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I.Executive Summary

This report outlines LSC's Master Production Schedule (MPS) for May to July 2025, aimed at managing demand surges from promotional campaigns while meeting domestic and export needs in China, Korea, and the USA. The plan uses detailed demand forecasting to disaggregate monthly figures into weekly SKU requirements, isolating peak weeks (Weeks 21 and 29) for precise production planning. A **Level Strategy** ensures steady output and inventory buildup for peak periods, complemented by a **Mixed Approach** that leverages safety stock and subcontracting to address capacity constraints and ensure flexibility.

Adjustments to the production schedule prioritize export timelines, critical SKUs, and unique production needs, such as tailored Espresso variants for Korea. Implementing a **Liquid Zone time fence** allows dynamic adjustments based on evolving demand and market conditions, enhancing responsiveness. Recommendations include maintaining optimized safety stock to balance costs with service quality and investing in additional production lines to meet long-term demand growth. This comprehensive plan ensures LSC can meet its promotional and export targets efficiently, minimizing operational risks and enhancing customer satisfaction.

II. Overview

LSC is a leading manufacturer in Vietnam's fast-moving consumer goods (FMCG) sector, specializing in producing **high-quality instant coffee products**. Operating under the **Make-to-Stock (MTS) production model**, the company ensures product availability by forecasting demand and producing in advance to meet customer needs efficiently. LSC has built a diverse portfolio that caters to various consumer preferences, offering three distinct product groups: 3In1 coffee mixes, Espresso, and Pure Black coffee. These products are available in a range of packaging options, from bags to boxes, tailored to meet the demands of both domestic and international markets, with its key markets in China, Korea, and the USA.

As part of its strategic planning, LSC will develop **a Master Production Schedule (MPS)** for May, June, and July 2025. These tasks come at a critical time when the company is preparing for two promotional campaigns in May and July that are expected to significantly elevate demand. The MPS must not only align production with forecasted sales but also account for complex variables, such as varying demand across regions, export schedules, and the operational constraints of machinery and storage.

III. Analysis

1. Estimate demand forecast for the period from May 2025 to July 2025

Disaggregation

Using the provided rolling forecast, LSC must calculate demand for May to July 2025. The total monthly demand (in cartons) and specific promotion week demand (Weeks 21 and 29) for each SKU, as shown in (Table 1), allow weekly demand to be determined using the specified formula.

(Total monthly demand - demand in promotion week(if any)) / number of weeks left in the month

Based on the given ratio (Table 3), LSC will distribute its products across both domestic and foreign markets (China, Korea, and the USA). The monthly shipment volumes for each market are detailed in Table 2.

The next step involves calculating the SKU ratio for each category (3In1, Espresso, and Pure Black) (Table 4). The monthly demand for each SKU in each market is then determined using the formula:

SKU Market Volume (cartons) = Total Demand (cartons) × Market Share (%) × SKU Category Share (%).

For countries with all three categories, detailed calculations are provided.

	Formula
Monthly 3In1 USA demand	= Total monthly demand for USA Market * 58% * SKU share of 3In1 Category
Monthly Espresso USA demand	= Total monthly demand for USA Market * 23.1% * SKU share of Espresso Category
Monthly Pure Black USA demand	= Total monthly demand for USA Market * 18.9% * SKU share of Pure Black Category

The final calculation for the monthly demand for each SKU in each market is shown in Table 5

Unit: cartons	Month	May						Jun					July					
	Week																	
SKU Code	Description	18	19	20	21	22	Total	23	24	25	26	Total	27	28	29	30	31	Total
LSC3IN100050	LSC 3in1 Instant Coffee - Bag 50 sticks	36,772	36,772	36,772	**90,151**	36,772	**237,239**	36,275	36,275	36,275	36,275	**145,100**	52,926	52,926	**267,265**	52,926	52,926	**478,969**
LSC3IN100100	LSC 3in1 Instant Coffee - Bag 100 sticks	28,600	28,600	28,600	**70,117**	28,600	**184,519**	28,214	28,214	28,214	28,214	**112,855**	41,165	41,165	**207,873**	41,165	41,165	**372,531**
LSC3IN100020	LSC 3in1 Instant Coffee - Box 20 sticks	12,768	12,768	12,768	**31,302**	12,768	**82,375**	12,595	12,595	12,595	12,595	**50,382**	18,377	18,377	**92,800**	18,377	18,377	**166,309**
LSC3IN100024	LSC 3in1 Instant Coffee - Box 24 sticks	21,280	21,280	21,280	**52,171**	21,280	**137,291**	20,992	20,992	20,992	20,992	**83,970**	30,629	30,629	**154,667**	30,629	30,629	**277,181**
LSCESP000015	LSC Espresso Instant Coffee - Box 15 sticks	16,544	16,544	16,544	**40,560**	16,544	**106,736**	16,320	16,320	16,320	16,320	**65,282**	23,812	23,812	**120,245**	23,812	23,812	**215,493**
LSCESP000050	LSC Espresso Instant Coffee - Box 50 sticks	4,855	4,855	4,855	**11,903**	4,855	**31,325**	4,790	4,790	4,790	4,790	**19,159**	6,988	6,988	**35,289**	6,988	6,988	**63,242**
LSCESP000100	LSC Espresso Instant Coffee - Box 100 sticks	4,855	4,855	4,855	**11,903**	4,855	**31,325**	4,790	4,790	4,790	4,790	**19,159**	6,988	6,988	**35,289**	6,988	6,988	**63,242**
LSCPUR000015	LSC Pure Black Coffee - Box 15 sticks	11,091	11,091	11,091	**27,191**	11,091	**71,555**	10,941	10,941	10,941	10,941	**43,764**	15,963	15,963	**80,611**	15,963	15,963	**144,464**
LSCPUR000020	LSC Pure Black Coffee - Box 20 sticks	4,906	4,906	4,906	**12,027**	4,906	**31,649**	4,839	4,839	4,839	4,839	**19,357**	7,061	7,061	**35,655**	7,061	7,061	**63,898**
LSCPUR000024	LSC Pure Black Coffee - Bag 24 sticks	8,105	8,105	8,105	**19,870**	8,105	**52,290**	7,995	7,995	7,995	7,995	**31,982**	11,665	11,665	**58,908**	11,665	11,665	**105,570**
Grand Total		149,777	149,777	149,777	**367,195**	149,777	**966,303**	147,752	147,752	147,752	147,752	**591,010**	215,574	215,574	**1,088,602**	215,574	215,574	**1,950,900**

Table 1: Rolling Forecast from May to July 2025

Export market	May	Jun	July	Total
China	175,867	81,559	218,501	475,927
Korea	58,944	34,279	93,643	186,866
USA	114,024	57,919	171,679	343,622
Domestic	617,467	417,253	1,467,077	2,501,797

Table 2: Monthly demand for each market

	Ratio of the demand forecast			
Export market	May	Jun	July	Remark
China	18.20%	13.80%	11.20%	100% volume are 3in1
Korea	6.10%	5.80%	4.80%	72% volume are Expressp, 38% Pure Black
USA	11.80%	9.80%	8.80%	58% for 3In1, 23.1% Expresso, 18.9% PureBlack
Total	36.10%	29.40%	24.80%	

Table 3: Ratios of the demand forecast of each market to the total demand forecast

