ECR ASIA PACIFIC
EFFICIENT CONSUMER RESPONSE

On Shelf Availability
Standards, Terms and Definitions Handbook
2013

A handbook to be used as a reference by
Retailers and Manufacturers addressing OSA

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The ECR Asia Pacific On-Shelf Availability Working Group

Efficient Consumer Response (ECR)

Efficient Consumer Response Asia Pacific (ECR AP) is an independent joint trade and industry body, which is co-chaired by representatives from the retail and manufacturing sectors.

It promotes the use of Efficient Consumer Response techniques in Fast Moving Consumer Good (FMCG) retailing to remove unnecessary costs from the supply chain and make the sector, as a whole, more responsive to consumer demand.

ECR AP following the Consumer Goods Forum focusing around five strategic priorities – Emerging Trends, Sustainability, Safety & Health, Operational Excellence and Knowledge Sharing & People Development

Under operational excellence one of the initiatives is the OSA working group and it is collaboration between members, Accenture, Unilever and Diageo.

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Accenture

Accenture is a global management consulting, technology services and outsourcing company. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. With more than 266,000 people in 49 countries, the company generated net revenues of US$28 billion for the fiscal year ended 31 August 2012.

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Metro

Metro Cash & Carry – a unique business-to-business concept
Metro Cash & Carry is the top selling sales brand of METRO GROUP and operates over 700 outlets in 30 countries. The unique wholesale business-to-business model of Metro Cash & Carry is focused on professional customers such as hotels, restaurants, caterers, small and mid-sized retailers as well as other companies and offices. One of the cornerstones of the concept of Metro Cash & Carry is to establish direct procurement from local suppliers and to offer an "all under one roof" concept with 90 percent locally sourced products to its professional customers.

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Coca-Cola

The Coca-Cola Company is the world's largest beverage company, refreshing consumers with more than 500 sparkling and still brands. Led by Coca-Cola, the world's most valuable brand, its portfolio features 16 billion-dollar brands including Diet Coke, Fanta, Sprite, Coca-Cola Zero, vitaminwater, Powerade, Minute Maid, Simply, Georgia and Del Valle. Globally, The Coca-Cola Company is the No. 1 provider of sparkling beverages, ready-to-drink coffees, and juices and juice drinks. Through the world's largest beverage distribution system, consumers in more than 200 countries enjoy its beverages at a rate of more than 1.8 billion servings a day.

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Introduction

OSA has been a hot topic for years globally and while initiatives are conducted and businesses do track KPIs, OSA remains high in APAC. Trading partners tend to measure and track out of stocks using different approaches, resulting in a variety of benchmarks that don't make collaboration and comparisons easy.

The ECR APAC OSA Report published in 2012 pointed to collaboration and speaking a common language as the key way to improving On Shelf Availability. As a result the ECR AP OSA Standards, Terms and Definition Forum was conducted to agree on a systematic way of addressing and standardising OSA terms, resulting in the creation of this handbook.

Approach

Development of the handbook was kicked off with the OSA Standards, Terms & Definitions Forum where Retailers and Manufacturers came together to provide their insights and best practices.

A working group consisting of ECR, Coca-Cola, Metro and Accenture was formed to shape the final version of the handbook which was then shared with the Forum participants for a peer review. A key component of its development was the involvement of a large group of manufacturers and retailers across APAC, and at different levels of the business - to ensure the handbook was practical and relevant for operational use.

OSA Standards, Terms & Definition Forum Participants	
Retailers	Manufacturers
Wal Mart	Coca-Cola
	Diageo
Fairprice	Nestle
	L'Oreal
Tesco	Pokka
Metro	Unilever

Objective

The handbook provides a comprehensive definition of OSA terms, measurement approaches and root causes. Having 1 set of Standards, Terms and Definitions across APAC will help both manufacturers and retailers:

- Collaborate more effectively with retailers/ manufacturers by speaking the same OSA language
- Speed up OSA initiatives by reaching alignment from the very start
- Access benchmarks that are meaningful when utilizing ECR AP scorecards and surveys

The handbook is intended to be used as a reference point and is not a study into OSA. For further information, refer to the ECR APAC OSA Report (2012).

1. On Shelf Availability Terms & Definitions

OSA Terms & Definitions

Out Of Shelf (OOS) event

Definition

Situation where an SKU:

- has shelf space and price tag
- is not found in saleable condition anywhere in the store; Not even 1 unit of undamaged stock, visibly accessible on shelf by consumers/during manual Gap-check

OOS events can be grouped down in several ways e.g. by product categories (e.g. bakery, dairy, frozen) or for specialist groups (e.g. organics, Christmas)

Formula

Store = Any like for like store

OOS_A = Out of Stock event at Store A

SKU_A = Active item open for ordering at Store A

Day = working day within period of initiative

$$\textbf{OOS Rate} = \frac{(OOS_A + OOS_B)_{Day1} + (OOS_A + OOS_B)_{Day2} + .. + (OOS_A + OOS_B)_{Dayi}}{(\sum SKU_A + \sum SKU_B) * \sum Days}$$

Partial OOS event (POOS)

Definition

Situation where an SKU has multiple locations in store (e.g. promotion display) and there is an OOS at 1 or more of the locations, but not all.

