LOUIS VUITTON
DISTRIBUTION CENTER PROJECT

PICKING PROCESS HEAT MAP & RECOMMENDATIONS

MGT360 OPERATIONS MANAGEMENT (SPRING 2019)

FINAL PRESENTATION

29 APR 2019

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AGENDA

1. INTRODUCTION
2. PICKING PROCESS OVERVIEW
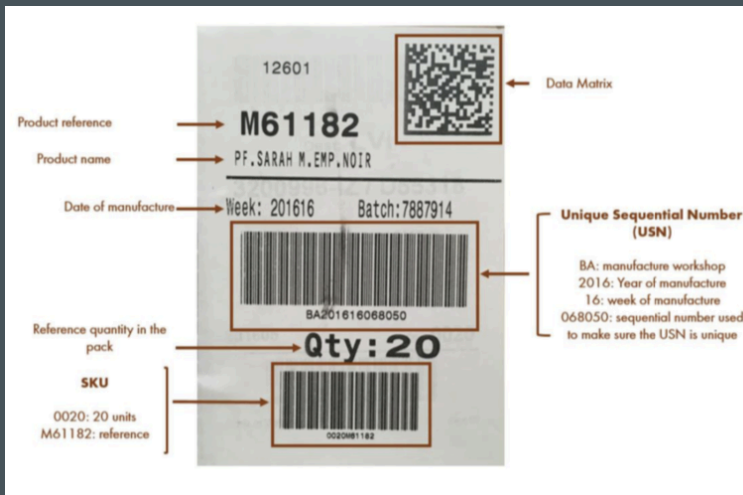3. HEAT MAP CREATION
4. PROCESS SUGGESTIONS
5. SUMMARY

I.

INTRODUCTION

❑ Background

- ■ The LVDC's management seeks to improve the efficiency of its "picking" process and labor productivity

❑ The aim of the project

- ■ Create the heat map to optimize the location of LVDC inventory SKU's

- ■ It enables management to distribute SKU's in a manner that will achieve easy and efficient picking.

- ■ Based on direct observation and interaction with management and "pickers", we also suggests other process improvements

