

Efficiency Evaluation Follow-Up

Utah Department of Alcoholic Beverage
Services Inventory Management
Efficiency Evaluation

Office of the Legislative
Auditor General

Report to the UTAH LEGISLATURE





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June 18, 2024

TO: THE UTAH STATE LEGISLATURE

Transmitted herewith is our report:

“Efficiency Evaluation Follow Up: Utah Department of Alcoholic Beverage Services
Inventory Management Efficiency Evaluation” [Report #2024-09].

A summary is found at the front of the report. The background and status of
recommendations are included in the summary.

This report is a follow-up to the efficiency evaluation completed by the Office of the
Legislative Fiscal Analyst and the Governor’s Office of Planning and Budget.

We will be happy to meet with appropriate legislative committees, individual legislators,
and other state officials to discuss any item contained in the report in order to facilitate the
implementation of the recommendations.

Sincerely,

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EFFICIENCY EVALUATION FOLLOW-UP

▶ BACKGROUND

In July 2023, the Office of the Legislative Fiscal Analyst and the Governor’s Office of Planning and Budget released their collaborative report, *Inventory Management Efficiency Evaluation*.

The report found that by implementing industry best practices, DABS could save millions of dollars in waste annually, optimize the listing process, and enhance customer satisfaction.

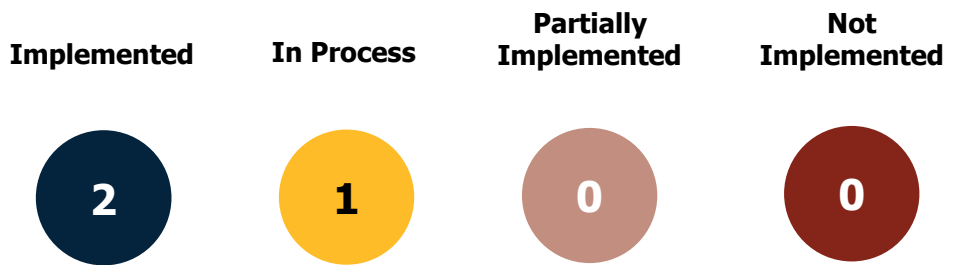
This follow-up report determines the implementation status of the three recommendations made in the evaluation. The status of the first recommendation is "in process," while two are "implemented." Due to the recency of changes, there is not enough data available to assess the impact changes have had on inventory volumes.

The Office of the Legislative Auditor General will follow up in six to twelve months to report on the status of the remaining recommendation and the impact these changes have had.

FOLLOW-UP: UTAH DEPARTMENT OF ALCOHOLIC BEVERAGE SERVICES INVENTORY MANAGEMENT EFFICIENCY EVALUATION



STATUS OF PREVIOUS RECOMMENDATIONS



RECOMMENDATIONS FROM THE INVENTORY MANAGEMENT EFFICIENCY EVALUATION

- Improve inventory management by adopting industry best practices.
- Create a structured listing and delisting process to ensure data-driven decision making.
- Evaluate performance and life cycle of listed products to be more agile in addressing need and demand.





Follow-Up: Utah Department of Alcoholic Beverage Services Inventory Management Efficiency Evaluation

In July 2023, the Office of the Legislative Fiscal Analyst and the Governor’s Office of Planning and Budget released the report titled *Inventory Management Efficiency Evaluation*. The evaluation report found that, “Good inventory management has the potential to save [the Department of Alcoholic Beverage Services (DABS)] millions of dollars in direct expenses, indirect expenses, and opportunity cost annually and provide agility in the listing and delisting process...”

According to the efficiency evaluation report, there were three recommendations to improve inventory practices, tackle barriers to effective listing, and delisting of products. DABS has made progress in implementing all three recommendations, though the impact of these changes has not yet been realized. This efficiency evaluation focuses on validation of the progress that has been made implementing recommendations. The Office of the Legislative Auditor General (OLAG) will continue to review DABS implementation until all recommendations are fully implemented; subsequent reports will evaluate the effects each recommendation has had on DABS. The next follow-up will occur in six to twelve months, with an additional evaluation reviewing the impact of the recommendations.

Inventory Management Practices Have Substantially Improved Since the Evaluation

The Department Should Monitor Its Forecasting Model and Refine as Necessary

● Efficiency Evaluation Recommendation 1: Improve inventory management by adopting industry best practices (in process).

In March 2024, DABS introduced an automated forecasting program utilizing online software. The software selects a model to use in generating an automated forecast for each item. As of March 2024, DABS only has about sixteen months of historical data, but it will become more accurate over time. Eventually, historic forecasts will also be used to improve the model by looking at previous error rates. While DABS has taken steps to implement this recommendation, there isn't enough data to assess the impact on inventory volumes. This is due to the recent use of DABS' new automated forecasting system. OLAG will review these numbers, including understock and



We will review the effect of changes to overstock and understock levels, as well as savings generated, in six to twelve months.



overstock levels, in six to twelve months to determine the effect of the changes DABS has made. We will also evaluate the savings generated through improvements. Figure 1.1 illustrates the way the new forecasting system works and points out a data concern.

Figure 1.1 A Three-Month Forecast Is Determined Using Automated Forecasting Software. Purchasing employees then manually adjust the automated forecast using industry trends. The zero seen in the month of January reflects a stock-out rather than actual demand. Instances like this inaccurately skew the forecast downward.



Source: Auditor Generated – Adjusted Demand Forecast, November 2022 to February 2024.

While this method is an improvement over manual calculations, DABS should consistently monitor and adjust forecasts to maintain accuracy. As seen in Figure 1.1, the month of January has a zero value. This is not reflective of actual demand, but rather a stock-out. However, the forecast appears to incorporate the zero, which skews the overall forecast downward. By omitting the zero from the calculation, the forecast becomes 365, an increase of 23. DABS acknowledges this issue and says it is working to get it resolved.



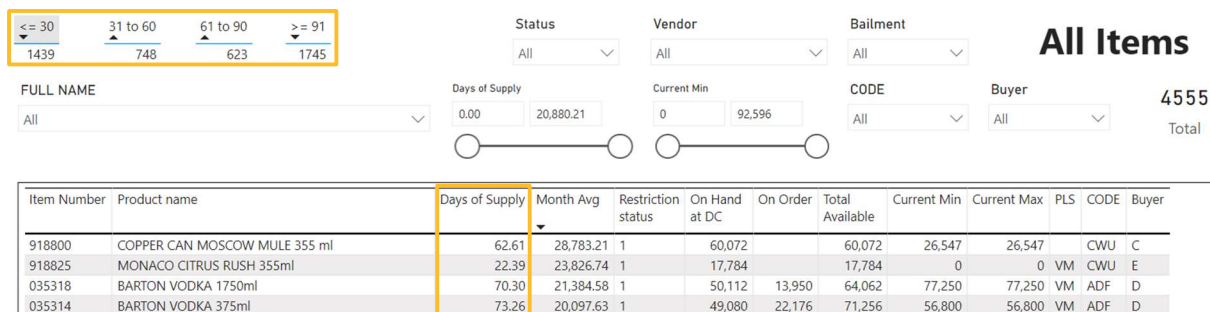
DABS should continually monitor and improve upon the accuracy of its product demand forecasts.