	Week	May			June			July		
SKU Code	Description	Forecast	SKU share in category		Forecast	SKU share in category		Forecast	SKU share in category	
LSC3IN100050	LSC 3in1 Instant Coffee - Bag 50 sticks	237,239	37%		145,100	37%		478,969	37%	
LSC3IN100100	LSC 3in1 Instant Coffee - Bag 100 sticks	184,519	29%		112,855	29%		372,531	29%	
LSC3IN100020	LSC 3in1 Instant Coffee - Box 20 sticks	82,375	13%		50,382	13%		166,309	13%	
LSC3IN100024	LSC 3in1 Instant Coffee - Box 24 sticks	137,291	21%	100%	83,970	21%	100%	277,181	21%	100%
LSCESP000015	LSC Espresso Instant Coffee - Box 15 sticks	106,736	63%		65,282	63%		215,493	63%	
LSCESP000050	LSC Espresso Instant Coffee - Box 50 sticks	31,325	18%		19,159	18%		63,242	18%	
LSCESP000100	LSC Espresso Instant Coffee - Box 100 sticks	31,325	18%	100%	19,159	18%	100%	63,242	18%	100%
LSCPUR000015	LSC Pure Black Coffee - Box 15 sticks	71,555	46%		43,764	46%		144,464	46%	
LSCPUR000020	LSC Pure Black Coffee - Box 20 sticks	31,649	20%		19,357	20%		63,898	20%	
LSCPUR000024	LSC Pure Black Coffee - Bag 24 sticks	52,290	34%	100%	31,982	34%	100%	105,570	34%	100%
Grand Total		966,303			591,010			1,950,900		

Table 4: SKU share in each Category (3In1, Espresso, and Pure Black)

Unit: cartons	China		
demand forecast	May	June	July
LSC3IN100050	65,047	30,166	80,815
LSC3IN100100	50,592	23,462	62,856
LSC3IN100020	22,586	10,474	28,061
LSC3IN100024	37,643	17,457	46,768
LSCESP000015			
LSCESP000050			
LSCESP000100			
LSCPUR000015			
LSCPUR000020			
LSCPUR000024			
	175,867		

Unit: cartons	USA		
demand forecast	May	June	July
LSC3IN100050	24,460	12,425	36,829
LSC3IN100100	19,025	9,664	28,645
LSC3IN100020	8,493	4,314	12,788
LSC3IN100024	14,155	7,190	21,313
LSCESP000015	16,597	8,431	24,990
LSCESP000050	4,871	2,474	7,334
LSCESP000100	4,871	2,474	7,334
LSCPUR000015	9,917	5,037	14,932
LSCPUR000020	4,386	2,228	6,604
LSCPUR000024	7,247	3,681	10,912

Unit: cartons	Korea		
demand forecast	May	June	July
LSC3IN100050			
LSC3IN100100			
LSC3IN100020			
LSC3IN100024			
LSCESP000015	26,743	15,552	42,486
LSCESP000050	7,848	4,564	12,469
LSCESP000100	7,848	4,564	12,469
LSCPUR000015	7,595	4,417	12,066
LSCPUR000020	3,359	1,954	5,337
LSCPUR000024	5,550	3,228	8,817

Unit: cartons	Domestics		
demand forecast	May	June	July
LSC3IN100050	147,732	102,509	361,325
LSC3IN100100	114,902	79,729	281,030
LSC3IN100020	51,296	35,593	125,460
LSC3IN100024	85,493	59,322	209,100
LSCESP000015	63,396	41,299	148,017
LSCESP000050	18,605	12,120	43,440
LSCESP000100	18,605	12,120	43,440
LSCPUR000015	54,043	34,310	117,467
LSCPUR000020	23,904	15,176	51,957
LSCPUR000024	39,493	25,073	85,841
	617,467	417,253	1,467,077

Table 5: Final calculation for the monthly demand for each SKU in each market

Detail forecast for weekly demand

To calculate the **weekly demand** for each SKU in the domestic market, use the following formula

$$\text{Weekly Demand (Domestic)} = \frac{\text{Monthly Demand} - \text{Peak Week Demand}}{\text{Remaining Weeks}}$$

For example, in May, the monthly demand for SKU **LSC3IN100050** is 147,732. Subtract the peak week demand of **56,138**, leaving **91,594**. This value is then evenly divided across the **4 remaining weeks**:

$$\text{Weekly Demand (Domestic)} = \frac{91,594}{4} = 22,898.5$$

Thus, the **weekly demand** for non-peak weeks in May is **22,898.5** units.

Note that peak week demand for each SKU = 38% for the total in May and 55.8% for the total in July (Appendix 1)

SKU	COUNTRY	18.00	19.00	20.00	21.00	22.00	Total
LSC3IN100050	Domestic	22898	22898	22898	56138	22898	147732
	China		65047	Export week			65047
	USA				24460	Export week	24460
	Korea		0	Export week			0
	Total	22916	87964	22898	80598	22898	

For the foreign market, the **exporting week demand** equals the **total monthly demand** for each SKU in that market.

2. MPS Preparation with Existing Capacity

2.1 Maximum Capacity Analysis

First, LSC has to evaluate each step's maximum capacity per week, determining whether each can fulfill the production plan required for the weekly MPS from May to July 2025. We determined that **the machines** needed for the weekly production process require **6 working days**, equivalent to the number of working days of labor per week. This is because the machines are unable to operate independently without human supervision. Moreover, we also assume that LCS performs the **packing process** within **1 shift every day**. To determine the utmost capacity per week of each machine, the product of the number of machines, the number of shifts per day, the capacity per shift, and the number of operating days per week is determined. After calculation, we have the result as shown below (Table 6).

The machine maintenance time of 24 hours every two months is entirely disregarded in this calculation, as we assume that the company will utilize the weekend for maintenance to prevent any impact on the highest productivity.

Extraction							
	Unit	Quantity	Shift per day	Days of working per week	Capa per machine per shift	Max capacity per week	
	kgs	2	3	6	48,000	1,728,000	
Spray drying							
	Unit	Quantity	Shift per day	Days of working per week	Capa per machine per shift	Max capacity per week	
	kgs	2	3	6	41,800	1,504,800	
Mixing							
3in1							
	Unit	Quantity	Shift per day	Days of working per week	Capa per machine per shift	Max capacity per week	
	kgs	2	3	6	37,150	1,337,400	
Espresso							
	Unit	Quantity	Shift per day	Days of working per week	Capa per machine per shift	Max capacity per week	
	kgs	2	3	6	2,880	103,680	
Stick filling							
3in1							
	Unit	Quantity	Shift per day	Days of working per week	Capa per machine per shift	Max capacity per week	Convert to kg
	stick	2	3	6	2,400,000	86,400,000	1,382,400
Espresso							
	Unit	Quantity	Shift per day	Days of working per week	Capa per machine per shift	Max capacity per week	Convert to kg
	stick	2	3	6	1,200,000	43,200,000	108,000
Pure black							
	Unit	Quantity	Shift per day	Days of working per week	Capa per machine per shift	Max capacity per week	Convert to kg
	stick	2	3	6	1,300,000	46,800,000	46,800
Packing							
	Unit	Quantity labour per shift	Shifft per day	days of working per week	Capacity per person per shift	Max capacity per week	
	cartons	710	1	6	50	213,000	

Table 6: Maximum Capacity Analysis

2.2 Level Strategy

A.Explanation of this strategy

The **level strategy** in production planning involves maintaining a steady production rate regardless of demand fluctuations and building inventory during low demand to meet peak periods. This approach ensures **operational stability** by minimizing disruptions from frequent production changes and reducing associated costs (Chopra and Meindl 2022). It also supports a **consistent workforce**, avoiding hiring or layoffs during demand shifts (Heizer et al 2023). While ideal for predictable demand, effective inventory management is essential to control holding costs and avoid stockouts (Stevenson 2021). Overall, the level strategy promotes efficiency and customer satisfaction by balancing production and demand.

