

# Domain knowledge Retail industry

Retailers are known for innovation. The most innovative retailers of today are those who are using business intelligence to gain sustained competitive advantage. These retailers have also realized that BI can be used strategically only when it is implemented with utmost care and complete support from the top management. We believe that unless all the user-groups are consulted and the objectives clearly defined, BI solution cannot be a success. Also, like any other technology solution, BI cannot exist in vacuum. We strongly believe that it is just a means to an end. The wisdom, gathered by analyzing huge amount of data, should reach every corner of the retail organization. The end objective is to convert this wisdom into effective action. And for this the entire organization should be able to leverage the business intelligence network.

The information economy puts a premium on high quality actionable information - exactly what Business Intelligence (BI) tools like data warehousing, data mining, and OLAP can provide to the retailers. A close look at the different retail organizational functions suggests that BI can play a crucial role in almost every function. It can give new and often surprising insights about customer behavior; thereby helping the retailers meet their ever-changing needs and desires. On the supply side, BI can help retailers identify their best vendors and determine what separates them from not so good vendors. It can give retailers better understanding of inventory and its movement and also help improve storefront operations through better category management. Through a host of analyses and reports, BI can also improve retailers' internal organizational support functions like finance and human resource management.

## Introduction

Though 'You've got mail' is essentially a love story, it says a thing or two about the retail industry too; and for the retailers it's no love story. As quite sensitively portrayed in the movie, large chain superstores have nearly forced small independent retailers to close down. At the same time, these large retailers have gained considerable power in the supply chain. They are increasingly dictating terms to the retailers and inventing new ways of attracting customers. But to hold the customer's imagination for long has remained an elusive dream. Changing tastes and preferences, increasing competition, demographic shifts, and the simple "let's try something new" attitude have all been blamed for customer disloyalty. No wonder retailers today are going that extra mile to reach and understand the customer. They are also getting their act together by streamlining the supply chain, improving storefront operations and actively exploring alternative channels like the

Internet.

Technology has played a key role in retailers' effort to compete in this volatile market. Sophisticated retailers have quickly evolved from basic automation to embrace new technologies like CRM, business intelligence, etc. This paper explores the various applications of business intelligence in the retail industry. Business intelligence refers to a host of technologies like data warehousing, online analytical processing (OLAP), and data mining, which seek to turn data into actionable information.

### **Key Trends in the Retail Industry**

1) Rise of superstores: Last two decades has seen the phenomenal rise of the 'Chain of superstores' in both the US and Europe. Growing consolidation and globalization in the sector has seen the bargaining power of the retailer increase in the supply chain. We believe that in order to counter saturated domestic markets and increasing competition, leading superstores would continue to expand globally. WalMart acquired Britain's third largest supermarket chain ASDA, to establish itself in Europe. Similarly the grocery giant Safeway has significant presence in both the US and UK.

2) Customer Relationship Management as a key driver: Smart retailers have reoriented their business around the customer. In the mad rush to acquire new customers, they have realized it is equally important to retain the existing ones. Increased interaction and sophisticated analysis techniques have given retailers unprecedented access to the mind of the customer; and they are using this to develop one-to-one relation with the customer, design marketing and promotion campaigns, optimize store-layout, and manage e-commerce operations. For example Safeway uses its ABC loyalty card to record each customer's individual transactions. This coupled with other relevant data has given Safeway tremendous knowledge about customer buying patterns - knowledge that has significantly helped in augmenting customer loyalty.

3) Supply Chain Management as a key driver: Increasingly retailers are handling their inbound logistics by setting up their own distribution networks. We believe that a vital criterion for success in future would be the ability to harness worldwide distribution and logistics network for purchasing. This global supply chain should ensure high levels of product availability that consumers want to buy.