As more data is incorporated into the model over time, forecasts will likely improve and be able to effectively increase the time horizon. While the model can extend the planning horizon to twelve months, this is not set as the default. More data will allow seasonal trends and other patterns to be identified for more accurate predictions. DABS also may want to include additional variables to further improve the accuracy of its forecasts, as described in the efficiency evaluation.

The software automatically calculates average demand by item, safety stock volumes, and suggested purchase order quantities. For example, DABS created a Power BI dashboard to monitor and identify products in need of attention. The dashboard shows the “days of supply” remaining before a product runs out of stock. Filtering options include item status, bailment, product band, and vendor. Figure 1.2 illustrates some of the features and categories available for managing inventory.



Figure 1.2 DABS Uses a Power BI Dashboard to Manage Inventory, Including by Product Band. This allows purchasing to monitor inventory levels across the organization.



Source: DABS' Days of Supply Dashboard.



While DABS should continue to refine its forecasting models and formulas for calculated values, the system has the potential to be a considerable improvement since the evaluation. It is important to note we identified some possible concerns with data integrity during our review. A data dictionary could be used to ensure data are understood among all stakeholders. DABS should make

data quality a primary consideration as it moves toward greater use of the forecasting software.

Product Life Cycle, Including Listing and Delisting, Is More Transparent and User-Friendly

Vendors Can Now Use an Online Portal to Submit Applications

Efficiency Evaluation Recommendation 2: Create a structured listing and delisting process to ensure data-driven decision making (fully implemented).

Service to vendors has improved through the creation of a vendor portal, an updated vendor manual, and increased transparency.¹ The vendor portal allows application packets to be submitted online and for DABS to analyze submission data electronically. DABS refined its Listing Committee by including two store managers and one regional manager, in addition to two purchasing employees. Responsibilities are being defined in greater detail. Roles for committee members could also be considered assuring there is adequate coverage and ownership for the various responsibilities.



¹ See Appendix B for DABS' revised Listing Submission and Evaluation Process.



In addition, DABS has developed a rubric for scoring products. The goal of the rubric is to increase consistency and objectivity, though training and monitoring for consistency should occur. Weights to the categories have been proposed, but not yet adopted. We encourage DABS to move forward in calibrating the weighted scoring rubric to provide useful information that is predictive of product performance. Doing so, DABS will be able to balance subjectivity and fair, transparent analysis for vendors, as noted in the efficiency evaluation.

Listing and Delisting Relies on Performance Information for Data-Supported Decisions

Efficiency Recommendation 3: Evaluate performance and life cycle of listed products to be more agile in addressing need and demand (fully implemented).

DABS created the Global Sales Estimation (GSE) metric to rank items within a category or price band. This information is used to identify low-performing products by category. The Target Range Analysis report breaks out categories according to their type, liquid volume, and cost. DABS sets targets for these categories, and then relies on the GSE and other factors when making listing and delisting determinations. Figure 1.3 illustrates how categories are broken out.

Figure 1.3 The Target Range Analysis Report Breaks Out Categories to Improve Product Listing and Delisting Decisions. Categories are reviewed by type, liquid volume, and cost. The Global Sales Estimation is then paired with other factors to identify items to list or delist within a category.

Display Group	Assortment Group	Spring 2024 Target	Listed Items	NEED
Spirits_VODKA1750	Vodka1750_20.00-34.99	14	15	-1
Spirits_VODKA1750	Vodka1750_35.00-ABOVE	12	12	0
Spirits_VODKA375	Vodka375	21	22	-1
Spirits_FlavoredVodka	FlavoredVodka_0-9.99	10	9	1
Spirits_FlavoredVodka	FlavoredVodka_10.00-19.99	57	61	-4
Spirits_FlavoredVodka	FlavoredVodka_20.00-ABOVE	31	28	3
Spirits_FlavoredVodka1750	FlavoredVodka1750	7	10	-3

Source: DABS' Spring 2024 Category Targets

As seen in Figure 1.3, this information guides DABS purchasing employees on what needs product categories have. As product demand shifts, DABS sets new targets and adjusts its purchasing practices.



OLAG Will Follow Up to Evaluate the Impact Changes Have Had on Inventory Levels

OLAG will follow up in six to twelve months to assess the impact of changes made by DABS and support the implementation of evaluation report recommendations. This follow-up will focus on the impact of the implementation of the following recommendation: “Improve inventory management by adopting industry best practices.” As DABS strengthens its forecasts and brings inventory volumes to appropriate levels, we believe this recommendation will be complete. Indicators that we will review in six to twelve months include:

- Data integrity
- Percent of items out of stock
- Number of items with more than one year of supply stock
- Number of items with more than three years of supply stock
- Evaluate the savings generated.

We believe these indicators will inform stakeholders as to how well DABS is managing its inventory. The evaluation report also described these conditions as driving factors for waste and diversion of sales, amounting to estimates in the millions of dollars annually. DABS has a goal of keeping out of stock items to three percent or less. It has not been able to achieve this goal since the COVID-19 pandemic. DABS expressed its hope that the new processes and automated system will help it get back to achieving this goal, while avoiding overstock items.

We will review the impact of the new approach to forecasting and how well DABS is able to improve the accuracy of its forecasts. Assuring data quality will be an important strategy for improving forecast accuracy. After the outstanding recommendation has been implemented, we will conclude our follow-up reviews of the *Inventory Management Efficiency Evaluation*.





Appendices





A. Inventory Management Efficiency Evaluation





Governor's Office of Planning & Budget and
Office of the Legislative Fiscal Analyst

Inventory Management Efficiency Evaluation

*A Report for the
Utah Department of Alcoholic Beverage Services*

July 2023

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EXECUTIVE SUMMARY

The Governor's Office of Planning and Budget (GOPB) and the Office of the Legislative Fiscal Analyst (LFA) collaborated on an efficiency evaluation with the Department of Alcoholic Beverage Services (DABS) on inventory management with a focus on the listing and delisting process. This evaluation aims to improve DABS inventory practices and address the barriers to effective listing and delisting of products. By implementing industry best practices, DABS can save millions of dollars in waste annually, optimize the listing process, and enhance customer satisfaction. This evaluation provides recommendations related to utilizing forecasting software, calculating key values, treating items differently based on their importance, avoiding excessive inventory, extending the planning horizon, and creating a structured listing and delisting process. Delisting should be proactive and based on criteria like low profit performance and category trends. The listing process needs refinement, with a process balanced between subjectivity and objectivity, informed by the delisting process activities. Monitoring the performance of listed products using internal measures and tracking metrics is crucial for evaluating product performance and adopting strategies to experiment with products to enhance agility and optimize inventory. Implementing these recommendations will improve inventory management, including the listing and delisting process, and enable DABS to meet consumer demand effectively.

RECOMMENDATIONS

Recommendation #1: Improve inventory management by adopting industry best practices.

