**Executive Report**

**Group 9**

**Data Exhibit – 1**

The initial bar plot illustrates the credit ratings of suppliers across different regions. It shows that Saudi Arabia, the Philippines, Germany, Italy, and Brazil each have one supplier, while India and China have two, and the United States has three. Credit ratings range from 0 to 6, with Basic Pharm, a US-based company, having the highest rating of five, and Real Glass, a Chinese company, with the lowest rating of one. The color scheme is based on revenue.

The second graph depicts data security ratings for suppliers in each region, with the same distribution of suppliers across regions as the first graph. Data security is rated on a scale of 0 to 10, with Real Glass in China and Best O Glass in the US having the highest ratings, and Atticful having the lowest score of 5. The color scheme here reflects environmental incidents.

Lastly, a color-coded tree map represents cash operations, where darker hues indicate higher monetary operations. Real Glass in China leads with over $37 billion in cash operations, while Pharmy Leaf in India has the lowest cash operations at $1.431 billion. The color coding is based on environmental incidents.

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**Data Exhibit – 2**

Exhibit 2 contains information regarding Glassworks INC's inventory, where each stock keeping unit (SKU) serves as a unique identifier. Details such as standard price, on-hand stock, average monthly demand (APU), APU trend, supplier delivery on time (S-OTD), demand variability, and lead time in days are provided. Notably, the minimum order quantity is designed to meet a single lead-time requirement, and each SKU has a one-year expiration date, aligning with Glasswork's desired service level of 95%.

The graph depicts inventory units on the Y-axis and SKU numbers on the X-axis, revealing significant variation in inventory levels. SKU 56,722 boasts the largest inventory with 925,539 pieces, followed by SKUs 64,993, 77,067, and 95,067 with 193,618, 181,993, and 123,730 items respectively. Unit prices range from $5 to $6,600, with SKU 56,063 being the most expensive at $6,600 per unit.

A heatmap illustrates the relationship between various SKUs and lead times. For instance, SKU 68,001 exhibits a maximum lead time of 290 days, with a range spanning from 123 to 290 days.

Recommendations include focusing on managing existing inventory, as many SKUs have substantial stock levels that could lead to increased holding costs. Additionally, adjusting lead times may help improve the desired service level.

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**Data Exhibit – 3**

The provided information includes cycle times for each product, broken down by process time, as well as demand predictions for Fabricates items in 2020. It was observed that the actual demand for the upcoming quarters is significantly lower than the predicted demand. Future demand may reach up to 65 lots, while current demand fluctuates between 5 and 15 lots. Production times for syringes, vials, and ampoules are relatively equal, with syringes requiring the least time (57 hours) and vials the most (63 hours). Further analysis reveals that packing is the most time-consuming process (24 hours), despite being common to all three items. Tubing is the quickest process, while Hot-Forming is the lengthiest, with Washing being the fastest. Contamination emerges as the primary cause of rejections, while issues such as air bubbles and glass breakage are consistent across all three items. Ampoules experience the fewest rejections due to bent tubing.

Recommendations prioritize addressing contamination, given its severity compared to other issues identified.

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