4) Rise of Online Retailing: Some say that the Internet will completely change the face of retailing; others believe that the 'touch and feel' factor would ultimately dominate and the Net will have only a marginal impact on the shopping behavior. Probably the truth lies somewhere in between. But one thing is sure - online retailing is here to stay. Many retailers realized that and have rushed to start their own e-commerce web site. We believe that the key to success would be the effectiveness with which retailers integrate the Internet with their existing business model.

## Business Intelligence Solutions for the Retail Industry

Business Intelligence (BI) refers to the ability to collect and analyze huge amount of data pertaining to the customers, vendors, markets, internal processes, and the business environment. A data warehouse is the corner stone of an enterprise-wide business intelligence solution; various analytical (OLAP) and data mining tools are used to turn data - stored in the data warehouse - into actionable information.



### Delivering Customer Value

The figure illustrates the different functions in a typical retail organization. Customer Relationship Management (CRM) forms the focal point from where the vital insights gained about the customers - using BI tools -- are absorbed in the entire organization. BI also plays a critical role in all the other retail functions like supply chain management, store front operations, and channel management. This paper is an introduction to the various BI applications in the different functions in the retail organization, including support functions like finance and human resources.

### Customer Relationship Management

The CRM strategy should include:

- (a) Operational CRM: Automating interaction with the customers and sales force, and
- (b) Analytical CRM: Sophisticated analysis of the customer data generated by operational CRM and other sources like POS transactions, web site transactions, and third-party data providers.

A typical retail organization has a huge customer base and often customer's needs are fairly differentiated. Without the means to analyze voluminous customer data, CRM strategy is bound to be a failure. Hence, we believe that Analytical CRM forms the core of a retailer's customer relationship strategy. Marketing and sales functions are the primary beneficiaries of Analytical CRM and the main touch points from where the insights gained about the customer is absorbed in the organization.

Analytical CRM uses the key business intelligence tools like data warehousing,

data mining, and OLAP to present a unified view of the customer. Following are some of the uses of Analytical CRM:

1) Customer Segmentation: Customer segmentation is a vital ingredient in a retail organization's marketing recipe. It can offer insights into how different segments respond to shifts in demographics, fashions and trends. For example it can help classify customers in the following segments

2) Customers who respond to new promotions

3) Customers who respond to new product launches

4) Customers who respond to discounts

5) Customers who show propensity to purchase specific products

6) Campaign/ Promotion Effectiveness Analysis: Once a campaign is launched its effectiveness can be studied across different media and in terms of costs and benefits; this greatly helps in understanding what goes into a successful marketing campaign. Campaign/ promotion effectiveness analysis can answer questions like:

1) Which media channels have been most successful in the past for various campaigns?

2) Which geographic locations responded well to a particular campaign?

3) What were the relative costs and benefits of this campaign?

4) Which customer segments responded to the campaign?

5) Customer Lifetime Value: Not all customers are equally profitable. At the same time customers who are not very profitable today may have the potential of being profitable in future. Hence it is absolutely essential to identify customers with high lifetime value; the idea is to establish long-term relations with these customers.

The basic methodology used to calculate customer lifetime value is - deduct the cost of servicing a customer from the expected future revenue generated by the customer, add to this the net value of new customers referred by this customer, and discount the result for the duration of the relationship. Though this sounds easy, there are a number of subjective variables like overall duration of the customer's relation with the retailer, gap between intermediate cash flows, and discount rate. We suggest data

mining tools should be used to develop customized models for calculating customer lifetime value.

1) Customer Loyalty Analysis: It is more economical to retain an existing customer than to acquire a new one. To develop effective customer retention programs it is vital to analyze the reasons for customer attrition. Business Intelligence helps in understanding customer attrition with respect to various factors influencing a customer and at times one can drill down to individual transactions, which might have resulted in the change of loyalty.

2) Cross Selling: Retailers use the vast amount of customer information available with them to cross sell other products at the time of purchase. This effort is largely based on the tastes of a particular customer, which can be analyzed using BI tools based on previous purchases. Retailers can also 'up sell' - sell more

profitable products - to the customer at the time of contact.