2.A
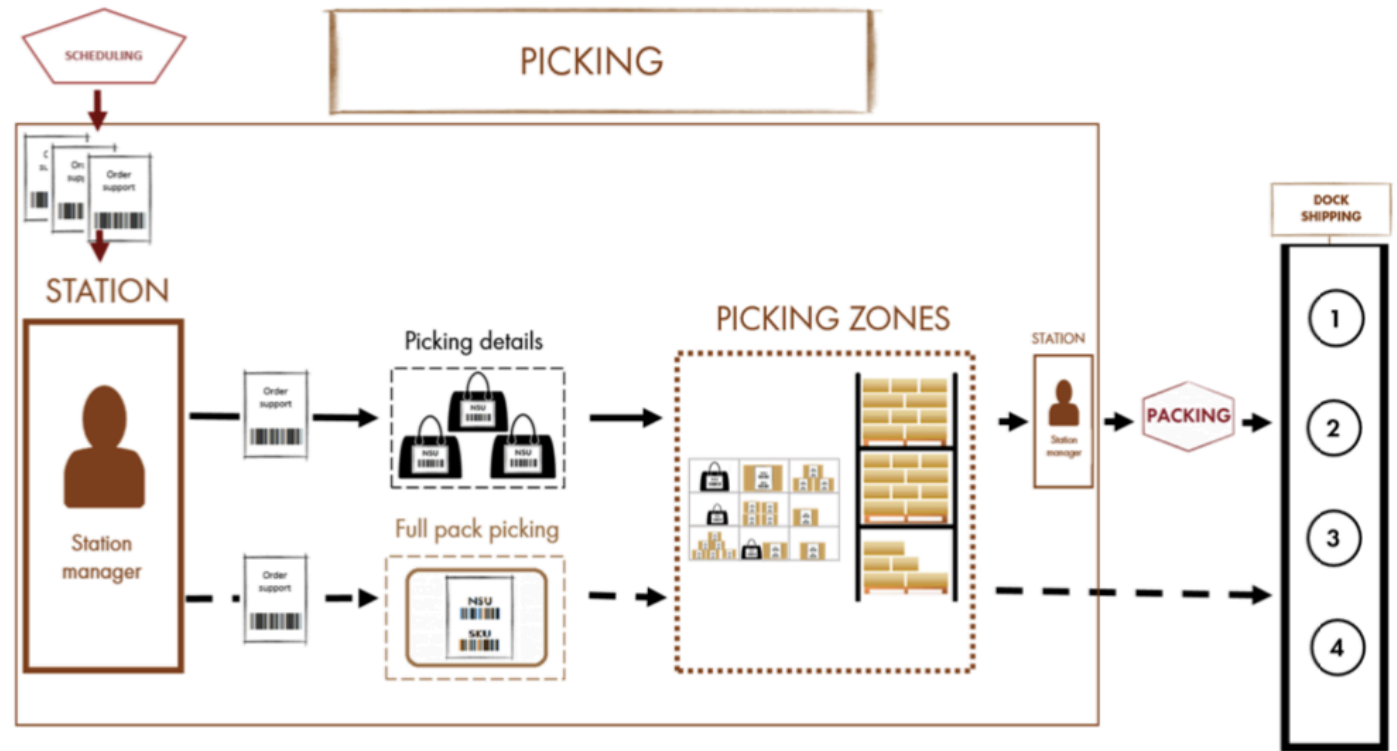### PICKING PROCESS OVERVIEW

Package Label

- ❑ Placement of SKU's – Infolog (WMS); on shelves and racks – FIFO process
  - ▪ Determining factor: space availability

- ❑ Two waves of distributions
  - ▪ To retail stores: evening
  - ▪ To e-commerce: day

- ❑ Two types of picking
  - ▪ Detail picking – focus of project
  - ▪ Full picking

- ❑ Three types of items
  - ▪ No-prep
  - ▪ Medium-prep (most common)
  - ▪ Full-prep

2.B
PICKING PROCESS OVERVIEW

- Jackie – our favorite picker

❑ Receives "ticket" – lists items in order
❑ Directs a set pathway through the aisles
❑ Opens container, if need
❑ Scans item(s)
❑ Breaks down box/container if last item
❑ Directed to next item

3.A
HEAT MAPPING CREATION

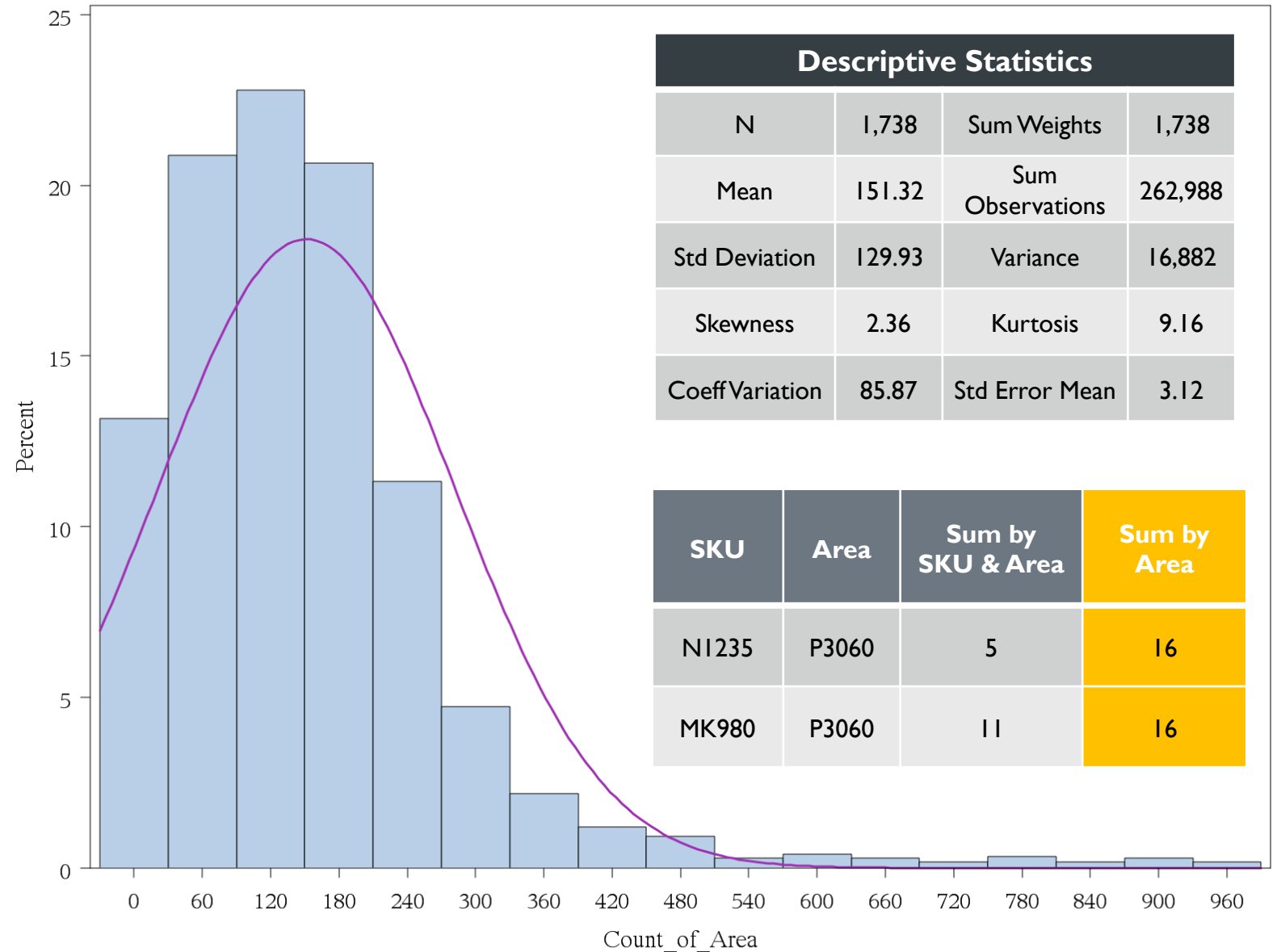| SKU	Area	Sum by SKU & Area	Sum by Area
N1235	P3060	5	16
MK980	P3060	11	16