B. A reason for commencing production in the 16th week

The rationale for LSC Company's initiating production in Week 16 is based on the export schedule and associated requirements. Shipments are planned for export to China on 17th May, 13th June, and 10th July; to Korea on 12th May, 8th June, and 28th July; and to the USA on 17th June and 8th July. To meet these timelines, production must align with the Cut-Off (CY) date, which is 2 days before the Estimated Time of Departure (ETD). Starting production in Week 16 ensures compliance with **the shelf-life requirements for instant coffee**: foreign MT distributors require **at least 18 months** of shelf life remaining, while domestic MT distributors require **no less than 90%**. Moreover, this early production plan **optimizes inventory levels**, minimizing storage costs while ensuring sufficient stock to support promotional activities scheduled for Weeks 21 and 29, thereby **reducing the risk of sales loss** during these critical periods and maintaining customer satisfaction.

C. Initial MPS with the production in Week 16tt (Appendix 2)

Regarding foreign markets, **China and USA** demand will be planned to be filled by the production in the **previous week of their ETD week** while **Korea's demand** will be specially fulfilled by the production of **weeks 16, 17, and 18**. To explain, the Espresso product for the Korean market is tailored using a unique version of the Bill of Materials (BOM) during the Mixing stage, so we intend to outsource 2 machines to run this stage for this special version.

Export countries	**Production week to fulfill**	**ETD weeks**
China	week 18,22 and 26	week 19, 23 and 27

USA	Week 20, 22 and 25	week 21, 23, and 26
Korea	week 16, 17 and 18	week 18, 22, and 29

D. Constraints

MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Extraction	Production	1,183,073	1,139,247	1,244,726	2,523,823	1,078,341	1,698,913	1,078,341	2,063,914	1,078,341	1,078,341	2,012,703	2,874,238	1,078,341	1,078,341
Extraction	Capacity	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000
Extraction	%CU	58.68%	56.51%	61.74%	125.19%	53.49%	84.27%	53.49%	102.38%	53.49%	53.49%	99.84%	142.57%	53.49%	53.49%

According to the Table above, there are capacity constraints in some production steps. For example, the Extraction step cannot adapt the demand fulfillment in week 19th, 23th and 27th. Therefore, a detailed adjustment in the production schedule needs to be conducted to optimize the production plan, fulfilling all demand for exports and peak weeks.

3. Adjustment for Production Strategy

An explanation of Mixed Approach

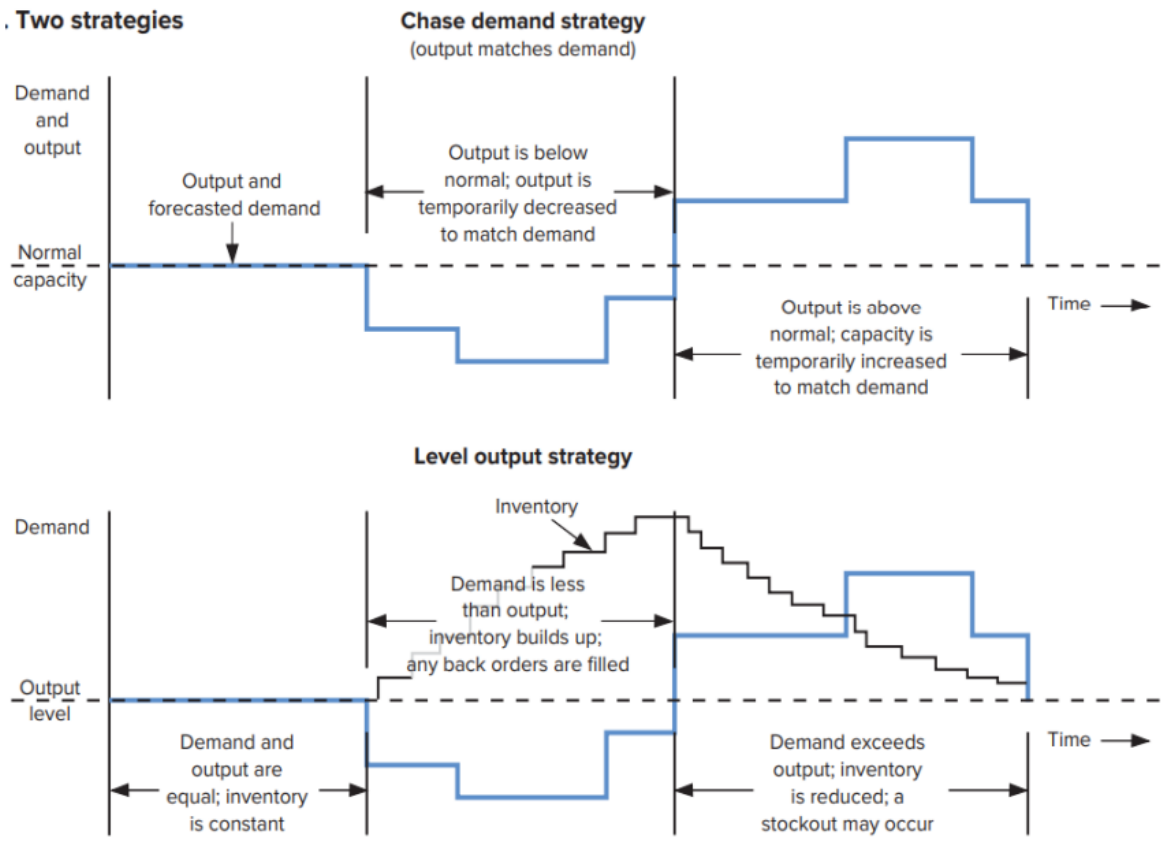

Figure 1: Mixed Production Approach

To tackle the constraint in capacity, LSC should change to **a mixed approach method,** combining maintaining a certain inventory level as a buffer (Level Output Strategy) and a temporary increase in capacity by subcontracting to fully match the demand (Chase Demand Strategy). To explain, since LSC's products are perishable, a **demand-driven production** can reduce holding costs by ensuring inventory remains fresh while minimizing the sales loss (Palanivel et al. 2024). However, there is **a gap** between LSC's **existing production capacity** and **future demand**, driven by promotion weeks and strict export ETD requirements. This gap poses the **risk of stockouts**, which could result in customers switching to competitors. To address this, LSC must produce a certain volume at least **two weeks in advance** to ensure adequate inventory levels for peak demand periods and to meet the rigid export schedules. In conclusion, adopting a mixed approach that combines maintaining **safety stock** through early production and enhancing capacity via **outsourcing** offers an effective solution, ensuring operational stability for regular demand while providing the flexibility needed to manage demand fluctuations anticipated in 2025 (Agrawal et al. 2024).