3) Product Pricing: Pricing is one of the most crucial marketing decisions taken by retailers. Often an increase in price of a product can result in lower sales and customer adoption of replacement products. Using data warehousing and data mining, retailers can develop sophisticated price models for different products, which can establish price - sales relationships for the product and how changes in prices affect the sales of other products.

4) Target Marketing: Retailers can optimize the overall marketing and promotion effort by targeting campaigns to specific customers or groups of customers. Target marketing can be based on a very simple analysis of the buying habits of the customer or the customer group; but increasingly data mining tools are being used to define specific customer segments that are likely to respond to particular types of campaigns.

### **Supply Chain Management & Procurement**

Supply chain management (SCM) promises unprecedented efficiencies in inventory control and procurement to the retailers. With cash registers equipped with bar-code scanners, retailers can now automatically manage the flow of products and transmit stock replenishment orders to the vendors. The data collected for this purpose can provide deep insights into the dynamics of the supply chain.

However, most of the commercial SCM applications provide only transaction-based functionality for inventory management and procurement; they lack sophisticated analytical capabilities required to provide an integrated view of the supply chain. This is where data warehousing can provide critical information to help managers streamline their supply chain. Some of the applications of BI in supply chain management and procurement are:

1) Vendor Performance Analysis: Performance of each vendor can be analyzed on the basis of a number of factors like cost, delivery time, quality of products delivered, payment lead time, etc. In addition to this, the role of suppliers in specific product outages can be critically analyzed.

2) Inventory Control (Inventory levels, safety stock, lot size, and lead time analysis): Both current and historic reports on key inventory indicators like inventory levels, lot size, etc. can be generated from the data warehouse, thereby helping in both operational and strategic decisions relating to the inventory.

3) Product Movement and the Supply Chain: Some products move much faster off the shelf than others. On-time replenishment orders are very critical for these products.

Analyzing the movement of specific products - using BI tools - can help in predicting when there will be need for re-order.

4) Demand Forecasting: It is one of the key applications of data mining. Complex demand forecasting models can be created using a number of factors like sales figures, basic economic indicators, environmental conditions, etc. If correctly implemented, a data warehouse can significantly help in improving the retailer's

relations with suppliers and can complement the existing SCM application.

**Storefront Operations** The information needs of the store manager are no longer restricted to the day to day operations. Today's consumer is much more sophisticated and she demands a compelling shopping experience. For this the store manager needs to have an in-depth understanding of her tastes and purchasing behavior. Data warehousing and data mining can help the manager gain this insight. Following are some of the uses of BI in storefront operations:

1) Market Basket Analysis: It is used to study natural affinities between products. One of the classic examples of market basket analysis is the beer-diaper affinity, which states that men who buy diapers are also likely to buy beer. This is an example of 'two-product affinity'. But in real life, market basket analysis can get extremely complex resulting in hitherto unknown affinities between a number of products.

This analysis has various uses in the retail organization. One very common use is for in-store product placement. Another popular use is product bundling, i.e. grouping products to be sold in a single package deal. Other uses include designing the company's e-commerce web site and product catalogs.

2) Category Management: It gives the retailer an insight into the right number of SKUs to stock in a particular category. The objective is to achieve maximum profitability from a category; too few SKUs would mean that the customer is not provided with adequate choice, and too many would mean that the SKUs are cannibalizing each other. It goes without saying that effective category management is vital for a retailer's survival in this market.

3) Out-Of-Stock Analysis: This analysis probes into the various reasons resulting into an out of stock situation. Typically a number of variables are involved and it can get very complicated. An integral part of the analysis is calculating the lost revenue due to product stock out.