Inventory management is the process of ensuring the right product is in the right place at the right time. Good inventory management has the potential to save DABS millions of dollars in direct expenses, indirect expenses, and opportunity cost annually and provide agility in the listing and

delisting process, while errors and inaccuracies related to inventory management are among the greatest barriers to effective listing and delisting. With good inventory management, materials should only be purchased as necessary in needed quantities, with appropriate buffer amounts that avoid excess, and by utilizing a pull system. Too little inventory results in stock outage, which drives customer dissatisfaction, and too much stock wastes capital, time spent managing the product, and storage capabilities. Inventory management requires a balance and understanding of the costs and benefits to storing inventory.

We recommend DABS update their inventory management practices in the following areas:

Sub-recommendation #1a: Set up and fully utilize the forecasting and planning functionality of Microsoft Dynamics 365, likely hiring an outside consultant to assist.

The current DABS practice for forecasting sales consists of the purchasing employee looking at historical sales data for an item, estimating the average monthly sales, and then looking forward to the next few months to identify anything that may cause sales to be significantly higher or lower than prior months, such as seasonality or sale pricing. The purchasing employee then uses this information to estimate sales for the next two or three months and decides order volumes based on that subjective interpretation of the data rather than calculating a forecast.

This practice can be improved significantly by utilizing the forecasting and planning functionality available as part of Dynamics 365, the Enterprise Resource Planning software used by DABS. This software has the capability to automatically forecast future sales with a much higher accuracy level and with greater statistical backing than the current practice of estimating averages and can automatically identify seasonality and changing demand trends and adjust forecasts accordingly.

Fully utilizing the demand planning functionality of Dynamics 365 will require importing historical data from the previous software and setting up a statistical model. At least twelve months but preferably three years of data should be used to inform forecasts. Once historical data is imported and a forecasting model is created and in use, the software will be able to automatically generate a baseline forecast for every item DABS carries. While the automated forecast may be of limited use in some instances (e.g. rare and allocated products that are inconsistently available and have very small unit sales), the core general distribution items that account for the majority of sales will typically be good candidates for automated statistical forecasting. Most of these items have sufficient sales volume to ensure the past is a reasonable indicator of the future. Sufficient historical data will provide a clear picture of the volatility the item is likely to experience as well as assist in identifying any changes in demand trends and seasonality.

The goal of utilizing automated forecasting software is not to take forecasting and purchasing decision-making power out of the hands of DABS employees; rather, it is to increase accuracy by reducing the amount of time and resources the planning and purchasing employees must dedicate to the simple, straight-forward decisions that are broadly consistent month-to-month and instead give DABS employees time to focus on those decisions that are complex, exceptional, and/or high impact. Rather than employees manually creating the entire sales forecast and resulting purchase volumes from scratch each month, the software will create a baseline forecast, after which the employee will vet it for accuracy, identify exceptions, and adjust as needed.

A good example to illustrate how this method of forecasting can work is to look at Barton Vodka in the 1750 ml size, which is the best selling spirit (in unit sales) carried by DABS. Over the nine months of data we were provided, this item averaged 20,262 units in monthly sales with a minimum of 17,561 and a maximum of 23,897. Given high sales volume and relatively low

volatility, the forecast for this item is relatively simple – it can be expected that this item will continue to experience sales of approximately 20,000 units per month as it has historically. Assuming reasonable lead times and good vendor reliability, DABS should carry a safety stock of approximately 4,000-6,000 units (depending on the desired service level). While this item demands frequent attention due to its high importance in terms of profit and customer popularity, each analysis can be expected to be reasonably quick and simple with the use of the software program, and the forecast would likely need minimal adjustment from employees.

Other items would need more employee effort to adjust for variation in sales due to: Special Pricing Agreements (SPAs),¹ high seasonality of items such as sparkling wines, and factors outside of DABS control and beyond the data available to the software such as vendor shortages or delays. Still, even the items that require more complex adjustments from employees will be much less time consuming and mentally taxing to plan for and purchase since employee adjustments will be made from the starting point of a comprehensive automated baseline forecast.

Sub-recommendation #1b: Use calculated values much more extensively, rather than rough estimates or rules of thumb.

DABS uses few calculated values, such as economic order quantities and safety stock volumes, when making planning, purchasing, and inventory management decisions. While this is an unavoidable reality given the constraints of the current process that relies almost entirely on human touch, it is not sustainable for an organization with hundreds of millions of dollars in annual sales. The margin of error inherent to determining values by rough approximation or by general rule of thumb is significant, resulting in

¹ “Special Pricing Agreements” refer to an arrangement where for periods of time, typically a month, the vendor sells the product at a discount to DABS which results in a lower retail price for the consumer.

instances of both overstock and out-of-stock, and is likely producing several million dollars of waste annually.²

In addition to forecasted sales, key values that should be calculated include the following:

- **Safety stock:** The optimal safety stock volume is the amount required to provide the desired level of service (e.g., 97%) given historical sales variation. Level of service is the probability that a given item will run out of stock during a given order interval, typically given as a percentage. Desired level of service can and should vary by item classification, with core items having a higher level of service and lower selling items having a lower level of service. Safety stock can be manually calculated using the standard deviation of monthly sales, though in practice it is typically calculated automatically using planning software.
- **Economic order quantity (EOQ):** This is the optimal order volume where demand is met and the costs associated with ordering, holding inventory, handling inventory, etc., are minimized. For DABS, this is most relevant when determining if an item should be ordered by the pallet or by the case.
- **Optimal order interval:** This is the frequency with which DABS reviews the items carried by a specific vendor and places orders. For most items this is likely the monthly interval that DABS generally adheres to, but for a few larger vendors it may be worth considering a transition to weekly order intervals.

Sub-recommendation #1c: Not all items are of equal value, treat dissimilar items differently.

In the point-in-time warehouse data we were provided, 3 of the top 100 best-selling spirit or wine items were out of stock.³ At the same time, more than 100 items had inventory volumes at the warehouse in excess of twelve months' average sales, with some reaching more than three years of inventory. Being out of stock of a

popular product for a week will negatively impact several thousand customers and would also have a negative impact to net revenue, while being out of stock of a product in the bottom quartile of popularity for a week is likely to only impact a few dozen or perhaps a hundred customers and have a smaller impact on revenue.

Inventory management best practice is to classify items based on their relative importance and dedicate proportionally more time, effort, and resources to the most important items. This best practice makes intuitive sense: the more popular an item is, the greater the negative effects of a stock-out are, both in terms of the number of customers who are unable to purchase the item they want as well as the loss in revenue experienced by DABS. The opposite error also has a greater negative effect with more popular items: because the most important items tend to represent the greatest sales volume, overstock errors with these items tend to be much larger in terms of units or dollars of inventory than overstock errors with less popular items. Faster selling items are also more susceptible to stock-outs, since with slow selling items store inventory usually represents several weeks or even months of sales, compared to more popular items that may need replenishment from the warehouse to the store level one or more times per week. This slower selling store inventory provides a buffer that helps prevent warehouse stock-outs from turning into store shelf stock-outs.

In addition to giving the most important items more employee attention, differentiating between items also includes assigning higher desired service levels to more important items. For example, for the most important items DABS

² DABS estimates the cost of out-of-stocks exceeds \$2.5M per year including both direct costs and the diversion of sales to convenience stores, grocery stores, and out-of-state stores. This estimate does not include the cost of overstock events or other difficult-to-measure indirect costs.