4. Adjustment for Production Schedule

4.1 A Liquid Zone time fence

Implementing the **Liquid Zone time fence** for LSC provides significant advantages by ensuring flexibility in long-term planning. It allows the company to **adjust production schedules** and quantities based on evolving demand forecasts and market conditions without committing prematurely to fixed plans. This adaptability helps LSC better respond to potential fluctuations in customer needs, promotional activities, or export schedules. Moreover, it enables proactive capacity planning and supplier coordination, ensuring resources are aligned with anticipated demand (Chopra and Meindl 2022). By **delaying final production commitments**, the Liquid Zone minimizes the **risks of overproduction or underproduction**, optimizes inventory levels, and reduces unnecessary costs. Overall, it enhances strategic decision-making while maintaining the agility needed to manage future uncertainties effectively (Stevenson 2020).

4.2 Production Scheduling Adjustment

Nevertheless, to align with the **efficient outsourcing threshold of 5,000 tons** (MQO) in a month, a portion of the production volume from constraint weeks and the **Espresso** production **for Korea** will be prioritized during the **first month of production**. For instance, the Espresso volume exported to Korea in May will be covered by production in Week 16, the June export volume by Week 17, and the July export volume by Week 18. Moreover, regarding peak weeks, we will look at **2 scenarios**. In the first scenario, we will see if the company can balance the constraint by using its machines, pushing the **surplus in the constrained weeks into the weeks where the capacity is not fully utilized.** If scenario one is not feasible, we will roll over the entire balance of unmet **demand weeks to the first month** to fulfill the outsourcing requirement. As a result, the constraints in each step are solved (Table 7).

MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Extraction	Production	1,183,073	1,139,247	1,244,726	2,523,823	1,078,341	1,698,913	1,078,341	2,063,914	1,078,341	1,078,341	2,012,703	2,874,238	1,078,341	1,078,341	21,210,683
Extraction	Capacity	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	
Extraction	%CU	58.68%	56.51%	61.74%	125.19%	53.49%	84.27%	53.49%	102.38%	53.49%	53.49%	99.84%	142.57%	53.49%	53.49%	
Adjust																
MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Extraction	Production	1,352,348	1,308,521	1,414,000	2,016,000	1,094,312	1,714,885	1,094,312	2,016,000	1,507,460	1,507,460	2,012,703	2,016,000	1,078,341	1,078,341	21,210,683
Extraction	Capacity	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	2,016,000	
Extraction	%CU	67.08%	64.91%	70.14%	100.00%	54.28%	85.06%	54.28%	100.00%	74.77%	74.77%	99.84%	100.00%	53.49%	53.49%	
MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Spray drying	Production	1,183,073	1,139,247	1,244,726	2,523,823	1,078,341	1,698,913	1,078,341	2,063,914	1,078,341	1,078,341	2,012,703	2,874,238	1,078,341	1,078,341	21,210,683
Spray drying	Capacity	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	
Spray drying	%CU	78.62%	75.71%	82.72%	167.72%	71.66%	112.90%	71.66%	137.16%	71.66%	71.66%	133.75%	191.00%	71.66%	71.66%	
Adjust																
MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Spray drying	Production	2,257,200	2,257,200	2,257,200	1,949,838	1,078,341	1,504,800	1,078,341	1,504,800	1,078,341	1,078,341	1,504,800	1,504,800	1,078,341	1,078,341	21,210,683
Spray drying	Capacity	2,257,200	2,257,200	2,257,200	2,257,200	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	1,504,800	
Spray drying	%CU	100.00%	100.00%	100.00%	86.38%	71.66%	100.00%	71.66%	100.00%	71.66%	71.66%	100.00%	100.00%	71.66%	71.66%	
MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Mixing (3in1)	Production	979,476	979,476	979,476	2,424,958	979,476	1,523,041	979,476	1,925,933	979,476	979,476	1,797,892	2,775,373	979,476	979,476	19,262,478
Mixing (3in1)	Capacity	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	
Mixing (3in1)	%CU	73.24%	73.24%	73.24%	181.32%	73.24%	113.88%	73.24%	144.01%	73.24%	73.24%	134.43%	207.52%	73.24%	73.24%	
Mixing (Espresso)	Production	107,707	88,974	134,059	62,941	62,941	117,064	62,941	90,433	62,941	62,941	144,430	62,941	62,941	62,941	1,186,198
Mixing (Espresso)	Capacity	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	
Mixing (Espresso)	%CU	103.88%	85.82%	129.30%	60.71%	60.71%	112.91%	60.71%	87.22%	60.71%	60.71%	139.30%	60.71%	60.71%	60.71%	
Mixing (espresso for Korea)	Production	42,440	24,681	67,423	-	-	-	-	-	-	-	-	-	-	-	
Mixing (espresso for Korea)	Capacity	103,680	103,680	103,680	-	-	-	-	-	-	-	-	-	-	-	
Mixing (espresso for Korea)	%CU	40.93%	23.80%	65.03%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Adjust																
MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Mixing (3in1)	Production	2,006,100	2,006,100	2,006,100	2,006,100	991,100	1,337,400	979,476	1,337,400	979,476	979,476	1,337,400	1,337,400	979,476	979,476	19,262,478
Mixing (3in1)	Capacity	2,006,100	2,006,100	2,006,100	2,006,100	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	1,337,400	
Mixing (3in1)	%CU	100.00%	100.00%	100.00%	100.00%	74.11%	100.00%	73.24%	100.00%	73.24%	73.24%	100.00%	100.00%	73.24%	73.24%	
Mixing (Espresso)	Production	122,896	104,164	103,680	69,633	69,633	103,680	73,129	100,621	73,129	73,129	103,680	62,941	62,941	62,941	1,186,198
Mixing (Espresso)	Capacity	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	103,680	
Mixing (Espresso)	%CU	118.53%	100.47%	100.00%	67.16%	67.16%	100.00%	70.53%	97.05%	70.53%	70.53%	100.00%	60.71%	60.71%	60.71%	
Mixing (Espresso)	Production	42,440	24,681	67,423	-	-	-	-	-	-	-	-	-	-	-	
Mixing (Espresso)	Capacity	103680	103680	103680	0	0	0	0	0	0	0	0	0	0	0	
Mixing (Espresso)	%CU	40.93%	23.80%	65.03%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Stick filling (3in1)	Production	979,476	979,476	979,476	2,424,958	979,476	1,523,041	979,476	1,925,933	979,476	979,476	1,797,892	2,775,373	979,476	979,476	19,262,478
Stick filling (3in1)	Capacity	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	
Stick filling (3in1)	%CU	70.85%	70.85%	70.85%	175.42%	70.85%	110.17%	70.85%	139.32%	70.85%	70.85%	130.06%	200.76%	70.85%	70.85%	
Adjust																
MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Stick filling (3in1)	Production	2,073,600	2,073,600	2,073,600	2,073,600	541,100	1,382,400	979,476	1,382,400	979,476	979,476	1,382,400	1,382,400	979,476	979,476	19,262,478
Stick filling (3in1)	Capacity	2,073,600	2,073,600	2,073,600	2,073,600	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	1,382,400	
Stick filling (3in1)	%CU	100.00%	100.00%	100.00%	100.00%	39.14%	100.00%	70.85%	100.00%	70.85%	70.85%	100.00%	100.00%	70.85%	70.85%	
MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Stick filling (Espresso)	Production	150,147	113,655	201,482	62,941	62,941	117,064	62,941	90,433	62,941	62,941	144,430	62,941	62,941	62,941	1,320,742
Stick filling (Espresso)	Capacity	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	
Stick filling (Espresso)	%CU	139.02%	105.24%	186.56%	58.28%	58.28%	108.39%	58.28%	83.73%	58.28%	58.28%	133.73%	58.28%	58.28%	58.28%	
Adjust																
MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Stick filling (Espresso)	Production	162,000	162,000	162,000	87,719	62,941	108,000	62,941	90,433	62,941	62,941	108,000	62,941	62,941	62,941	1,320,742
Stick filling (Espresso)	Capacity	162,000	162,000	162,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	
Stick filling (Espresso)	%CU	100.00%	100.00%	100.00%	81.22%	58.28%	100.00%	58.28%	83.73%	58.28%	58.28%	100.00%	58.28%	58.28%	58.28%	
MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Stick filling (Pure)	Production	53,450	46,116	63,768	35,924	35,924	58,809	35,924	47,548	35,924	35,924	70,381	35,924	35,924	35,924	627,462
Stick filling (Pure)	Capacity	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	
Stick filling (Pure)	%CU	114.21%	98.54%	136.26%	76.76%	76.76%	125.66%	76.76%	101.60%	76.76%	76.76%	150.39%	76.76%	76.76%	76.76%	
Adjust																
MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Stick filling (Espresso)	Production	70,200	70,200	59,273	35,924	35,924	46,800	35,924	46,800	35,924	35,924	46,800	35,924	35,924	35,924	627,462
Stick filling (Espresso)	Capacity	70,200	70,200	70,200	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	
Stick filling (Espresso)	%CU	100.00%	100.00%	84.43%	76.76%	76.76%	100.00%	76.76%	100.00%	76.76%	76.76%	100.00%	76.76%	76.76%	76.76%	
MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Packing	Production	242,063	217,397	276,761	358,985	183,118	297,142	183,118	322,596	183,118	183,118	354,797	401,619	183,118	183,118	3,570,071
Packing	Capacity	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	
Packing	%CU	75.76%	68.04%	86.62%	112.36%	57.31%	93.00%	57.31%	100.97%	57.31%	57.31%	111.05%	125.70%	57.31%	57.31%	
Adjust																
MACHINE	Type	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Packing	Production	255,224	230,559	289,923	319,500	184,666	297,142	184,666	319,500	241,827	241,827	319,500	319,500	183,118	183,118	3,570,071
Packing	Capacity	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	319,500	
Packing	%CU	79.88%	72.16%	90.74%	100.00%	57.80%	93.00%	57.80%	100.00%	75.69%	75.69%	100.00%	100.00%	57.31%	57.31%	

