Multi channel merchandise planning, allocation and distribution

A White Paper, Prologic plc

Abstract

Although merchandise planning systems for the multi-channel retail environment are relatively rare, they do exist. For the vast majority of retailers, however, these systems are either massively over-specified - and therefore commercially unviable - or fail to address the most pressing issues facing the retailer for other reasons. The result is a gap in the market for a solution which uniquely identifies and address these issues.

This paper introduces Prologic's multi-channel merchandise planning, allocation and distribution solution, and explains how it fills this gap. In particular, we discuss how and why the product has evolved, and outline the design requirements which have driven its development. Currently in pilot phase with Ted Baker, the product will become commercially available in the first-half of 2003.

Background

Today's retail market - and especially the fashion and lifestyle sector - is more competitive than ever before. And, increasingly, the battle for custom is being fought in a multi-channel environment, as companies seek to offer more highly-targeted products to ever-wider markets via e-tail and catalogue operations, as well as traditional bricks and mortar. Many also have wholesale arms.

These recent developments in routes to market make the planning function very difficult. In such a dynamic, cross-channel environment, many inventory-related questions - such as what stock should be allocated to which channel, and when, in order to maximise revenue and margin - become almost impossible to answer with total accuracy. At the same time, it becomes increasingly critical that such questions *are* answered with total accuracy. There can be a thin line between success and mere survival.

Furthermore, for retailers with international markets (and the e-tail revolution has driven this curve sharply upward in recent years) there is a need to supply and manage a different product matrix for each geographical territory. For such companies, the inventory planning and management issue is even more intractable. And even more critical.

Solutions - to date

It would be naïve to claim that the IT solutions sector has not recognised these issues and attempted to address them. It has. But its success, to date, has been partial at best. Currently, the available solutions fall into three broad categories:

Large-scale solutions

While suitable for a small minority (typically very large companies), these heavyweight solutions offer automated and powerful planning capability, but are highly over-specified for the vast majority of medium/large retailers. Usually commanding high entry-cost, these solutions represent a sledgehammer approach which is commercially unviable to all but a few.

Best-of-breed

Smaller, more functionally-targeted solutions are available from a number of vendors. This functionality, however, is delivered by bringing together a multiplicity of extant solutions - in other words, they are systems made up from other systems. In so far as this heterogenerous design philosophy works at all, it does so through software interfacing - a process which places inherent limitations on the flexibility, power and usefulness of the resulting system.

Semi-manual

By far the most common approach to planning is through the use of spreadsheets. Here, historical data is captured in spreadsheet format and manually analysed to provide a basis for decision-making. The limitations of such an approach are severe. Principally, they are:

- Significant time and effort is required for the analysis and reporting process. In fact, research* shows that over 80% of the time taken on most reporting projects is given to specifying, collecting and verifying the data required, before it can it be formatted and presented in a useful way. The speed and complexity of today's market dynamics mean that this approach, almost always, can only provide a poor approximation to the "truth"

- It is all but impossible to form a coherent single view of the business at any given time using spreadsheets.

However, despite these limitations, many companies rely on spreadsheets as a better-than-nothing approach, in the absence of a viable, and demonstrably effective, alternative.

*Martec 2001

Prologic

There is a fourth solution. While completely scaleable, and therefore suitable for use by even the largest retailer, the Prologic solution succeeds in delivering a multi-channel planning capability which is both a viable option for the majority of medium/large retailers and free of the constraints of best-of-breed systems.

This solution derives from 20 years of experience and product development in the fashion and lifestyle sector. It is the only such product to offer the benefits of a truly integrated approach (i.e. not best-of-breed), using a single database across every aspect of its operation. Currently in Beta trials with fashion retailer, Ted Baker, the system will be fully operational with the company by Q1 2003, and fully commercially available by the following quarter.

The structure and benefits of the Prologic solution are described more fully below.

System aims

Before discussing the Prologic solution in detail, it is worth reviewing the principal requirements of a system which will ideally address the needs of today's multi-channel retailer. Such a system will:

- Allow retailers to maximise revenue and margin by moving stock across channels on a real-time basis according to up-to-the-minute data
- Minimise warehouse space by eliminating the need to physically delimit stock on a per-channel basis
- Provide total visibility of all stock, in all parts of the pipeline
- Provide a single, coherent view of the business across merchandising, production, finance, retail and wholesale
- Allow management and control all aspects of an operation, from supply chain management to the Point of Sale, from a single integrated system
- Offer fast payback of investment

The way forward - Oracle technology

These requirements beg an obvious question: is such a system possible, even in principle? If so, what are the design imperatives of such a system?

Prologic recognised early on that the performance and flexibility characteristics of best-of-breed systems are inherently and fatally compromised by the need to interface the different data structures of each part of the whole. The “glue” software which allows each part of the system to work with the others has the effect of not only slowing the system down, but of fundamentally limiting the options on how raw data can be manipulated and used. Therefore, any system capable of providing a single, and truly accurate, view of an enterprise must eliminate such interfaces. In other words, each part of the system must be *designed* - at a basic level - to work with every other. This, in turn, means that every function must use the *same data from the same source*. Thus, such a system must be based on a single, integrated database.

The development environment

Now one of Oracle Corporation’s leading software partners, Prologic has been an Oracle ISV (Independent Software Vendor) since 1986, and was the company’s first UK business partner. Prologic has also been a dedicated supplier of solutions to the fashion and lifestyle sector since its formation in 1983. Today, Prologic CIMS - 100% written in the Oracle environment - is recognised as the industry’s only truly integrated solution designed to meet all the operational, reporting and business intelligence needs of a dynamic multi-channel fashion business.