³ To allow for minor inventory data inaccuracies, we considered an item to be out of stock if the reported warehouse inventory was less than one half of one percent of the item's average monthly sales.

may choose to keep three standard deviations of safety stock, corresponding to a probability of running out during a given order cycle well below 1%, while the least important items may have no safety stock kept at the warehouse and instead would rely on the shelf inventory at stores to act as the buffer against stock-outs.

While the specifics of how items are classified can vary depending on the needs of DABS, an option we suggest is to exclude special order items, limited or allocated items, and items that are typically delivered by the vendor directly to the store, and classify the remaining items into three or four groups. The most common way of doing this is using an A/B/C categorization, where the A items are the top sellers that produce 80% of profit, B items are the middle-of-the-road items that produce 15% of profit, and C items are the remaining items that make up 5% of profit. This categorization methodology can be customized to meet the specific needs of DABS – for example, it might make sense to classify the top 50 or 100 items as “AA” and provide them even more attention, or to identify certain items that are relatively low sellers in terms of profit but are important enough to customers that they justify being classified as a higher priority. This categorization can be expected to approximately follow the Pareto principle, meaning there will be a relatively small number of A items that produce an outsized proportion of revenue and vice versa.

In addition to prioritizing items by relative importance, newly listed items should be treated differently than those with a proven track record. DABS already does this to a degree by often introducing new items to only a limited number of stores, then expanding to more or all stores once the item has proven sufficient sales. In addition to this practice, DABS could further limit initial inventory to avoid overstocks.

Sub-recommendation #1d: Avoid holding larger volumes of inventory than necessary.

In many cases DABS already does this well and success is reflected in relatively high warehouse

turns. However, room remains for improvement in this area, especially with regard to ordering practices involving bailment and stock volumes of low selling products.

Many items that sell only a few dozen or a couple hundred units per month have multiple pallets of inventory on hand at the warehouse. For example, there are 4,380 bottles of Dr. McGillicuddy’s Mentholmint Liqueur in the warehouse⁴ – approximately 6 pallets⁵ – but the item has average sales of only 40 units per month. Another example is 20,000 Leguas Amber Wine, which appears to have been recently introduced by DABS. The product averaged 86 units sold per month from its introduction in December 2022 through March 2023, but there are 2,220 units in storage at the warehouse. Rather than test this product with an initial order of a partial pallet, or at most a single pallet, DABS took delivery of four pallets, greatly increasing both the cost of failure in the event that this product is delisted and significantly extending the amount of time it will take to sell excess inventory. Many of these slowest selling items are those at greatest risk of being delisted, so carrying excess inventory increases the probability of an extended over-stock of inventory that must be cleared out at low profit margins.

Items that are relatively high sellers are also significantly overstocked in some instances. For example, Stella Rosa Moscato is a relatively popular item, selling on average 1,559 bottles per month, but there are 34,788 bottles – more than 50 pallets – in storage in the warehouse, representing 22 months of average sales. This excess inventory is unnecessarily occupying scarce warehouse capacity, and in the case of perishable items like this product, the inventory on hand is so excessive that there is a risk of spoilage before the product can be sold.⁶

4 Warehouse inventory and sales figures in this report were provided by DABS on April 25th, 2023.

5 Pallet conversions in this report assume a pallet holds an average of 672 bottles.

6 “Stella Rosa has a general shelf life of 1 to 2 years and should not be kept longer.” <https://stellarosawines.com/>

One justification we heard for carrying large quantities of certain products is that the inventory is held on bailment so the cost to DABS is minimal.⁷ We recommend that DABS carefully examine this assumption. While bailment is a good cost- and risk-reducing measure, it is unlikely that it justifies carrying more inventory than would be the case without bailment except in uncommon circumstances. There are many more costs associated with holding inventory than what is avoided through bailment, and it is likely that holding excess inventory comes at a much greater cost than is justified by the savings provided by the product being on bailment. For example, holding excess inventory impacts the expense of the warehouse itself whether the inventory is paid for or held on bailment. DABS is currently in the early stages of building a second warehouse that they forecast will be at capacity within a decade after completion, at which point a third warehouse will need to be built. A small but nontrivial portion of warehouse capacity is occupied by excessive inventory that could be eliminated, and extending the date at which a third warehouse will need to be constructed by even just a few years would save the state millions of dollars.⁸

Sub-recommendation #1e: Extend the planning horizon further than is current practice.

Best practice is to forecast sales significantly further out than the 1-3 month purchasing window, with a year or more being common practice. The forecast should not be created once and then strictly adhered to; rather, it should be continually updated and adjusted at each purchasing interval to integrate new information, such as the most recent sales data, as it is collected. This allows the forecast to be used not only for short-term purchasing decisions, but also to guide longer-term planning decisions and avoid poor decisions caused by a failure to account for long-term expectations.

For example, if a product is highly seasonal, safety stock should increase and decrease depending on whether the product is in its high

or low season. To do this well, the planning and purchasing employees need to have estimated sales for several months further into the future in order to preemptively build up or draw down the safety stock. Another example would be when a product is trending up or down in popularity – planning further into the future will allow DABS to adjust to those trends preemptively rather than reactively.

Forecasting sales well into the future is also important in ensuring DABS has the agility to delist and list items quickly and at low cost. Because test items and other items at higher risk of being delisted in the near future have greater potential for negative costs associated with excess inventory, these items need strong evidence to justify holding more than a month or two of inventory at a time, even if that requires placing frequent small orders rather than bulk purchases. Newly listed items need to have initial purchase quantities carefully evaluated to avoid excessive stockpiling in the warehouse. Many items may only justify having one or two cases initially purchased for each store they will be stocked in, and purchasing more than a single pallet in the initial order should require significant evidence that the product will do well, such as strong proven sales outside of the state, national brand recognition, or other supporting factors.

Planning delist decisions further in advance and implementing strategies to reduce or consume inventory of these items prior to the delist date would streamline the delist process, reduce the expense incurred by discounting clearance items, and would improve the ability to shelf newly listed items on time. Identifying these items several months prior to the delist date would give the purchasing employees the notice necessary to stop ordering the item well in advance of

⁷ “Bailment” is the practice of taking physical delivery of inventory without assuming ownership.

⁸ Assuming a construction cost of \$120M and a 40 year useful life, the state would avoid \$3M in depreciation each year construction could be delayed through more efficient space utilization.

the delist date, allowing inventory to be sold at regular price rather than at a significant discount. While planning for a “seamless transition” sounds like a good idea on the surface, in most cases the best strategy is to aim to sell out of the delisted item a month or more in advance of the list date for the new item. Selling out of a delisted item early is low-impact, while delaying the launch of a new item due to shelf space being occupied by stagnating delisted inventory creates challenges. Few customers will be disappointed by the delisted item becoming unavailable a few weeks early and revenue will likely not be significantly impacted, as items are typically delisted due to being unpopular. Delaying the launch of a new item will typically have a greater impact, as it delays the ability to reset the planogram of each store and reduces the ability to collect accurate sales data that is necessary to determine if the new, and expectedly more popular, item should be retained long term.

