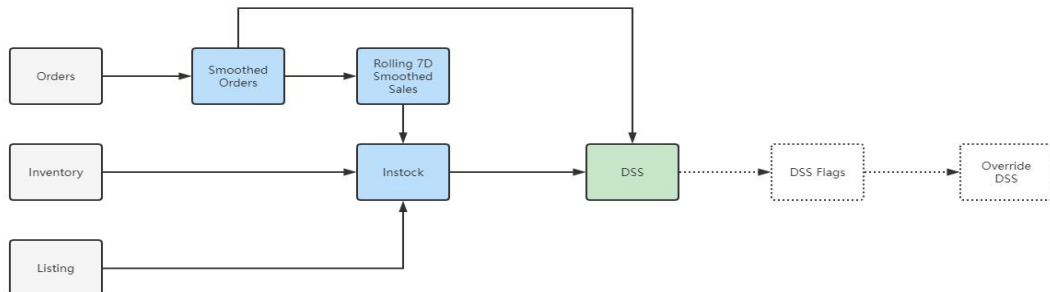# Channel System DSS

1 . General Information

- Get sales data for the past year
- smoothed order
- The smoothed order calculated data is used as one of the input sources to calculate the instock
- Get the inventory data as one of the input sources for calculating instock
- Get the listing status as one of the input sources for calculating the instock
- Calculate the instock and insert it into the database, the current rule is to replace the last 30 days of data
- Calculate the dss of day (n-1) and insert it into the database
- Calculate the dss flag for day (n-1) and insert it into the DB.

Smoothed Orders

- Based on the order hierarchy, values greater than the 95th percentile are replaced by values in the 95th percentile

Instock

- instock: Sellable inventory - 2 days sales(smoothed_qty_rolling) >= 5 units
- active: listing status is active
- instock_active: instock & active
- reserved_instock: instock or (smoothed_qty >= 5&(smoothed_qty>= rolling_qty_oos_adj * 0.7))
- reserved_instock_active: reserved_instock & active

DSS

- The criteria to determine if it is not a new product: can find 3 consecutive reserved_instock_active for 7 days that are true

- **Not new product：**
  - Requires at least 3 instances 7 consecutive instock days
  - Each dss uses a weighted average of the 3 weeks [6,2,1]
  - **Dss1**: Old product calculation is three valid 7 days of smoothed_qty calculation (6,2,1)
  - **Dss2**: DSS2 is calculated using the valid three weeks of data after oos, not all oos can calculate DSS2, because the condition of calculating DSS2 is that oos week is greater than or equal to 4, and oos week is less than 8, and then the valid 1st,2nd,3rd week data are used to participate in calculating DSS2
  - **Dss3**: DSS3 is calculated using the valid 3 weeks of data before the OOS, here it is not necessary to have OOS to calculate DSS3, because it is necessary to find 3 consecutive valid 3 weeks before the OOS date to calculate
  - **Dss4**: The average of the actual number of sales in the last 7 days. If today is day n, then dss4 = (sum(n-6 qty to n qty)/7). Day n-6 to day n is 7 calendar days, and the value of dss4 is calculated regardless of whether it is oos or intock.
- **New product：**
  - **Dss1**: new product calculation is the last 21 days of calculation (8,2,1)
  - **Dss2**: New product calculation Weighted average of smooth_qty.ewm(alpha=0.7) indices
  - **Dss3**: new product calculation is to find the average of the last 21 days
  - **Dss4**: The average of the actual number of sales in the last 7 days. If today is day n, then dss4 = (sum(n-6 qty to n qty)/7). Day n-6 to day n is 7 calendar days, and the value of dss4 is calculated regardless of whether it is oos or intock.

Dss flag

- **flag1a**: (third week dss=0 and first week dss>10) or (wk1-wk3)/wk3 value is large and exceeds the given interval (config inside the flag1 value, indicating that week1 and week3 differences are relatively large)
- **flag1b**: (Week 2 dss=0 and Week 1 dss>10) or (wk1-wk2)/wk2 value is large and exceeds the given interval
- **flag2**: 3-week motheed_qty / 3-week actual qty <= 0.85

- **flag3**: For new product, more than 5 days of DSS calculation is from the first 14 days of the product's first sale
- **flag4a**: (dss3 sales = 0 and dss1>2) or return higher than the previous sales , or return lower than the previous sales
- **flag4b**: (dss3 sales = 0 and dss2 > 2) return to sell higher than before, or return to sell lower than before
- **flag5**: Check your script for errors, 70% of the last 21 days are instock_active, but less than 7 days are involved in calculating dss
- **flag6**: 21 days actual sales are greater than 0, but dss=0
- **flag7**: There are sales in the past 4 months, but the sales of 4 months ago are used to calculate the dss, the reason is whether there is an error in sending the sales of the past 4 months, or whether there is an error in the instock