Table 7: Production Schedule adjustment

5. Final Master Production Scheduling

	Carton	16	17	18	19	20	21	22	23	24	25	26	27	28	29
3in1 (1)	LSC3IN100050	45.384	45.649	45.090	103.356	43.407	67.504	43.407	85.221	56.843	56.843	75.590	115.058	43.043	43.043
3in1 (2)	LSC3IN100100	35.267	35.474	35.039	80.361	33.731	52.473	33.731	66.254	44.172	44.172	58.766	89.466	33.449	33.449
3in1 (3)	LSC3IN100020	15.744	15.836	15.643	35.876	15.059	23.426	15.059	29.578	19.720	19.720	26.235	39.940	14.932	14.932
3in1 (4)	LSC3IN100024	26.241	26.394	26.071	59.793	25.098	39.043	25.098	49.296	32.866	32.866	43.724	66.567	24.887	24.887
Es (1)	LSCESP000015	45.453	34.372	61.075	15.793	17.895	34.343	17.895	26.006	23.434	23.434	40.970	14.117	17.745	17.745
Es (2)	LSCESP000050	13.241	9.988	17.826	4.552	5.157	9.985	5.157	7.539	6.754	6.754	11.939	4.068	5.114	5.114
Es (3)	LSCESP000100	14.093	10.845	18.673	5.271	5.972	10.793	5.972	8.340	7.821	7.821	12.667	4.711	5.922	5.922
Pure (1)	LSCPUR000015	22.880	19.791	27.252	12.902	14.620	24.414	14.620	19.395	19.145	19.145	27.986	11.533	14.497	14.497
Pure (2)	LSCPUR000020	10.143	8.777	12.077	5.726	6.488	10.820	6.488	8.600	8.497	8.497	12.398	5.118	6.434	6.434
Pure (3)	LSCPUR000024	16.795	14.539	19.990	9.492	10.756	17.912	10.756	14.244	14.085	14.085	20.516	8.485	10.665	10.665
	Total	**245.241**	**221.665**	**278.736**	**333.122**	**178.184**	**290.713**	**178.184**	**314.472**	**233.337**	**233.337**	**330.791**	**359.063**	**176.690**	**176.690**

Table 8: Master production scheduling in carton

A detailed breakdown by market for each SKU is provided in **Appendix 3** and the accompanying **Excel file**.

IV. Cost analysis

The total weekly inventory cost for LCS, calculated at **$119,871 USD**, is determined using the formula:

Weekly Inventory Cost = (Weekly Inventory in Tons) × (Inventory Cost per Ton per Month ÷ 4).

	tons	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
3in1 (1)	LSC3IN100050	72	435	800	977	1.621	1.265	1.356	1.324	1.801	1.710	1.960	2.359	2.666	2.044	776	456	137	
3in1 (2)	LSC3IN100100	59	341	625	763	1.263	986	1.056	1.032	1.402	1.331	1.525	1.836	2.074	1.590	603	355	106	
3in1 (3)	LSC3IN100020	25	146	268	327	541	423	453	442	601	570	654	787	889	681	258	152	46	
3in1 (4)	LSC3IN100024	51	292	536	654	1.083	845	905	884	1.202	1.141	1.307	1.573	1.777	1.363	517	304	91	
Es (1)	LSCESP000015	6	75	86	140	85	97	112	99	123	130	150	196	155	157	60	35	11	
Es (2)	LSCESP000050	8	47	54	85	53	59	68	60	74	78	89	116	91	92	35	20	6	
Es (3)	LSCESP000100	4	46	55	89	58	68	79	74	89	96	111	140	117	121	66	51	37	
Pure (1)	LSCPUR000015	3	23	34	47	40	46	49	46	56	61	70	88	73	74	29	17	5	
Pure (2)	LSCPUR000020	1	13	20	28	24	27	29	27	33	36	41	52	43	44	17	10	3	
Pure (3)	LSCPUR000024	1	110	132	209	136	155	178	160	197	209	241	310	250	255	105	67	29	
	Total inventory	229	1.530	2.610	3.318	4.904	3.970	4.286	4.149	5.577	5.362	6.147	7.456	8.136	6.422	2.465	1.467	470	
	Inventory cost (USD/ton/week)	401	2.677	4.567	5.806	8.582	6.948	7.500	7.260	9.760	9.384	10.758	13.048	14.238	11.238	4.313	2.568	823	119.871

Table 9: Inventory cost

Moreover, labor and machine outsourcing costs are two significant other costs that LCS has to spend in this MPS, respectively 15,063,360,000 VND and 1,699,531 USD.

V. Recommendation

1. Safety stocks:

According to Stevenson (2020, p.941), effective inventory management is defined as a key factor to determine a well-run organization. Although inventory is essential for operations by focusing on cost reduction and helping firms achieve customer satisfaction, most businesses spend 90% of their capital on inventory and it normally obtains 30% of their current assets. Hence, the inventory level must be considered

thoughtfully to be **balanced** between the **inventory holding cost** and the **customer service**, otherwise, it will become a burden rather than a beneficial investment.