The benefits of a single-database approach in a multi channel environment are many. Operating within a single integrated database means forecasting and planning information will be timely, accurate and easier to access. Providing cross channel commitment and stock visibility will enable the business to properly balance supply and demand and optimise stock utilisation.

Functional requirements

True integration is a fundamental design philosophy. There follows a discussion of the functional requirements of a system which can genuinely satisfy the needs of today’s multi channel retail environment. Prologic’s solution has been designed to meet all these requirements.

The remainder of this document provides an overview of how data should be generated and stored for the following areas:

- Strategy Planning
- Range Planning
- In-Season Planning and Allocation/Distribution

Strategy Planning

Strategy planning allows the business to create plans for Sales, Intake, Stock and other key areas. It is crucial that the plans support a multi channel operation and will need to deal with the different planning cycles adopted in the channels. Because plans roll over time, each channel must be able to plan to its

own calendar, and it should be possible to close periods and lock entire sections of plans to prevent manipulation. Each plan can be given a start and finish week and assigned to a channel. Within the time span and the relevant channel, the user will be able to plan at the various levels of product hierarchy, specifying the season when required - e.g. OLD, CONT, AW03.

Product and location planning

The planning structure must support product and location plans. If location planning is not required then the location planning functionality can remain dormant. If location planning is required, however, the only valid plans will be sales plans. The location sales plan will be generated using the same product hierarchy as used in product planning. It must be possible to stop at any level within the hierarchy without forcing definition down to the lowest category level

Product planning

Within product planning the user can select the appropriate channel then use the product hierarchy to spread the sales accordingly. This will be achieved using a series of spread curves defined by the user, and which have initially been created using the previous season's information as a guide. The curves can be defined across time and across the product hierarchy. At the lowest level the user will then be able to plan the sales value by (any) season. The sales by season will be drawn from the colour/season identifier held against the colour in D0A. Automatic routines will be available to do bulk moves from one season to another - e.g. SS01 product is moved into OLD.

Location planning

Store planning will have sales plans only. These will be used primarily to sense-check the product plans and to provide sales targets for stores. The existing product hierarchy will also be used in store planning however it is unlikely that the plans will be defined down to the lowest level of category. It is therefore possible to stop planning across all stores at any level in the hierarchy. For example, if the business wishes to plan the flagship store down to Retail Group level, then all stores will need to be planned down to the same level. However, data could be flushed through to the other stores without user intervention, using defined algorithms based on the flagship store.

Range planning

Having defined the Sales, Stock, Intake and Other plans, the number of options to buy and the colour ways will need to be defined. Data from the plans and historic information will assist the user in range planning. Range plans do not normally go down to size level. However, when the plans are to be used to generate purchase orders, they may need to hold size range detail or hold fields to specify the size range and buying ratio. If the plan is to hold SKU level data tools will be required to spread the range

plan by size range and ratio. Purchase orders are sometimes generated prior to, or in parallel with, range planning so there should be facilities to enable range plans to be updated from purchase orders.

Allocation, Distribution and In-Season planning

When operating in a multi channel environment, the ability to hold stock at a company level and also by channel gives maximum flexibility to the business and optimum stock utilisation. Each channel will re-forecast in season, and this activity will become easier with the visibility of the position in other channels. Mid season plans and future plans can change dramatically if one channel is over or under performing.
To achieve this, additional data and tools are required to interact with the plans. Stock and purchase data needs to be available by channel. Tools are required to ensure that stock is allocated and distributed in line with plans. Historical and future management information at a sale, stock and purchase level is required for each channel.

The following additional data is therefore required to provide a view of each channel's purchase/stock position:

- Purchase data by channel to provide on order/commitment information
- Stock held by channel for historical analysis
- Stock by channel for allocation and distribution. There is a need to cap at each channel's requirement level.

To provide the above level of data the system needs to calculate and hold at SKU level the styles that are in stock and/or are on purchase orders per channel. There are two ways of achieving the required level of data.

- Manually create and maintain SKU level plans based on purchases/receipts and business decisions
- Use proportions against the plan, purchase order, receipts and style to generate SKU level data

The ideal solution is to use the plan, purchase order and receipt data to identify the proportional requirements by channel and force stock out of the business in the proportions defined in these areas. This in effect is capping each channel's entitlement to stock based on the defined proportions. This is a very low maintenance solution for the users and the business.

Proportional approach

Once the plans have been created and a stock plan exists, the system must be able to calculate the planned proportional spread of the stock across the channels by the lowest level of the plan. This will be at a total level and will not consider the ratios across sizes and can be used for reporting and information purposes.

Proportions/ratios by size are calculated from the quantities entered by channel by the user when raising purchase orders or receipting goods into the business. The total proportion information can be used as a guide when raising purchase orders in addition to comparing actual purchase quantities by channel. It will therefore be possible to enter order and receipt quantities by channel. The system will then use these quantities to calculate the proportion and ratio by channel and use this information to allocate the stock by the appropriate proportion and ratio. Overnight the proportions/ratios against purchase orders, receipts and products will be used to calculate the stock and purchase position by channel.

Note: Prologic multi channel merchandise planning, allocation and distribution

A full paper on this solution, with examples and illustrations, which can be supplied on request, or downloaded (pdf) from www.prologic.net