### **Alternative Sales Channels**

The success of a retailer in future would depend on how effectively it manages multiple delivery channels like the Internet, interactive TV, catalogs, etc. A single customer is likely to interact with the retailer along multiple channels over a period of time. This calls for an integrated strategy to serve the customer well, which requires smooth flow of information across channels. To ensure smooth flow of information customer data needs to be collected from different channels in one data warehouse. Customer relationship strategy can then be built around this customer-centric data warehouse. We have already seen how Analytical CRM can provide analyses over the centralized data warehouse. In this section we will explore how data warehousing and data mining can improve the effectiveness of a channel.

1) E Business Analysis: The Internet has emerged as a powerful alternative

channel for established retailers. Increasing competition from retailers operating purely over the Internet - commonly known as 'e-tailers' - has forced the 'Bricks and Mortar' retailers to quickly adopt this channel. Their success would largely depend on how they use the Net to complement their existing channels. Web logs and Information forms filled over the web are very rich sources of data that can provide insightful information about customer's browsing behavior, purchasing patterns, likes and

dislikes, etc. Two main types of analysis done on the web site data are:

2) Web Log Analysis: This involves analyzing the basic traffic information over the e-commerce web site. This analysis is primarily required to optimize the operations over the Internet. It typically includes following analyses:

3) Site Navigation: An analysis of the typical route followed by the user while navigating the web site. It also includes an analysis of the most popular pages in the web site. This can significantly help in site optimization by making it more user- friendly.

4) Referrer Analysis: An analysis of the sites, which are very prolific in diverting traffic to the company's web site.

5) Error Analysis: An analysis of the errors encountered by the user while navigating the web site. This can help in solving the errors and making the browsing experience more pleasurable.

6) Keyword Analysis: An analysis of the most popular keywords used by various users in Internet search engines to reach the retailer's e-commerce web site.

7) Web Housing: This involves integration of web log data with data from other sources like the POS transactions, third party data vendors etc. Once the data is collected in a single customer centric data warehouse, often referred to as 'Web house', all the applications already described under CRM can be implemented. Often a retailer wants to design specific campaigns for users who purchase from the e-commerce web site. In this case, segmentation and profiling can be done specifically for the 'e-customers' to understand their needs and browsing behavior. It can also be used to personalize the content of the e-commerce web site for these users.

1) Channel Profitability: Data warehousing can help analyze channel profitability, and whether it makes sense for the retailer to continue building up expertise in that channel. The decision of continuing with a channel would also include a number of subjective factors like outlook of key enabling technologies for that channel. For example M commerce – though not a very profitable channel today – has the potential to be a major alternative channel in the years to come.

2) Product – Channel Affinity: Some product categories sell particularly well on certain channels. Data warehousing can help identify hidden product-channel affinities and help the retailer design better promotion and marketing campaigns.

### **Enterprise Management**

This typically involves the various activities performed by the top management; and the role of data warehousing and data mining is to provide the top

management with reports and analyses to meet their decision-making requirements. One possible BI application in this area is:

1) Dashboard Reporting on KPIs: Key performance indicators like contribution margin, response rate, campaign costs, customer life time value can be presented in dashboard reports to the top management to facilitate decision-making process.

Also alerts can be triggered if any KPI reaches a pre-defined threshold level. These reports can incorporate retail industry benchmarks, provided by third party researchers, which can be used as threshold levels for various KPIs.

### **Human Resources**

Data warehousing can significantly help in aligning the HR strategy to the overall business strategy. It can present an integrated view of the workforce and help in designing retention schemes, improve productivity, and curtail costs. Some BI applications in HR are:

1) Human Resource Reports/ Analytics: Reports and analysis can be generated to support an integrated view of the workforce. Various analyses include staff movement and performance, workforce attrition by store, workforce performance by store, compensation and attrition, and other customized analyses and reports. The HR data can be integrated with benchmark figures for the industry and various reports can be generated to measure performance vis-à-vis industry benchmarks.