Recommendation #2: Create a structured listing and delisting process to ensure data-driven decision making.

Currently, it is unclear what need the listing and delisting process fulfills and what the result of new listings actually achieves. We believe this process would benefit from more structure in order to understand what needs are being met by individual listed products, how delisting influences inventory needs, and the listing process as a whole.

We recommend DABS separate delisting from listing. In the current DABS process, delisting occurs after new products have been selected for listing in order to physically accommodate new products (See Appendix 1). We believe DABS should be more proactive and more purpose driven in delisting, rather than treating it as a function of listing (See Appendix 2).

Delisting

Currently, listed products may be delisted by the DABS Listing Committee at any time. Instead of reviewing the entire product portfolio twice a

year in conjunction with listing, we recommend reviewing categories in intervals. A good example of this is the Idaho State Liquor Division (ISLD). ISLD manages delisting on a calendared schedule, reviewing categories at specified times during the year.⁹ The DABS Listing Committee considers delisting based on, but not limited to, the following criteria:

- Low profit performance within a category
- Low case turns within a category
- Category trends
- Category need
- Supply issues
- Labeling/packaging issues¹⁰

ISLD also sets clear criteria for delisting based on product performance. ISLD specifies, “A Regular/Limited product carried by the ISLD will be examined for delisting if the product’s 12-month retail sales threshold is not achieved. Sales threshold is \$36,000 per rolling 12 months. In addition to this criteria, if an item falls in the bottom 20% of performance by category, the item will be considered for delisting, regardless of meeting retail sales threshold of \$36,000.”¹¹

This would allow DABS to make timely delisting decisions based on performance data.¹² If DABS adopted a similar model, delisting of underperforming products on a schedule would free up category space and physical space in stores on a continual basis, allowing for more dynamic understanding of inventory needs and space use and opportunity.

This type of regular category review will also lead to understanding actual need prior to listing decisions adding new products.

9 Idaho State Liquor Division, Product Delisting. <https://liquor.idaho.gov/product-delisting.html>

10 [DABS Vendor Manual](#).

11 Idaho State Liquor Division, Product Delisting. <https://liquor.idaho.gov/product-delisting.html>

12 We understand DABS is concerned about shelf space when making listing and delisting decisions, but we see this being resolved with inventory management practices and structured processes.

Listing

Currently, listing occurs twice a year, beginning in January for an April 1st on-shelf date, and in July for an October 1st on-shelf date. DABS publishes the most recent Target Report and Sales Analysis on their website for review by suppliers.¹³ Once found, suppliers are required to review these documents to decipher what items DABS would be more likely to consider during a biannual listing period. While DABS does define criteria for the evaluation of submitted products for listing (see below), there is no criteria or clear needs defined for what products DABS is looking for when activating the listing process. Should DABS implement the recommendation to delist on a calendared schedule, listing needs could be more clearly defined and the process itself refined using a systematic framework that balances subjectivity and fair, transparent evaluation.

We recommend DABS introduce more structure into the listing process to better understand the need listing is fulfilling and the performance of inventory added by the listing process. The following are considerations for structuring the listing process:

Sub-recommendation #2a: Update the submission process.

Ensure DABS and suppliers understand the needs that need to be met by the listing process. This could include a direct call for items of interest or through a calendared approach similar to delisting. This can also include providing an online portal or a designated application form to streamline the submission process and make it easier for suppliers.¹⁴ ISLD has a robust set of submission requirements that DABS may consider.¹⁵

Sub-recommendation #2b: Refine the Listing Committee.

The DABS Listing Committee currently consists of internal DABS employees:

- Director
- Deputy Director
- Warehouse Manager
- Two Purchasing Managers
- Compliance Director
- Alcohol Education Director¹⁶

It is unclear as to how much each committee member is involved in the committee and how their roles are specified. DABS may consider refining the Listing Committee to add outside members, including store managers, to help in the evaluation of products or clearly define the roles and level of influence and involvement on the committee.

Sub-recommendation #2c: Establish and continually refine criteria and scoring during the selection process.

This industry is part art and part science; subjectivity will always be part of the alcohol selection process.¹⁷ The current DABS selection process is robust in the criteria that is considered. The Listing Committee considers and scores the following criteria when selecting products:

- Market demand
- Category need
- Promotional and/or advertising activity
- Performance in other markets
- Special order requests
- Product quality
- Past supplier performance
- Availability of product¹⁸

¹³ [DABS Target Report, Spring 2023](#) and [DABS Sales Analysis](#).

¹⁴ We see this as an easy win for DABS. There is a significant amount of manual reviewing of submission packets by DABS expert staff. Systemizing the submission process beyond the fillable pdf document could allow DABS to analyze submission data electronically.

¹⁵ Idaho State Liquor Division. Product Listing. <https://liquor.idaho.gov/product-listing.html>

We recommend DABS build upon the current selection process by formalizing product scoring with a weighted scoring system and rubric. The weighting should reflect the significance of each criterion in the overall evaluation process; adding an additional layer of Listing Committee member weight would add further legitimacy to the selection process. Using a weighted scoring system will allow DABS to preserve the balance between subjectivity and objective analysis. DABS may wish to put this process into place and test out the importance (weight) of each criterion on the overall lifecycle of listed products. Additional criteria may include store manager and customer feedback by product or category. We encourage DABS to continue to refine the criteria used in the selection process, especially as product performance is observed over time.

Structuring the listing and delisting process to be more focused on data allows DABS to capture product performance through actual performance measures. We suggest DABS create internal performance measures and line item performance measures to monitor the listing and delisting process. Possible areas include:

- General performance of new listings against the delisted products
- Number of listed products that remain listed for 5+ years
- Percentage of supply in stock (specific to category, not inventory as a whole)

Recommendation #3: Evaluate performance and life cycle of listed products to be more agile in addressing need and demand.

With Recommendations 1 and 2, DABS will have a fuller understanding of the product life cycle, allowing them to be more agile in trying new products in different ways. We see this as an opportunity for DABS to adopt innovative strategies to meet demand, especially with fast-moving trends.

DABS could benefit from implementing a fail fast strategy when introducing new products. A fail fast strategy is one that is designed to allow rapid

testing of items in a way that minimizes the risk and cost of doing so, which would allow DABS to be innovative with new products and responsive to changes in customer preferences. For DABS, a fail fast strategy will likely involve a two-pronged approach. To minimize risk, a sufficient but minimal amount of initial inventory would need to be purchased. For items without strong proven sales, a nationally recognized brand, or other strong evidence the product will do well, the initial inventory purchase should likely be only a handful of cases rather than the full pallet that is the current practice. Then, benchmarks should be set and measured against on regular intervals to ensure the product is performing well enough to remain listed, and products should be prepared for delisting as soon as it is clear they are underperforming. This strategy will allow underperforming products to be identified quickly and will ensure inventory volumes, that must be cleared out to delist the item, are minimal. It will also give DABS the flexibility and information necessary to delist and list products more quickly and inexpensively, decreasing the stakes of listing decisions and relying more on the customer as the final decision-maker.