2. Addressing Capacity Constraints Through Strategic Investment and Forecasting

Given that LSC's current capacity is unable to meet **growing demand**, the company must take proactive measures to address this issue. A thorough and **continuous monitoring of demand trends** is essential to evaluate whether upgrading existing machinery or purchasing additional equipment is necessary to bridge the capacity gap. However, this decision should not be made without a comprehensive **cost-benefit analysis**, as the long-term expenses of acquiring and maintaining new equipment may exceed the cost of outsourcing (Baines et al., 2017). Balancing these options requires precise and **reliable demand forecasting** to ensure that investments align with future needs while minimizing financial risks (Chopra & Meindl, 2021). By doing so, LSC can make informed decisions that support sustainable growth and operational efficiency.

3. Investment in an additional production line

Investing in a **new production line** is a pivotal decision for LSC as it tackles growing global demand for instant coffee and seasonal production constraints. An additional line can boost capacity, enhance efficiency, and **reduce reliance on seasonal adjustments**, ensuring LSC meets **fluctuating demand in the dynamic FMCG market**. Advanced manufacturing technologies further enable multi-product production on a single line, allowing LSC to adapt efficiently to market changes, such as consumer preferences or raw material cost variations. For example, producing both 3In1 and Espresso products on the same line can optimize operations and reduce costs. However, this investment involves **significant capital and long-term commitment**, making it essential to evaluate potential cash flows and market demand carefully. If justified, this decision could significantly enhance LSC's market position and profitability.

4. Quality Control for Outsourcing

4.1 Drawback of subcontracting

Subcontracting can reduce workload and save on investments in specialized machinery, but it also introduces significant **risks to quality control** if subcontractors fail to meet **product standards**. One major issue is cost prioritization, as contractors often select the lowest-cost subcontractors, leading to cost-cutting measures that compromise quality (Yik et al., 2006). Additionally, many subcontractors lack the resources to adopt

modern quality management systems, resulting in higher risks of defects (Karim et al., 2006). Furthermore, **inadequate communication and one-off relationships** between contractors and subcontractors can cause misunderstandings, leading to unmet requirements (Lin & Gibson, 2011). Therefore, if LSC opts for subcontracting, robust quality control measures must be in place to mitigate these risks.

4.2Implementation Plan to Address Subcontracting Drawbacks

1. **Establish Standards and Evaluate Subcontractors**

Clearly define quality requirements in contracts, incorporating penalties for non-compliance and rewards for meeting standards. Rigorously evaluate subcontractors based on capabilities, certifications, and past performance to ensure alignment with quality objectives (Trent, 2017).

2. **Implement Quality Monitoring and Support**

Conduct regular audits of subcontractor processes and provide training to enhance quality management systems. Leverage digital tools like ERP systems for real-time tracking and issue resolution to ensure adherence to standards (Huang et al., 2021).

3. **Foster Long-Term Collaboration**

Build strong partnerships through transparent communication, regular feedback, and mutual trust. Develop contingency plans to mitigate risks and maintain operations in case of subcontractor issues (Liu et al., 2020).

This structured approach enhances control, improves subcontractor performance, and minimizes risks.

VI. Conclusion

In conclusion, LSC's Master Production Schedule (MPS) for May to July 2025 addresses the dual challenges of meeting surging demand during promotional campaigns and fulfilling export commitments across key markets. By employing a Mixed Approach that integrates Level Output Strategy, subcontracting, and safety stock optimization, the plan ensures production flexibility and operational stability. The incorporation of tools like Liquid Zone time fencing enhances responsiveness to fluctuating market conditions, while strategic recommendations for investing in additional production lines and improving quality control for outsourcing provide a roadmap for long-term growth. This comprehensive strategy positions LSC to meet demand effectively, minimize operational risks, and sustain its competitive edge in the dynamic FMCG sector.

VII.Appendix

SKU Code	21	Total	Ratio of promotion week's demand	29	Total	Ratio of promotion week's demand
LSC3IN100050	**90,151**	**237,239**	38%	**267,265**	**478,969**	55.8%
LSC3IN100100	**70,117**	**184,519**	38%	**207,873**	**372,531**	55.8%
LSC3IN100020	**31,302**	**82,375**	38%	**92,800**	**166,309**	55.8%
LSC3IN100024	**52,171**	**137,291**	38%	**154,667**	**277,181**	55.8%
LSCESP000015	**40,560**	**106,736**	38%	**120,245**	**215,493**	55.8%
LSCESP000050	**11,903**	**31,325**	38%	**35,289**	**63,242**	55.8%
LSCESP000100	**11,903**	**31,325**	38%	**35,289**	**63,242**	55.8%
LSCPUR000015	**27,191**	**71,555**	38%	**80,611**	**144,464**	55.8%
LSCPUR000020	**12,027**	**31,649**	38%	**35,655**	**63,898**	55.8%
LSCPUR000024	**19,870**	**52,290**	38%	**58,908**	**105,570**	55.8%
Grand Total	**367,195**	**966,303**	38%	**1,088,602**	**1,950,900**	55.8%