2) Manpower Allocation: This includes allocating manpower based on the demand projections. According to the seasonal variation in demand, temporary manpower can be hired to maintain service levels. The demand levels vary within one working day also, which can be used to allocate resources accordingly.

3) HR Portal: Employers need to maintain accurate employee data, which can be viewed by the employees for information relating to compensation, benefits, retirement facilities, etc. Payroll data can be integrated with data from other human resource management applications in the HR data warehouse. This data can then be circulated within the organization through the HR portal.

4) Training and Succession Planning: Accurate data about the skill sets of the workforce can be maintained in the data warehouse. This can be used to design training programs and for effective succession planning.

### **Finance and Fixed Asset Management**

The role of financial reporting has undergone a paradigm shift during the last decade. It is no longer restricted to just financial statements required by the law; increasingly it is being used to help in strategic decision making. Also, many organizations have embraced a free information architecture, whereby financial information is openly available for internal use.

Many analytics described till now use financial data. Many companies, across industries, have integrated financial data in their enterprise wide data warehouse or established separate Financial Data Warehouse (FDW). Following are some of



the uses of BI in finance:

- 1) Budgetary Analysis: Data warehousing facilitates analysis of budgeted versus actual expenditure for various cost heads like promotion campaigns, energy costs, salary, etc. OLAP tools can provide drill down facility whereby the reasons for cost overruns can be analyzed in more detail. It can also be used to allocate budgets for the coming financial period.
- 2) Fixed Asset Return Analysis: This is used to analyze financial viability of the fixed assets owned or leased by the company. It would typically involve measures like profitability per sq. foot of store space, total lease cost vs. profitability, etc.
- 3) Financial Ratio Analysis: Various financial ratios like debt-equity, liquidity ratios, etc. can be analyzed over a period of time. The ability to drill down and join inter-related reports and analyses – provided by all major OLAP tool vendors – can make ratio analysis much more intuitive.
- 4) Profitability Analysis: This includes profitability of individual stores, departments within the store, product categories, brands, and individual SKUs. A major component of profitability analysis is the costs incurred by stores/ departments and the cost of acquiring, storing and allocating shelf space to particular product categories, brands, or SKUs. It goes without saying that profitability analysis has an extremely universal appeal and would be required by other groups within the retail organization

**Key Work Areas in Retail:**

<p><b>Advertising &amp; Promotion</b></p> <ul style="list-style-type: none"> <li>Ad Planning</li> <li>PR &amp; Publicity</li> <li>Types of Promotions</li> </ul> <p><b>Customer Service</b></p> <ul style="list-style-type: none"> <li>Attitude &amp; Aptitude</li> <li>Customer Relationship Management</li> <li>Problem Resolution</li> <li>Services</li> </ul> <p><b>General Knowledge</b></p> <ul style="list-style-type: none"> <li>Development &amp; Trends</li> <li>Industry Segments</li> </ul> <p><b>Loss Prevention</b></p> <ul style="list-style-type: none"> <li>Prevention &amp; Recovery</li> <li>Recognizing Theft</li> <li>Safety</li> <li>Statistics</li> </ul> <p><b>Management &amp; Controls</b></p> <ul style="list-style-type: none"> <li>Budgets &amp; Forecasts</li> <li>Coaching</li> <li>Inventory Control</li> <li>Scheduling &amp; Time Management</li> </ul>	<p><b>Retail Math</b></p> <ul style="list-style-type: none"> <li>Cash Register</li> <li>Financial Reports</li> <li>Markdowns &amp; Discounts</li> <li>Markup</li> </ul> <p><b>Selling</b></p> <ul style="list-style-type: none"> <li>Additional Sales</li> <li>Approach</li> <li>Closing</li> <li>Consumer Behavior</li> <li>Handling Objections</li> <li>Product Knowledge</li> </ul> <p><b>Technology &amp; Systems</b></p> <ul style="list-style-type: none"> <li>Electronic Commerce</li> <li>Fraud &amp; Security</li> <li>Store Systems</li> </ul> <p><b>Visual Merchandising</b></p> <ul style="list-style-type: none"> <li>Adjacencies</li> <li>Housekeeping</li> <li>Setup</li> <li>Theme / Color</li> </ul>
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Staffing	
<b>Merchandising</b>	
Buying	
Handling	
Planning	
Pricing	

