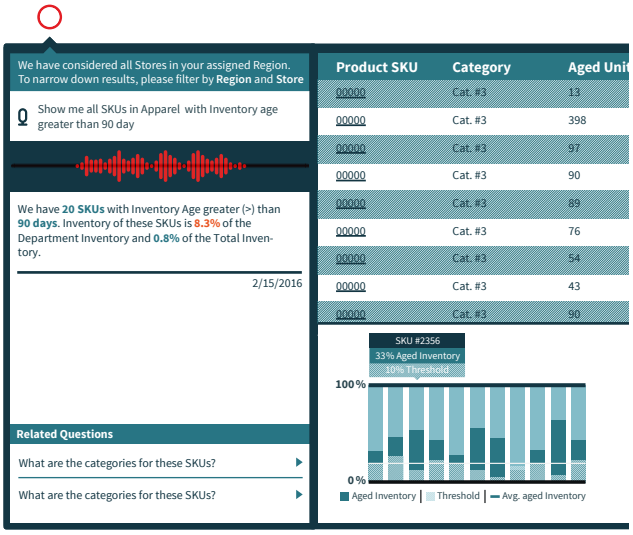


DIWO ASK

DIWO ASK is the most powerful engine, possessing the cognitive ability to interact with business users in a natural language. Simply ask questions related to:

- retail KPI metrics of sales;
- planned and forecasted sales;
- stock on hand;
- in-transit orders;
- open orders;
- sell-through percentage;
- stock-to-sales ratio;
- gross margin;
- GMROI;
- FWOS etc.

Users can have a conversation with DIWO in a question-and-answer mode and dig deeper into different areas. DIWO ASK can answer questions such as, “Will next week’s weather have an impact on sales in the Nashville store?”



DIWO ACT

DIWO ACT provides a practical list of actions to achieve the recommended strategy.

DIWO LEARN

DIWO LEARN is the cognitive strength of the system to assimilate what it learns from the opportunity and actions taken. With each step of the SEAL process, DIWO learns from recommendations and subsequent actions, based on machine learning. This 360-degree feedback is then considered when similar situations arise for Out-of-Stock (OOS) in the future. As a result, DIWO’s cognitive engine improves the ability to make decisions over a period of time, accurately predicting and providing recommendations that are practical and tested in the business domain.