Appendix 1: Share of Promotion week in total demand

Unit: cartons																		
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
	Domestic		43,758	43,758	43,758	43,758	43,758	43,758	43,758	43,758	43,758	43,758	43,758	43,758	43,758	43,758			621,566
	China					65,047				30,166				80,815					
	USA							24,460		12,425			36,829						
LSC3IN100050	Korea																		
	Used Domestic				22,898	22,898	22,898	56,138	22,898	25,627	25,627	25,627	25,627	39,926	39,926	201,619	39,926	39,926	611,566
	Inventory for domestic	8,960	52,718	96,475	117,334	138,193	159,053	146,672	167,531	185,662	203,792	221,922	240,052	243,883	247,715	89,853	49,926	10,000	
	Total produce		43,758	43,758	43,758	108,804	43,758	68,218	43,758	86,348	43,758	43,758	80,586	124,573	43,758	43,758			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
	Domestic		34,163	34,163	34,163	34,163	34,163	34,163	34,163	34,163	34,163	34,163	34,163	34,163	34,163	34,163			485,662
	China					50,592				23,462				62,856					
	USA							19,025		9,664			28,645						
LSC3IN100100	Korea																		
	Used Domestic				17,810	17,810	17,810	43,663	17,810	19,932	19,932	19,932	19,932	31,054	31,054	156,815	31,054	31,054	475,662
	Inventory for domestic	7,381	41,544	75,707	92,060	108,413	124,766	115,266	131,619	145,850	160,080	174,311	188,542	191,651	194,760	72,108	41,054	10,000	
	Total produce		34,163	34,163	34,163	84,755	34,163	53,188	34,163	67,289	34,163	34,163	62,808	97,019	34,163	34,163			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
	Domestic		15,647	15,647	15,647	15,647	15,647	15,647	15,647	15,647	15,647	15,647	15,647	15,647	15,647	15,647			222,349
	China					22,586				10,474				28,061					
	USA							8,493		4,314			12,788						
LSC3IN100020	Korea																		
	Used Domestic				7,951	7,951	7,951	19,492	7,951	8,898	8,898	8,898	8,898	13,863	13,863	70,007	13,863	13,863	212,349
	Inventory for domestic	3,295	18,942	34,588	42,284	49,980	57,676	53,831	61,526	68,275	75,023	81,772	88,520	90,303	92,087	37,727	23,863	10,000	
	Total		15,647	15,647	15,647	38,232	15,647	24,140	15,647	30,435	15,647	15,647	28,434	43,708	15,647	15,647			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
	Domestic		25,602	25,602	25,602	25,602	25,602	25,602	25,602	25,602	25,602	25,602	25,602	25,602	25,602	25,602			363,915
	China					37,643				17,457				46,768					
	USA							14,155		7,190			21,313						
LSC3IN100024	Korea																		
	Used Domestic				13,251	13,251	13,251	32,487	13,251	14,831	14,831	14,831	14,831	23,106	23,106	116,678	23,106	23,106	353,915
	Inventory for domestic	5,492	31,094	56,695	69,046	81,396	93,746	86,861	99,211	109,982	120,753	131,524	142,295	144,791	147,287	56,211	33,106	10,000	
	Total		25,602	25,602	25,602	63,244	25,602	39,757	25,602	50,249	25,602	25,602	46,915	72,370	25,602	25,602			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
	Domestic		5,828	5,828	5,828	5,828	5,828	5,828	5,828	5,828	5,828	5,828	5,828	5,828	5,828	5,828			84,165
	China																		
	USA							4,871		2,474			7,334						
LSCESP000050	Korea		7,848	4,564	12,469														
	Used Domestic				2,884	2,884	2,884	7,070	2,884	3,030	3,030	3,030	3,030	4,800	4,800	24,239	4,800	4,800	74,165
	Inventory for domestic	2,567	8,395	14,224	17,169	20,113	23,058	21,816	24,761	27,559	30,358	33,156	35,954	36,983	38,011	19,600	14,800	10,000	
	Total		13,677	10,393	18,297	5,828	5,828	10,699	5,828	8,303	5,828	5,828	13,162	5,828	5,828	5,828			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
	Domestic		5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,922			84,165
	China																		
	USA							4,871		2,474			7,334						
LSCESP000100	Korea		7,848	4,564	12,469														
	Used Domestic				2,884	2,884	2,884	7,070	2,884	3,030	3,030	3,030	3,030	4,800	4,800	24,239	4,800	4,800	74,165
	Inventory for domestic	1,253	7,175	13,098	16,136	19,175	22,213	21,065	24,104	26,996	29,888	32,781	35,673	36,795	37,917	19,600	14,800	10,000	
	Total		13,771	10,487	18,391	5,922	5,922	10,793	5,922	8,397	5,922	5,922	13,256	5,922	5,922	5,922			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
	Domestic		15,211	15,211	15,211	15,211	15,211	15,211	15,211	15,211	15,211	15,211	15,211	15,211	15,211	15,211			215,820
	China																		
	USA							9,917		5,037			14,932						
LSCPUR000015	Korea		7,595	4,417	12,066														
	Used Domestic				8,377	8,377	8,377	20,536	8,377	8,578	8,578	8,578	8,578	12,980	12,980	65,547	12,980	12,980	205,820
	Inventory for domestic	2,862	18,073	33,285	40,119	46,954	53,788	48,463	55,298	61,932	68,566	75,199	81,833	84,064	86,295	35,960	22,980	10,000	
	Total		22,806	19,628	27,277	15,211	15,211	25,128	15,211	20,249	15,211	15,211	30,143	15,211	15,211	15,211			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
	Domestic		7,148	7,148	7,148	7,148	7,148	7,148	7,148	7,148	7,148	7,148	7,148	7,148	7,148	7,148			101,036
	China																		
	USA							4,386		2,228			6,604						
LSCPUR000020	Korea		3,359	1,954	5,337														
	Used Domestic				3,705	3,705	3,705	9,083	3,705	3,794	3,794	3,794	3,794	5,741	5,741	28,992	5,741	5,741	91,036
	Inventory for domestic	960	8,108	15,257	18,700	22,143	25,586	23,651	27,094	30,449	33,803	37,157	40,512	41,919	43,326	21,482	15,741	10,000	
	Total		10,508	9,102	12,485	7,148	7,148	11,535	7,148	9,376	7,148	7,148	13,753	7,148	7,148	7,148			

SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
	Domestic		11,380	11,380	11,380	11,380	11,380	11,380	11,380	11,380	11,380	11,380	11,380	11,380	11,380	11,380			160,407
	China																		
	USA							7,247		3,681			10,912						
LSCPUR000024	Korea		5,550	3,228	8,817														
	Used Domestic				6,121	6,121	6,121	15,007	6,121	6,268	6,268	6,268	6,268	9,485	9,485	47,899	9,485	9,485	150,407
	Inventory for domestic	1,092	12,472	23,851	29,110	34,368	39,626	35,998	41,257	46,368	51,479	56,591	61,702	63,597	65,491	28,971	19,485	10,000	
	Total		16,930	14,607	20,197	11,380	11,380	18,627	11,380	15,061	11,380	11,380	22,291	11,380	11,380	11,380			