2 . Table used to calculate DSS

channel_id	account_name	country	channel_group	sales_table	inv_table	listing_table
111101	Juvo+	US	amazon_us	fact_so	fact_inventory	amz_my_listing
111102	Juvo+	CA	amazon_us	fact_so	fact_inventory	amz_my_listing
111103	Juvo+	MX	amazon_us	fact_so	fact_inventory	amz_my_listing
112101	Sparkle and Bash	US	amazon_us	fact_so	fact_inventory	amz_my_listing
112102	Sparkle and Bash	CA	amazon_us	fact_so	fact_inventory	amz_my_listing
112103	Sparkle and Bash	MX	amazon_us	fact_so	fact_inventory	amz_my_listing
113101	BrightCreations	US	amazon_us	fact_so	fact_inventory	amz_my_listing
113102	BrightCreations	CA	amazon_us	fact_so	fact_inventory	amz_my_listing
113103	BrightCreations	MX	amazon_us	fact_so	fact_inventory	amz_my_listing
114101	TALENTED PLUS	US	amazon_us	fact_so	fact_inventory	amz_my_listing
114102	TALENTED PLUS	CA	amazon_us	fact_so	fact_inventory	amz_my_listing
114103	TALENTED PLUS	MX	amazon_us	fact_so	fact_inventory	amz_my_listing
131101	Juvo+	UK	amazon_int	fact_so	fact_inventory	amz_my_listing_eu

131102	Juvo+	DE	amazon_int	fact_so	fact_inventory	amz_my_listing_eu
131103	Juvo+	FR	amazon_int	fact_so	fact_inventory	amz_my_listing_eu
131104	Juvo+	IT	amazon_int	fact_so	fact_inventory	amz_my_listing_eu
131105	Juvo+	ES	amazon_int	fact_so	fact_inventory	amz_my_listing_eu
131106	Juvo+	NL	amazon_int	fact_so	fact_inventory	amz_my_listing_eu
131107	Juvo+	SE	amazon_int	fact_so	fact_inventory	amz_my_listing_eu
131108	Juvo+	PL	amazon_int	fact_so	fact_inventory	amz_my_listing_eu
131117	Juvo+	TR	amazon_int	fact_so	fact_inventory	amz_my_listing_eu
134101	Juvo+	UK	amazon_int	fact_so	fact_inventory	amz_my_listing_eu
210101	eForCity	US	ebay_us	fact_so	mfn_allocation	fact_listing,mfn_allocation
210201	eForCitySelect	US	ebay_us	fact_so	mfn_allocation	fact_listing,mfn_allocation
210301	EverydaySource	US	ebay_us	fact_so	mfn_allocation	fact_listing,mfn_allocation
210401	Itrimming	US	ebay_us	fact_so	mfn_allocation	fact_listing,mfn_allocation
210501	Accstation	US	ebay_us	fact_so	mfn_allocation	fact_listing,mfn_allocation
210601	Techflavour	UK	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
210701	accstation-select	US	ebay_us	fact_so	mfn_allocation	fact_listing,mfn_allocation
210801	peelplus	US	ebay_us	fact_so	mfn_allocation	fact_listing,mfn_allocation
211001	Juvale	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
211101	Blue Panda	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
211201	Bright Creations	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
211301	Sparkle & Bash	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
211401	Paper Junkie	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation

211501	Glamlily	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
211601	Farmlyn Creek	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
211701	Okuna Outpost	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
211801	Pipilo Press	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
211901	Zodaca	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
212001	Insten	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
212201	eForCity	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
212301	eForCity	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
212401	eForCity	CA	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
212501	eForCity	US	walmart_us	fact_so	mfn_allocation	fact_listing,mfn_allocation
212502	eForCity	US	walmart_us	fact_so	fact_inventory	fact_listing,wfs
212601	eForCity	CA	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
212701	eForCity	US	walmart_us	fact_so	mfn_allocation	fact_listing,mfn_allocation
213101	Insten Fulfillment	US	amazon_us	fact_so	fact_inventory	amz_my_listing_efc
213102	Insten Fulfillment	CA	amazon_us	fact_so	fact_inventory	amz_my_listing_efc
213103	Insten Fulfillment	MX	amazon_us	fact_so	fact_inventory	amz_my_listing_efc
213104	Insten Fulfillment	US	amazon_us	fact_so	mfn_allocation	fact_listing,mfn_allocation
213105	Insten Fulfillment	CA	amazon_us	fact_so	mfn_allocation	fact_listing,mfn_allocation
213701	eForCity	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
214401	eForCity	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
214601	eForCity	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
214701	eForCity	US	target_us	fact_so	mfn_allocation	fact_listing,mfn_allocation

214901	eForCity	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
215001	eForCity	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
215301	Talented Kitchen	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
215401	eForCity	US	other_mfn	fact_so	mfn_allocation	fact_listing,mfn_allocation
216102	Eforcity	CA	amazon_us	fact_so	mfn_allocation	fact_listing,mfn_allocation