By experimenting with new products quickly, DABS can quickly gain insight and identify what resonates with customers. A fail fast strategy creates an opportunity for learning product demand, buying patterns, and brand recognition on a faster scale. We see it as a good way to test products within a category before going all in or incorporating a trend product more quickly into stores. This would allow for more timely adjustments and optimization of products to meet evolving consumer preferences or trends. Additionally, failing fast enables DABS to minimize financial losses by promptly abandoning unsuccessful products, potentially redirecting focus towards more promising options.

16 Store Manager Meeting Purchasing 2022 PowerPoint. Note: The DABS Listing Commission is difficult to identify on the public DABS website. This internal document is the only place we could find a list of commission members.

17 We agree with this sentiment shared with us by Idaho.

18 [DABS Vendor Manual](#).

Implementing a fail fast strategy can be further enhanced by allocating dedicated shelf space for fail fast product testing.¹⁹ By designating a specific area in stores for testing new products, DABS can gather real-time feedback from customers and monitor product performance. Dedicated shelf space for product testing also demonstrates a commitment to innovation and engagement with store managers and customers that will benefit the DABS relationship and control state model long term as the alcoholic beverage market continues to evolve, and does not require a new planogram each time a listing or delisting decision is made. By implementing a fail fast strategy, DABS can stay agile, adapt to changing market dynamics, and continuously improve their offerings to reasonably meet consumer demands.

While there is a risk factor to a fail fast strategy, DABS has room to consider delineating the bottom 10% of its inventory as a churn category, aiming for turnover of the least-selling or slowest moving products in their inventory. A 10% churn strategy can help prevent overbuying and inventory stagnation, increasing the chances of stocking products that have a higher potential for success. The concept of 10% churn and a fail fast strategy work together by fostering continuous evaluation and resource utilization. A fail fast strategy encourages experimentation and quick feedback, minimizing waste by quickly abandoning unsuccessful products, while the 10% churn strategy involves ongoing evaluation of sales performance and optimization of inventory and shelf space by regularly replacing underperforming products. Combining these approaches would enable DABS to allocate their resources effectively by investing in tested products and eliminating those with poor performance.

METHODOLOGY

Fieldwork

For this evaluation, we met regularly with a DABS working group and conducted interviews with DABS employees who oversee administrative

functions, demand forecasting, and purchasing. We also met with DABS suppliers and employees of other alcohol control states. We visited several DABS liquor stores and packaging agencies and conducted interviews with retail staff.

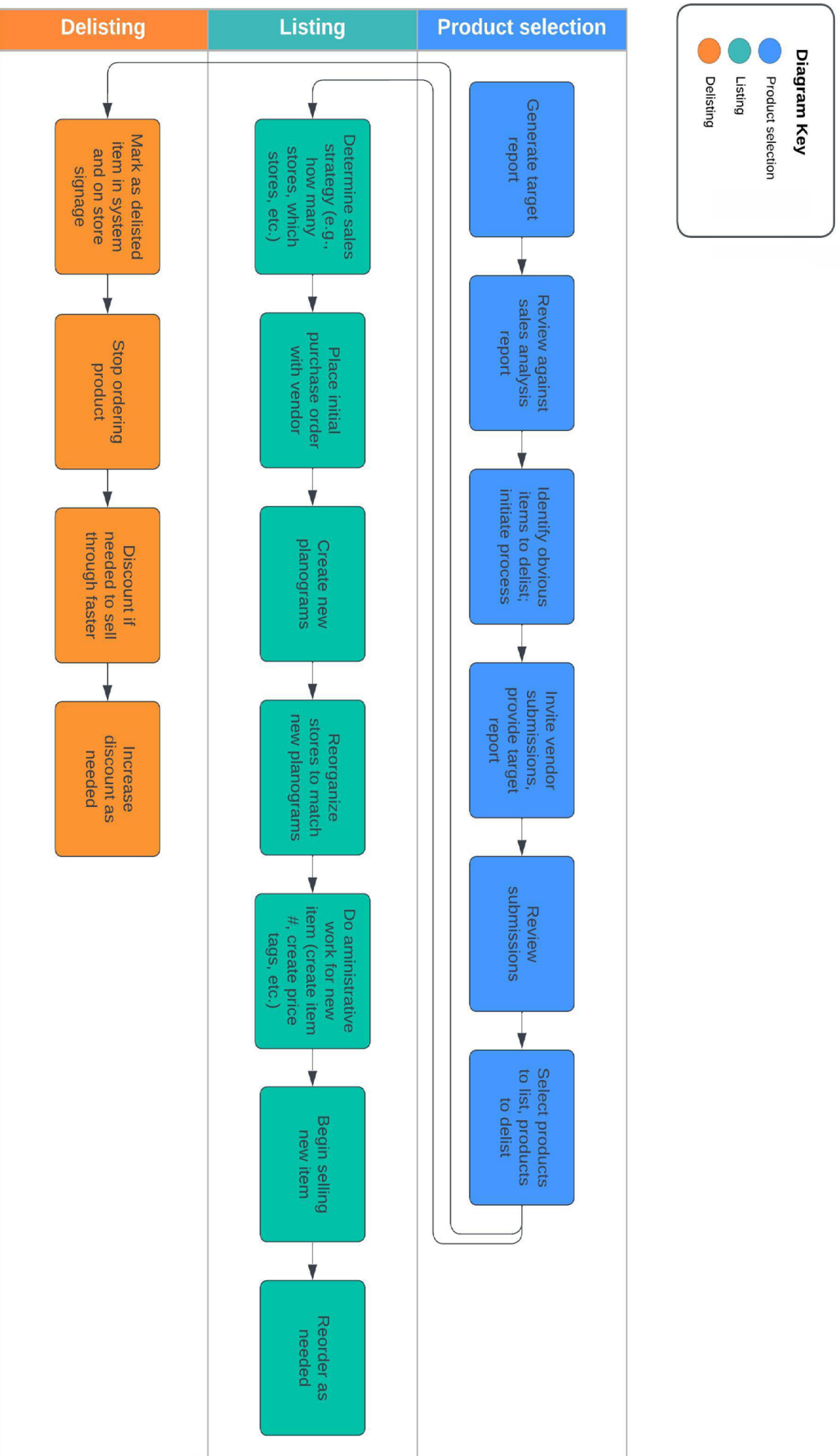
Data Analysis

For this project we analyzed data provided by DABS on April 25th, 2023. The dataset consisted of the volume of inventory in the warehouse for each item, the volume of inventory in stores for each item, as well as monthly sales volume (in units) for each item from July 2022 through March 2023. Beer, cider, and flavored malt beverages were excluded when analyzing the dataset as these are often drop-shipped directly to the store, with only a relatively small proportion passing through the warehouse. Items with a status other than 'General Distribution' such as 'Discontinued General Distribution,' 'Limited Distribution,' or 'Special Order,' were also excluded. Finally, we excluded new items as they have minimal or no sales history.

Using this filtered dataset we calculated the average monthly sales for each item, the minimum and maximum monthly sales for each item, the standard deviation of monthly sales for each item, and the number of months it would take to consume the volume of inventory at the warehouse for each item at the current average monthly sales rate.

¹⁹ The need for clearance space should decrease with inventory management practices in Recommendation 1.