Formula

As per OOS Rate formula but taking an POOS event instead of an OOS event

Promo OOS event

Definition

Refers to an OOS for a promotional item.

Promotional items need to be tracked separately as they tend to have higher OOS rates vs non-promo items.

Formula

As per OOS Rate formula but taking a PromoOOS event instead of an OOS event

Example (OOS, POOS, PromoOOS)

The example below illustrates a simple case of calculating OOS and can be directly applied for calculating POOS and PromoOOS by replacing the OOS event with a POOS event or a PromoOOS event

- Physical audit conducted for 2 stores over a 3 day period.
- Each store has 100 active SKUs.
- OOS was identified for 5 SKUs.

	# of Gaps on shelf (OOS)					
	Day 1		Day 2		Day 3	
	Store A	Store B	Store A	Store B	Store A	Store B
SKU 1	1	3	3	2	4	1
SKU 2	2	1	1	1	0	0
SKU 3	1	2	2	3	2	3
SKU 4	0	2	0	0	0	2
SKU 5	4	1	3	2	1	0
Total	**8**	**9**	**9**	**8**	**7**	**6**

$$\textbf{OOS Rate} = \frac{(8+9)_{Day1} + (9+8)_{Day2} + (7+6)_{Day3}}{(100+100)*3} = 8\%$$

On Shelf Availability (OSA)	**Definition**
	Inverse of an OOS. Situation where at least 1 unit of undamaged stock is visibly accessible on shelf by the shopper.
	Formula
	1- OOS Event Rate (%)
OOS Duration	**Definition**
	Total time that an SKU was out of OOS during a given measurement period
	Formula
	Period = hours or days **OOS Duration rate** = $\frac{\sum(\text{period the item is OOS})}{\text{Selling period of item}}$
	Example
	If a store operates 6 days a week and item was OOS for 1 day, then the OOS duration rate is 1/6 = 17%
OOS Frequency	**Definition**
	The number of OOS events for an item over a given period of time. Example: an SKU was unavailable 6 times when checked weekly over 12 month period.

Point Of Sales (POS) Out of Stock		
Term	**Definition**	**Formula**
Full POS OOS event	Situation with 0 sales on the day where sales are expected (based on prior 13 wks POS or lifecycle of SKU)	**Full POS OOS rate**= # of Full POS OOS vs. total # of active assortment (%)
Near POS OOS event	Situation where sales are below threshold (median of daily sales) for the day (taking into account seasonality of the category and traffic in the store to modulate expected sales) and at risk for a Full OOS situation A point below the threshold is set to indicate the Near OOS and will differ between different categories of items • Fast vs. slow moving categories will have a different NOOS points Example: a fast moving SKU might consider 5 units on the shelf as a NOOS whereas a slow moving might consider 1 as NOOS	**Near POS OOS rate**= # of Near POS OOS vs. total # of active assortment (%)

2. Out of stock calculation methodology

There are 3 approaches to calculating OOS:

A. Physical Audit

B. Perpetual Inventory Check

C. POS estimation

More than one of these approaches can be used simultaneously for an initiative. When results are compared root causes can be easier identified.

<table>
<tr><th>A. Physical Audit</th><th>Definition</th><th>Method</th></tr>
<tr><td rowspan="5"></td><td>Manual audit collection for selected stores and SKUs.
Stocks required to be planogramed, have a price label and planned merchandising shelf space</td><td>• Define
- measurement assortment
- stores to be audited
- duration and frequency of audit / random store check
- mystery shopper/internal audit/3rd party audit
• Auditor checks for “holes” “gaps” (OOS)- i.e. a shelf tag should be in place with an SKU behind it, but the shelf is empty (or if product is available it is hidden to the shopper).</td></tr>
<tr><td colspan="2">Example</td></tr>
<tr><td colspan="2">Data collection frequency
3 months audit period.
6 - 7 times a week/ Daily/ 1-2 times per day
Days & timings:
• On high traffic days, before general peak traffic.</td></tr>
<tr><td>Primary Advantages</td><td>Key Limitations</td></tr>
<tr><td>• Can facilitate instant follow up which may determine the cause of the OOS so it can be addressed and checked on broader scale if appropriate (e.g. data integrity issue).
• Effective when targeting smaller range of items (e.g based on 80-20 rule for critical items) – known problem areas
• Results are more trusted (“seeing the holes”)
• Does not require retailer/supplier/3rd party IT system integration
• Supports fixing ongoing issues where the issue and problem areas (store / product) are known and can be targeted.
• Allows for assessment across multiple points of engagement (primary & secondary placements)</td><td>• Does not give much perspective of loss of sales or impact on consumers. All holes are counted equally irrespective of rate of sale, item value, and duration of OOS. For example an OOS of a slow moving item, which could have no shopper wanting to buy it will count the same as an OOS of a fast moving item that could have many potential shoppers wanting to buy it.
• High cost of labour (most costly method). Can make scaling to large store / product base difficult. Lack of frequency and breadth then diminishes worth of data
• Subject to many opportunities for human error - e.g. no gap is perceived when similar looking product behind wrong shelf tag, hole is filled with another item and shelf tag replaced
• Timeliness of data. May require time to get the physical audit back, processed and analysed</td></tr>
</table>