## Retail Math: Talking The Talk Of Retail Business!

There is dispute among segments of the retail industry as to the retail math terminology and calculations used in the business. There is definitely a need for a "common language" for the industry as it pertains to calculations and terms!

But, the following list of 15 different retail math formulas and explanations is the most common. It is the "language" used by The Hallman Company in working with our clients in formulating and guiding them in implementing their retail business plans:

Here are the "top 15" retail math formulas:

$$(1) \$ \text{ Cost} = \$ \text{ Retail} \times (100\% - \text{Markup } \%)$$

Example: \$100 retail item with 56% markup has a cost of \$44

$$(100\% - 56\% = 44\%)$$

$$\$100 \text{ retail} \times .44 = \$44.$$

Note: This retail math formula is useful for calculating the most you can pay for an item you need to retail at \$100, but want a markup of 56%. Use this retail math formula in cost negotiations with vendors.

$$(2) \text{ Cost of Goods Sold (COGS)} = \text{Beginning Inventory} + \text{Purchases} - \text{End Inventory}$$

Here is another way of stating the same formula:

inventory at beginning of year + purchases or additions during the year = goods available for sale - inventory at end of year = cost of goods sold

Example: Inventory @ cost Beginning of year = \$1,000,000.

Purchases @ cost + freight During year = \$550,000.

Total available (\$1,000,000. + \$550,000.) = \$1,550,000.

Inventory On Hand end of year @ cost = \$900,000.

Cost of Goods Sold (\$1,550,000 - \$900,000) = \$650,000.

$$(3) \$ \text{ Retail} = \$ \text{ Cost} / (100\% - \text{markup } \%)$$

Note: This retail math formula is used to determine the retail price to mark an item, when the cost and the desired markup % is known.

Example: Cost on an item is \$44. Desired markup is 56%.  $100\% - 56\% = 44\%$  cost complement to the retail markup. Cost \$ of \$44 is divided by cost complement of .44 to arrive at target retail price of \$100. ( $\$44 \text{ divided by } .44 = \$100$ )

$$(4) \$ \text{ Markdown} = \text{Original retail price} - \text{lower retail price}$$

Example: Original retail price \$100. New lower price \$80. The markdown is \$20. This 20% discount becomes a markdown expense of 25% because the \$20 must be

divided by the \$80 sale to be expressed as a % to sales, the way other expenses are expressed as a % to sales.

(5) GMROI (Gross Margin Return On Investment) = Gross Margin \$ divided by average inventory at cost.

Example: Annual Gross Margin \$ of \$400,000 with an average inventory cost of \$150,000 would have a GMROI of \$2.67; in other words, for each dollar invested in inventory on average, the \$1 invested returned \$2.67. (\$400,000 divided by \$150,000.) *This is a particularly important retail math formula. Most retailers do not pay enough attention to GMROI).*

(6) Gross Margin = Sales - cost of good sold (Maintained Margin, supposed referred to as Gross Margin, is the initial margin or markup less the cost of markdowns at cost.)

(7) Margin % = (\$ Retail - \$ Cost) / \$ Retail

Example: \$100 retail - \$44 Cost = difference of \$56. The \$56 divided by \$100 = 56%

(8) Markdown % = \$ Markdown / \$ Net Sales

Example: \$20 markdown divided by \$80 net sale = 25% retail markdown expense.