❑ Data
- ▪ 1st quarter data
  - ▪ Rows: 506,804
  - ▪ Columns: 13

❑ Data preparation
- ▪ Move Type = *QP
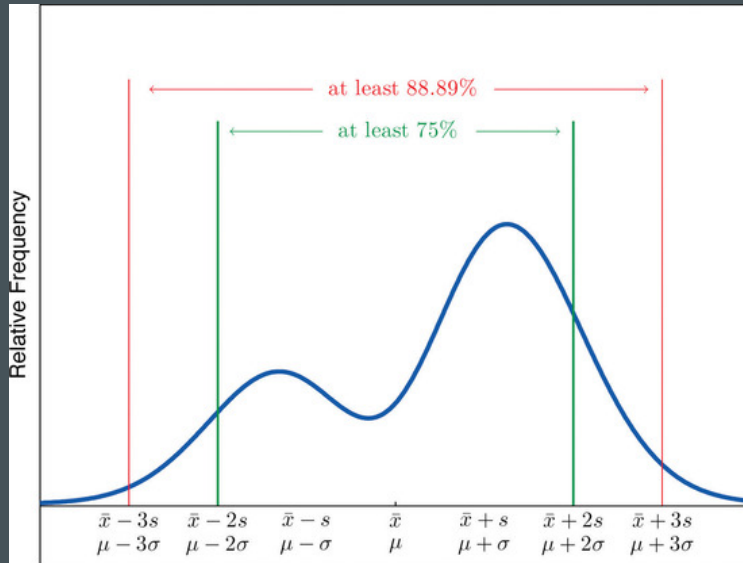- ▪ Area = Zone + Aisle + Place
  - • P3026
- ▪ Sum by SKU, Area & Area

3.B
HEAT MAPPING CREATION

Descriptive Statistics

N	1,738	Sum Weights	1,738
Mean	151.32	Sum Observations	262,988
Std Deviation	129.93	Variance	16,882
Skewness	2.36	Kurtosis	9.16
Coeff Variation	85.87	Std Error Mean	3.12

SKU	Area	Sum by SKU & Area	Sum by Area
N1235	P3060	5	16
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3.C
HEAT MAPPING CREATION

☐ Chebychev's Theorm

	Cold	Cool	Hot
A&G	1-150	151-241	242+
M	1-38	39-140	141+
P&R	1-63	64-775	776+

4.
PROCESS SUGGESTIONS

❑ Movement/Equipment
- Stagger entrance of pickers into the system OR start at different points in the system.
- Different method or equipment to transport SKU's

❑ Placement of SKU's (in addition to heat map)
- Heavier SKU's low – ladder problems
- Boxes protrude into the aisle

❑ Training/Procedures
- Breaking down of boxes
- Picking of packaging – what is a "pack"

5.
SUMMARY

❑ To improve the efficiency of its "picking" process, provided a heat mapping tool to identify the location of the highest demand SKU's.

❑ This can be accomplished by placing high demand SKU's near to picking areas and by distributing them in such a way as to avoid bottlenecks of pickers in those high demand areas.

❑ Identified recommendations for process improvement and further areas of process study.

❑ In all of these ways, hope to contribute to operational improvement in the LVDC.