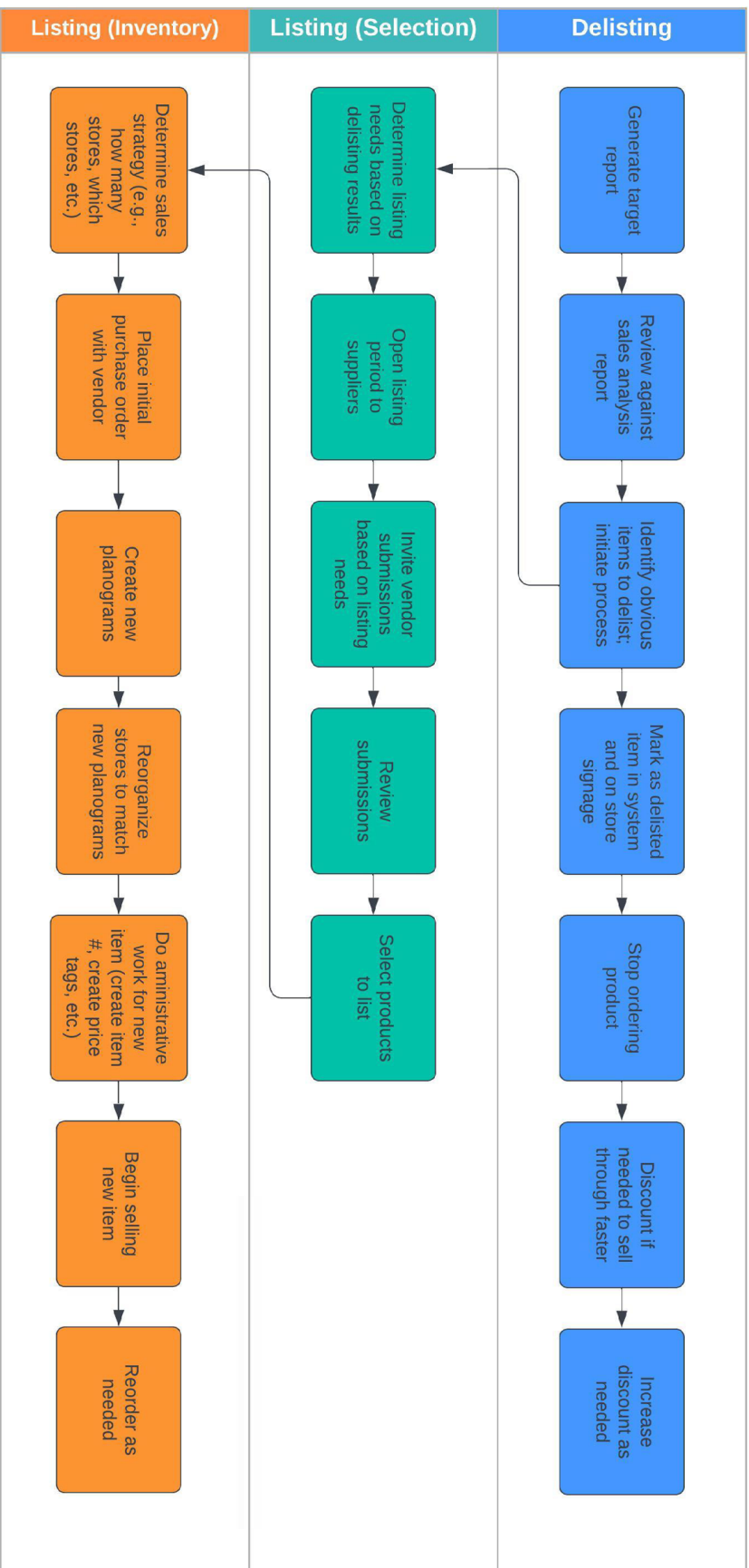
APPENDIX 1 - Current Listing and Delisting Process Map



APPENDIX 2 - Ideal Listing and Delisting Process Map

Diagram Key

- Delisting
- Listing (Selection)
- Listing (Inventory)
(Out of Scope)





State of Utah

SPENCER J. COX
Governor

DEIDRE M. HENDERSON
Lieutenant Governor



Department of
Alcoholic Beverage Services

TIFFANY CLASON
Executive Director

Appendix 3 - Agency Response

June 30, 2023

Jeff Mottishaw
Director of Operational Efficiencies
Governor's Office of Planning and Budget
350 N. State Street, #150
Salt Lake City, UT 84114

Director Mottishaw:

Thank you for the opportunity to respond to the recommendations provided by the Efficiency and Process Improvement Committee.

Recommendation #1: Improve inventory management by adopting industry best practices.

DABS Response: There are five sections to this recommendation, and we will respond to each section.

- a. Set up and fully utilize the forecasting and planning functionality of D365, likely hiring an outside consultant to assist - *The department agrees with this recommendation, and we intend to utilize the functionality of the Master Resource Planning (MRP) module in our new ERP system. We are currently working with our implementation and consulting team to install data and train the purchasing department to use all the features that this system provides.*
- b. Use calculated values much more extensively, rather than rough estimates or rules of thumb. *The department accepts this recommendation and will use the new ERP, to implement an Economic Order Quantity formula that will help reduce holding costs, ordering costs and shortage cost. We believe the optimal order interval suggestion is based on the desired service level and will be evaluated by product demand.*
- c. Not all items are of equal value, treat dissimilar items differently - *The department agrees with the recommendations on how to classify items for forecasting purposes. The department also understands that all items are not created equal and that more time, effort and resources*

should be placed on top selling items.

The warehouse holds about four thousand skus at any given time and using a good forecasting tool will help DABS employees improve our forecasting service level. The department recognizes that forecasted ordering can be off in two different ways, ordering too few to meet demand and ordering too many to meet demand. The department believes data reporting that tracks our forecasting accuracy will assist our staff to improve forecasting tools and processes. The department plans to develop a reporting tool that accurately shows the results of our forecasting. Once a baseline is developed, discussions for areas of improvement can be identified.

- d. *Avoid holding larger volumes of inventory than necessary - The department agrees with this recommendation and will review items that are excessively overstocked and work with the vendors to find solutions.*
- e. *Extend the planning horizon further than is current practice - The department agrees with this recommendation and regularly flexes inventory up for increased demand periods and down for lower periods of demand. By using forecast demand planning tools more effectively we can improve on this process. These tools along with increased category performance analysis will improve planning for delisted items.*

Recommendation #2: Create a structured listing and delisting process to ensure data-driven decision making.

DABS Response: The department accepts this recommendation and is currently evaluating how these suggestions should be implemented.

- a. *Delisting - The department agrees with adding a 12 month retail sales threshold, overall sales threshold, and bottom 20% of performance by category criteria to its existing criteria for product performance. The department will strive for a more dynamic delisting between listing periods.*
- b. *Listing - The department agrees with building a product scoring system with a weighted scoring system and rubric for evaluating all product submissions. The department also agrees that store staff and customer feedback is an essential part of the listing process. In addition, the department wishes to develop a tracking system for new listing performance evaluation and use sales thresholds to move from poor performing newer items in a more efficient manner.*

Recommendation #3: Evaluate performance and life cycle of listed products to be more agile in addressing need and demand.