(9) Markup = The difference between the cost of an item and its selling price. **This is the initial markup, or initial margin, before the impact of markdowns.**

*A merchant's job is to turn the inventory often, while preventing the depreciation of the initial markup.*

**The NUMBER 1 cause of excessive markdowns is OVER\_BUYING!** Proper inventory planning, provided for you by The Hallman Company, will prevent over-buying.

(10) Percent change in sales = This period of sales - Last period of sales / Last period of sales

Example: This period sales = \$1,000,000. Last period sales = \$900,000. \$1,000,000 - \$900,000 = \$100,000 increase. Increase of \$100,000 divided by last period sales of \$900,000 = 11.1% increase.

(11)Planned Stock = planned monthly sales x stock sales ratio

Example: Planned monthly sales of \$100,000 X planned stock to sales ratio of 4.0 = a planned first of (planned) month inventory of \$400,000. Averaging a 4 to 1 stock to sales ratio each month (4 months supply on hand) will result in achieving retail inventory turns of 3 per year.

(12)Stock Sales Ratio = B.O.M. \$ Stock / Sales for period

Note: B.O.M = beginning of month inventory. This is one retail math formula which can vary - many companies look at cost inventory- not retail, when computing turns. We recommend retail inventory management.

Example: As in example above, a B.O.M. stock of \$400,000 retail divided by that month's sales of \$100,000 = a stock to sales ratio of 4.0 to 1. (\$400,000 divided by \$100,000).

(13) Shrinkage = Difference between book and physical inventory. This is an "unknown" loss. A markdown is a loss, but if it is recorded, it is a known loss, not shrinkage. If an item is broken or otherwise damaged in stock and disposed of, and no markdown is recorded, it becomes an "unknown" loss, and is reflected as a

mysterious "shrinkage" in the inventory. Theft, of course, is unknown or unrecorded loss, or shrinkage.

(14) "inventory turnover." Turnover is the number of times you sell your average investment in inventory each year.

Turnover = net sales for period / average *retail* inventory for period. The "period" should be for at least 12 months.

Here is another way of stating the same formula:

Inventory turns : The retail sales for a period divided by the average inventory value at *retail* for that period. Most retailers are in the range of two to four turns a year.

**Properly prepared Inventory Plans will significantly increase your turns and decrease your average \$ tied up in inventory, while increasing your profits and boosting your cash flow.**

At The Hallman Company, we urge our clients to express inventory turnover at retail, not cost. It is relatively easy to speed up inventory turns at cost- just mark everything down to cost, sell it at cost, and you can "sell through" many more times during the period. But we must not only increase turnover, we must at the same time protect the markup.

For more information on having your Inventory Plans with Open To Buy custom-prepared for your retail business, submit the contact us form from this site.

(15) Breakeven = Fixed Costs \$ / (Net Sales - Contribution Margin %) Note: The Contribution Margin % (CM) is the sum of the Variable Expense % + Cost Of Goods Sold % *after* the impact of markdowns.

Breakeven Analysis: Simply stated, this formula indicates how much sales volume must be accomplished in order to cover all costs (fixed and variable), and begin generating a profit. In other words, it is the point in sales volume at which you have no profit and no loss.

Cost of Goods + Retail Markup = **Retail Price**

Retail Price – Cost of Goods = **Markup**

Retail Price – Markup = **Cost of Goods**

Beginning Inventory (in \$ or Sku Count) + Purchases – Ending Inventory = **Goods Sold (in \$ or Sku Count)**

Total Sales – Cost of Goods = **Gross Margin**

Gross Margin \$ / Average Inventory Cost = **Gross Margin Return On Investment**

Net Sales / Average Retail Inventory (Sku Count) = **Inventory Turnover**

Gross Sales – Returns & Allowances = **Net Sales**

Projected Sales + Projected Markdowns + Planned End of Month Inventory – Planned Beginning of Month Inventory = **Open to Buy (OTB)**

Units Sold / Units Received = **Sell Through %**

Beginning of Month Stock / Total Month Sales = **Stock to Sales Ratio**