<table>
<tr><td rowspan="3">B. Perpetual Inventory check</td><td>Definition</td><td>Method</td></tr>
<tr><td>Review of Perpetual Inventory (PI) data periodically to check stock on hand for all SKUs available in the store inventory system</td><td>Retailer to create report with stock on hand (SOH) to determine the stock level in the store.

An OOS occurs when stock on hand for an SKU is 0</td></tr>
<tr><td>Primary Advantages</td><td>Key Limitations</td></tr>
<tr><td></td><td>• System based, therefore is easily scalable and facilitates standardised reports. Eliminates human errors.

• Provides level of insight into OOS duration – particularly if captured daily – which can then be used to consider cost of lost sales, consumer impact etc.

• Can be used to identify potential root causes and solutions – eg if promoted line goes OOS midweek, may need twice weekly delivery or a larger initial order.

• Process may have been in place for extended time, allowing for comparison of data over long periods.</td><td>• Is unable to differentiate between Out of Stock in store and Out of Stock on shelf, i.e. can't differentiate an Out of Stock if product is hidden in back room or on wrong shelf

• Is subject to inaccuracy where issues such as theft, damages, miss-scans, phantom inventory etc mean inventory has been lost but is still showing in the PI system.

• Incorrect PI can also overstate OOS i.e. system inventory that is <=0 but physically available can lead to overstocking</td></tr>
<tr><td rowspan="2">C. Point of Sales estimation</td><td>Definition</td><td>Method</td></tr>
<tr><td>Track out of stocks through point of sale data.

• Customer scanned data which contain product rate of sale information are captured over time.

• Algorithms linked to the point of sale systems estimate whether and when a product goes OOS by the fact that it has not been scanned during an anticipated period.</td><td>For each store the iterative process is:

• Select days for scanning (example: scanning daily sales from the last 13 Fridays)

• Fix the Median (threshold) of the daily sales for each day in the week.

• Take into account seasonality of the category and traffic in the store to modulate expected sales

• Set point that indicates a Near OOS (Fast vs. slow moving categories will have a different point)

• When the product next scans, the system calculates how long the full OOS and Near OOS duration was and the number of estimated missed sales this equates to. From this data, all OOS rate calculations can be performed, and, by examining patterns, root causes of the OOS can be suggested. Root causes are only ascertained if coupled with inbound delivery data from the DC/ supplier and store inventory data.

<table><tr><td>Full POS OOS</td><td>0 sales on the day where sales are expected (based on POS)</td></tr><tr><td>Near POS OOS</td><td>Sales below threshold for the day and near Full POS OOS</td></tr></table></td></tr>
</table>

C. Point of Sales estimation	Primary Advantages	Key Limitations
	• **Highly scalable** and easy to aggregate / disaggregate data (SKU / Category/ Store / Brand etc) • If estimates are accurate, then gives **precise views of lost sales/revenue** from OOS and facilitates prioritizing • Provides greater insight into potential root causes of OOS • **Measures "On-shelf" availability** rather than "In -store" availability, and if used in conjunction with PI data can show issues in shelf replenishment and maintenance. • Studies have shown to be **85-90% accurate**, similar to manual audits. • **Low cost** once set up and low maintenance for ongoing tracking • When process in place for extended time, it allows for **comparisons** of performance data **over long periods of time**. • POS solution allows for next day analysis; closer to real time data vs physical audit which will have a lag	• For slower moving lines, an item may go **OOS but is not picked up** as no sales were estimated to have been missed in the period it was OOS (Nielsen model takes prior 13 wks sales trend. That then compensates for slow movers) • Based on historical sales rates, therefore **may not be accurate where sales are erratic**, for new lines etc, and the system's calculations are dependent on accuracy of historical data • **May not be trusted** as calculations are theoretical from a system – i.e not "seen with my own eyes".

Approach Comparison

Approach providing biggest advantage for attribute area

Area	A. Physical Audit	B. Perpetual Inventory check	C. Point of Sales estimation
High Accuracy			
Cost effectiveness			
Quick follow up			
Large range/number of SKUS			
Trusted results (perception)			
Tracking for multiple locations in store			
Scalability (range & duration)			
Easier Root cause detection			
On shelf vs In store detection			
Impact to lost sales/revenue			

3. Out of stock Root cause tree

In order for a project manager of an OSA initiative to successfully provide a solution it is necessary to understand the root cause of the Out of Shelf situation. The following loss tree contains a list of the most common root causes and their associated problem areas. This is not an exhaustive list and can be expanded based on each company's individual circumstances.