Appendix 2: Initial MPS

Unit: cartons																			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
LSC3IN100050	Domestic		45,384	45,649	45,090	38,309	43,407	43,043	43,407	42,630	56,843	56,843	38,761	34,242	43,043	43,043			611,566
	China					65,047				30,166				80,815					
	USA							24,460		12,425			36,829						
	Korea																		
	Used Domestic				22,898	22,898	22,898	56,138	22,898	25,627	25,627	25,627	25,627	39,926	39,926	201,619	39,926	39,926	611,566
	Inventory for domestic	8,960	54,344	99,993	122,185	137,595	158,104	145,009	165,518	182,521	213,737	244,952	258,086	252,402	255,519	96,943	57,016	17,090	
	Inventory for all	8,960	54,344	99,993	122,185	202,642	158,104	169,470	165,518	225,111	213,737	244,952	294,915	333,217	255,519	96,943	57,016	17,090	
	Total produce		45,384	45,649	45,090	103,356	43,407	67,504	43,407	85,221	56,843	56,843	75,590	115,058	43,043	43,043			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
LSC3IN100100	Domestic		35,267	35,474	35,039	29,770	33,731	33,449	33,731	33,128	44,172	44,172	30,121	26,609	33,449	33,449			475,662
	China					50,592				23,462				62,856					
	USA							19,025		9,664			28,645						
	Korea																		
	Used Domestic				17,810	17,810	17,810	43,663	17,810	19,932	19,932	19,932	19,932	31,054	31,054	156,815	31,054	31,054	475,662
	Inventory for domestic	7,381	42,648	78,122	95,352	107,311	123,233	113,019	128,940	142,136	166,376	190,616	200,804	196,360	198,755	75,388	44,334	13,281	
	Inventory for all	7,381	42,648	78,122	95,352	157,903	123,233	132,043	128,940	175,262	166,376	190,616	229,449	259,216	198,755	75,388	44,334	13,281	
	Total produce		35,267	35,474	35,039	80,361	33,731	52,473	33,731	66,254	44,172	44,172	58,766	89,466	33,449	33,449			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
LSC3IN100020	Domestic		15,744	15,836	15,643	13,290	15,059	14,932	15,059	14,789	19,720	19,720	13,447	11,879	14,932	14,932			212,349
	China					22,586				10,474				28,061					
	USA							8,493		4,314			12,788						
	Korea																		
	Used Domestic				7,951	7,951	7,951	19,492	7,951	8,898	8,898	8,898	8,898	13,863	13,863	70,007	13,863	13,863	212,349
	Inventory for domestic	3,295	19,039	34,876	42,568	47,907	55,015	50,455	57,563	63,453	74,275	85,096	89,645	87,661	88,730	33,655	19,792	5,929	
	Inventory for all	3,295	19,039	34,876	42,568	70,492	55,015	58,948	57,563	78,242	74,275	85,096	102,433	115,722	88,730	33,655	19,792	5,929	
	Total		15,744	15,836	15,643	35,876	15,059	23,426	15,059	29,578	19,720	19,720	26,235	39,940	14,932	14,932			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
LSC3IN100024	Domestic		26,241	26,394	26,071	22,150	25,098	24,887	25,098	24,648	32,866	32,866	22,411	19,799	24,887	24,887			353,915
	China					37,643				17,457				46,768					
	USA							14,155		7,190			21,313						
	Korea																		
	Used Domestic				13,251	13,251	13,251	32,487	13,251	14,831	14,831	14,831	14,831	23,106	23,106	116,678	23,106	23,106	353,915
	Inventory for domestic	5,492	31,733	58,127	70,946	79,845	91,691	84,091	95,938	105,756	123,791	141,827	149,408	146,101	147,883	56,092	32,987	9,881	
	Inventory for all	5,492	31,733	58,127	70,946	117,488	91,691	98,247	95,938	130,403	123,791	141,827	170,721	192,869	147,883	56,092	32,987	9,881	
	Total		26,241	26,394	26,071	59,793	25,098	39,043	25,098	49,296	32,866	32,866	43,724	66,567	24,887	24,887			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
LSCESP000015	Domestic		18,710	18,819	18,589	15,793	17,895	17,745	17,895	17,575	23,434	23,434	15,980	14,117	17,745	17,745			252,712
	China																		
	USA							16,597		8,431			24,990						
	Korea		26,743	15,552	42,486														
	Used Domestic				9,826	9,826	9,826	24,090	9,826	10,325	10,325	10,325	10,325	16,356	16,356	82,594	16,356	16,356	252,712
	Inventory for domestic	4,280	22,990	41,809	50,572	56,539	64,608	58,263	66,332	73,582	86,691	99,801	105,456	103,217	104,606	39,757	23,401	7,046	
	Inventory for all	4,280	49,733	57,362	93,058	56,539	64,608	74,860	66,332	82,012	86,691	99,801	130,446	103,217	104,606	39,757	23,401	7,046	
	Total		45,453	34,372	61,075	15,793	17,895	34,343	17,895	26,006	23,434	23,434	40,970	14,117	17,745	17,745			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
LSCESP000050	Domestic		5,392	5,424	5,357	4,552	5,157	5,114	5,157	5,065	6,754	6,754	4,605	4,068	5,114	5,114			74,165
	China																		
	USA							4,871		2,474			7,334						
	Korea		7,848	4,564	12,469														
	Used Domestic				2,884	2,884	2,884	7,070	2,884	3,030	3,030	3,030	3,030	4,800	4,800	24,239	4,800	4,800	74,165
	Inventory for domestic	2,567	7,959	13,383	15,857	17,524	19,798	17,842	20,116	22,151	25,875	29,598	31,174	30,442	30,756	11,631	6,831	2,031	
	Inventory for all	2,567	15,808	17,947	28,325	17,524	19,798	22,713	20,116	24,625	25,875	29,598	38,508	30,442	30,756	11,631	6,831	2,031	
	Total		13,241	9,988	17,826	4,552	5,157	9,985	5,157	7,539	6,754	6,754	11,939	4,068	5,114	5,114			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
LSCESP000100	Domestic		6,244	6,281	6,204	5,271	5,972	5,922	5,972	5,865	7,821	7,821	5,333	4,711	5,922	5,922			84,165
	China																		
	USA							4,871		2,474			7,334						
	Korea		7,848	4,564	12,469														
	Used Domestic				2,884	2,884	2,884	7,070	2,884	3,030	3,030	3,030	3,030	4,800	4,800	24,239	4,800	4,800	74,165
	Inventory for domestic	1,253	7,497	13,778	17,098	19,485	22,574	21,426	24,515	27,350	32,141	36,932	39,235	39,147	40,269	21,952	17,152	12,351	
	Inventory for all	1,253	15,346	18,342	29,567	19,485	22,574	26,297	24,515	29,825	32,141	36,932	46,569	39,147	40,269	21,952	17,152	12,351	
	Total		14,093	10,845	18,673	5,271	5,972	10,793	5,972	8,340	7,821	7,821	12,667	4,711	5,922	5,922			
SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
LSCPUR000015	Domestic		15,285	15,375	15,186	12,902	14,620	14,497	14,620	14,358	19,145	19,145	13,055	11,533	14,497	14,497			205,820
	China																		
	USA							9,917		5,037			14,932						
	Korea		7,595	4,417	12,066														
	Used Domestic				8,377	8,377	8,377	20,536	8,377	8,578	8,578	8,578	8,578	12,980	12,980	65,547	12,980	12,980	205,820
	Inventory for domestic	2,862	18,147	33,522	40,332	44,858	51,100	45,061	51,304	57,084	67,652	78,219	82,696	81,249	82,766	31,716	18,736	5,756	
	Inventory for all	2,862	25,742	37,939	52,398	44,858	51,100	54,978	51,304	62,122	67,652	78,219	97,628	81,249	82,766	31,716	18,736	5,756	
	Total		22,880	19,791	27,252	12,902	14,620	24,414	14,620	19,395	19,145	19,145	27,986	11,533	14,497	14,497			

SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
LSCPUR000020	Domestic		6,784	6,824	6,740	5,726	6,488	6,434	6,488	6,372	8,497	8,497	5,794	5,118	6,434	6,434			91,036
	China																		
	USA							4,386		2,228			6,604						
	Korea		3,359	1,954	5,337														
	Used Domestic				3,705	3,705	3,705	9,083	3,705	3,794	3,794	3,794	3,794	5,741	5,741	28,992	5,741	5,741	91,036
	Inventory for domestic	960	7,744	14,567	17,602	19,623	22,407	19,757	22,541	25,119	29,822	34,525	36,525	35,902	36,595	14,037	8,296	2,555	
	Inventory for all	960	11,103	16,521	22,939	19,623	22,407	24,144	22,541	27,347	29,822	34,525	43,129	35,902	36,595	14,037	8,296	2,555	
	Total		10,143	8,777	12,077	5,726	6,488	10,820	6,488	8,600	8,497	8,497	12,398	5,118	6,434	6,434			

SKU	COUNTRY		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
LSCPUR000024	Domestic		11,245	11,311	11,173	9,492	10,756	10,665	10,756	10,563	14,085	14,085	9,604	8,485	10,665	10,665			150,407
	China																		
	USA							7,247		3,681			10,912						
	Korea		5,550	3,228	8,817														
	Used Domestic				6,121	6,121	6,121	15,007	6,121	6,268	6,268	6,268	6,268	9,485	9,485	47,899	9,485	9,485	150,407
	Inventory for domestic	1,092	12,337	23,648	28,699	32,070	36,704	32,363	36,997	41,291	49,108	56,924	60,261	59,260	60,440	23,206	13,720	4,235	
	Inventory for all	1,092	17,887	26,876	37,517	32,070	36,704	39,610	36,997	44,973	49,108	56,924	71,172	59,260	60,440	23,206	13,720	4,235	
	Total		16,795	14,539	19,990	9,492	10,756	17,912	10,756	14,244	14,085	14,085	20,516	8,485	10,665	10,665			

Appendix 3: Final MPS after adjustment

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