3．Table and field explanation

table_name	column_name	column_definition
channel_system_dss	product_id	Global product id
channel_system_dss	channel_id	Global channel id
channel_system_dss	as_of_date	Which day of dss is calculated
channel_system_dss	dss1	Old product calculation is three valid 7 days of smoothed_qty calculation (6,2,1), new product calculation is the last 21 days of calculation (8,2,1)
channel_system_dss	dss2	DSS2 is calculated using the valid three weeks of data after oos, not all oos can calculate DSS2, because the condition of calculating DSS2 is that oos week is greater than or equal to 4, and oos week is less than 8, and then the valid 1st,2nd,3rd week data are used to participate in calculating DSS2, New product calculation Weighted average of smooth_qty.ewm(alpha=0.7) indices
channel_system_dss	dss3	DSS3 is calculated using the valid 3 weeks of data before the OOS, here it is not necessary to have OOS to calculate DSS3, because it is necessary to find 3 consecutive valid 3 weeks before the OOS date to calculate, the new product calculation is to find the average of the last 21 days

channel_system_dss	dss4	The average of the actual number of sales in the last 7 days. If today is day n, then dss4 = (sum(n-6 qty to n qty)/7). Day n-6 to day n is 7 calendar days, and the value of dss4 is calculated regardless of whether it is oos or intock.
channel_system_dss	dss1_week_list	Calculate the difference between the last day of the week of dss1 and the current day divided by 7
channel_system_dss	dss2_week_list	Calculate the difference between the last day of the week of dss2 and the current day divided by 7
channel_system_dss	dss3_week_list	For calculating the difference between the last day of the week of dss3 and the current day divided by 7
channel_system_dss	dss1_week_list2	Calculate the last day of the week of dss1
channel_system_dss	dss2_week_list2	Calculate the last day of the week of dss2
channel_system_dss	dss3_week_list2	Calculate the last day of the week of dss3
channel_system_dss	dss1_week1_qty	smoothed_qty for calculating the last day of the week of dss1
channel_system_dss	dss1_week2_qty	smoothed_qty for the last day of the week of dss1
channel_system_dss	dss1_week3_qty	smoothed_qty for the last day of the week of dss1
channel_system_dss	dss2_week1_qty	smoothed_qty for the last day of the week of dss2
channel_system_dss	dss2_week2_qty	smoothed_qty for the last day of the week of dss2
channel_system_dss	dss2_week3_qty	smoothed_qty for the last day of the week of dss2
channel_system_dss	dss3_week1_qty	smoothed_qty for the last day of the week of dss3
channel_system_dss	dss3_week2_qty	smoothed_qty for the last day of the week of dss3
channel_system_dss	dss3_week3_qty	smoothed_qty for the last day of the week of dss3
channel_system_dss	dss1_week1_qty_actual	Calculate the actual sales for the last day of the week of dss1
channel_system_dss	dss1_week2_qty_actual	Used to calculate the actual sales for the last day of the week of dss1

channel_system_dss	dss1_week3_qty_actual	Used to calculate the actual sales for the last day of the week of dss1
channel_system_dss	dss2_week1_qty_actual	For calculating the actual sales on the last day of the week of dss2
channel_system_dss	dss2_week2_qty_actual	For calculating the actual sales on the last day of the week of dss2
channel_system_dss	dss2_week3_qty_actual	For calculating the actual sales on the last day of the week of dss2
channel_system_dss	dss3_week1_qty_actual	For calculating the actual sales on the last day of the week of dss3
channel_system_dss	dss3_week2_qty_actual	For calculating the actual sales on the last day of the week of dss3
channel_system_dss	dss3_week3_qty_actual	For calculating the actual sales on the last day of the week of dss3
channel_system_dss	new_prod	Are there 3 consecutive 7 days, no is a new product
channel_system_dss	uds_load_date	UDS load date
channel_instock	product_id	Global product id
channel_instock	channel_id	Global channel id
channel_instock	as_of_date	Which day of dss is calculated
channel_instock	quantity	Number of sales
channel_instock	smoothed_qty	Replace the spike value with the average value, the data time interval is the past 1 year, is the day that order to spike, not to the day of the order to spike value
channel_instock	quantity_rolling	Sliding 7-day average for quantity
channel_instock	smoothed_qty_rolling	Sliding 7-day average for smoothed_qty
channel_instock	purchase_date	Order sell date
channel_instock	qty	Sellable inventory
channel_instock	instock	Available stock - 2 days sales(smoothed_qty_rolling) >= 5 pieces
channel_instock	active	listing status is active
channel_instock	instock_active	instock & active
channel_instock	reserved_instock	instock or (smoothed_qty >= 5 & (smoothed_qty>= rolling_qty_oos_adj * 0.7))
channel_instock	reserved_instock_active	reserved_instock & active
channel_instock	rolling_qty_oos_adj	instock_active is 0 is filled with the latest 1 day smoothed_qty_rolling, instock_active is 1 is filled with the same day smoothed_qty_rolling
channel_instock	uds_load_date	UDS load date