DABS Response: *The department agrees with this recommendation to implement fail safe strategies and will use one time buy (OTB) options that will allow rapid testing and performance of questioned*

products. Using standard benchmarks as suggested should give the department the required information needed to make faster decisions about the product. To support this program dedicated shelf space in each store will be identified as needed to keep product lines fresh as testing is occurring.

Please let me know if you have any questions or concerns about the department's proposed course of action in response to the efficiency evaluation.

Sincerely,



Tiffany Clason (Jul 6, 2023 20:44 MDT)

Tiffany Clason, Executive Director
Department of Alcoholic Beverage Services

cc: Cade Meier, Deputy Director

1625 South 900 West, P.O. Box 30408, Salt Lake City, Utah 84130-0408, (801) 977-6800

AUTHORS

This report was written as part of a joint collaboration between the Utah Governor’s Office of Planning & Budget and the Office of the Legislative Fiscal Analyst.



Governor’s Office of Planning & Budget

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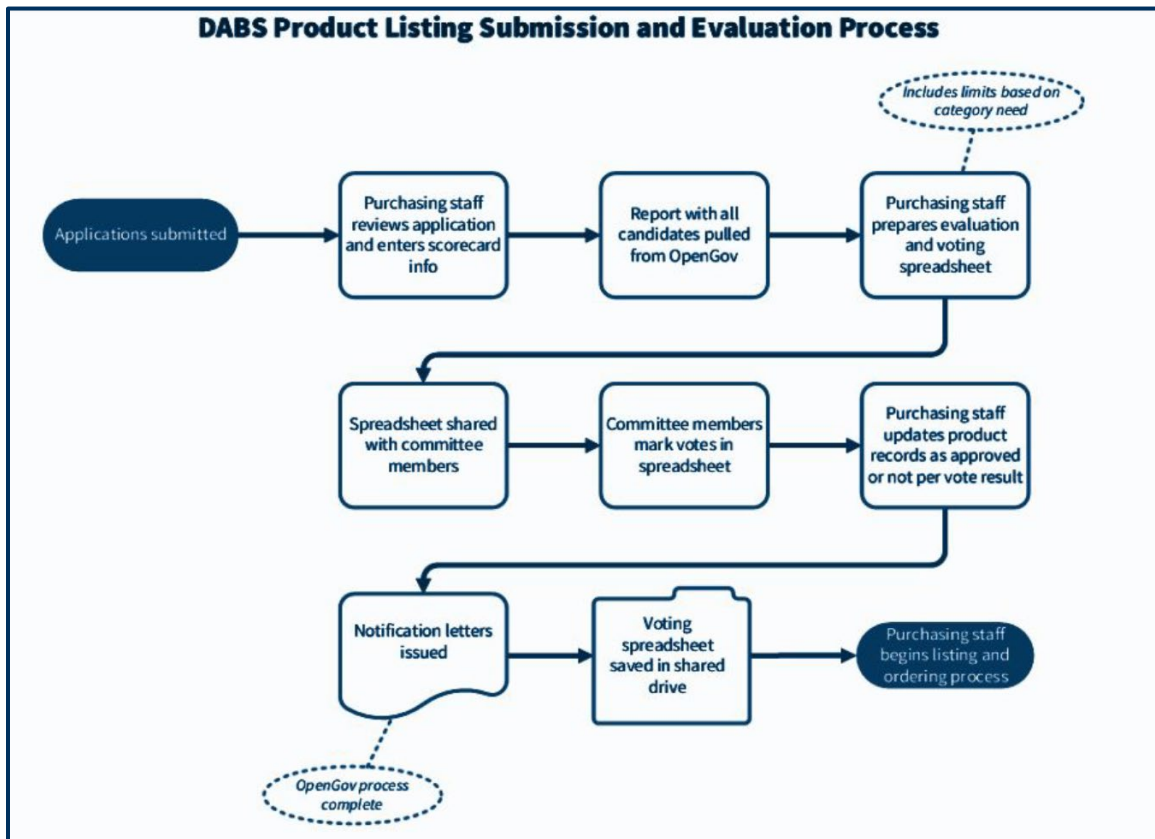
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B. DABS Product Listing Submission And Evaluation Process









Agency Response





State of Utah

SPENCER J. COX
Governor

DEIDRE M. HENDERSON
Lieutenant Governor

TIFFANY CLASON
Executive Director

May 17, 2024

Kade R. Minchey
Auditor General, CIA, CFE

Auditor Minchey:

I want to express my gratitude to you and your staff for the care and diligence taken in auditing the Department of Alcoholic Beverage Services (DABS).

Enclosed is the DABS response to each recommendation/observation for improvement to our Inventory Management Efficiency Evaluation. We are working diligently to execute our mission with fidelity and provide the best service possible to every Utahn, whether or not they drink alcoholic beverages. Your recommendations have given us much to reflect and act on and will help us continue to improve as an agency. For that, I thank you.

Recommendation/Observation 1:

Improve inventory management by adopting industry best practices (In Process). The Department Should Monitor Its Forecasting Model and Refine as Necessary. We will review the effect of changes to overstock and understock levels, as well as savings generated, in 6 to 12 months.

1. Historical data of only 16 months will increase overtime to improve future ordering.
2. More data will allow seasonal trends and other patterns to be identified for more accurate predictions.
3. Establish a data dictionary to ensure data are understood among all Stakeholders.

DABS Response:

The DABS agrees this is 'In Process.' The DABS will continue to implement the recommendations above and work toward improvements as a result.

Recommendation/Observation 2: Create a structured listing and delisting process to ensure data-driven decision making (Fully Implemented). Vendors can now use and Online Portal to Submit Applications

Recommendations:

1. We recommend that DABS further define roles for the selection committee members to assure there is adequate coverage and ownership for the various responsibilities.
2. We encourage DABS to move forward in calibrating the weighted scoring rubric to provide useful information that is predictive of product performance. Doing so, DABS will be able to balance subjectivity and fair, transparent analysis for vendors, as noted in the efficiency evaluation.

DABS Response:

The DABS agrees this is fully implemented and will continue to follow its established processes to continue to refine and make improvements with these recommendations.


Recommendation/Observation 3: Evaluate performance and life cycle of listed products to be more agile in addressing need and demand (Fully Implemented). Listing and Delisting Relies on Performance Information for Data-Supported Decision.

DABS Response:

The DABS agrees this is fully implemented and will continue to ensure the necessary data is maintained and monitored. The DABS understands that the following indicators will be reviewed in the future:

- Data Integrity
- Percent of items out of stock
- Number of items with more than one year of supply stock
- Number of items with more than three years of supply stock
- Evaluate the savings generated

Sincerely,


Tiffany Clason (May 20, 2024 11:38 MDT)

Tiffany Clason
Executive Director
Utah Department of Alcoholic Beverage Services

1625 South 900 West, P.O. Box 30408, Salt Lake City, Utah 84130-0408, (801) 977-6800

cc: Cade Meier, Deputy Director
Juliette Tennert, Commissioner
Jacquelyn Orton, Commissioner
Tara Thue, Commissioner
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Jennifer Tarazon, Commissioner
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Traci Santillanes, Internal Audit Director







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