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Increasing Sales and Reducing Returns with a Custom Sales Based Replenishment System for the Magazine Supply Chain

About The Customer

Our customer is an international distribution and logistics services company providing quality distribution, logistics and marketing services across a wide range of industry sectors and clients. They are widely respected for their ability to deliver a high quality news distribution service, 24 hours a day, 364 days a year. They are one of the three key players in UK newspaper and magazine wholesaling.

The Business Challenge

Our customer had introduced a new service for their retail clients; sales based replenishment of magazine stock. This ensures that a retailer only retains just enough stock to fill the shelf throughout the magazine's sales period. This benefits the retailer as they don't have to carry excess stock at the store, whilst also benefiting the wholesaler by reducing returns and increasing sales. Although our customer had an existing sales based replenishment (SBR) system in place to support the service it was not designed to meet three important and imminent business challenges:

- Many more retail multiples needed to have their EPOS data incorporated in to the system. Each retail multiple provided their EPOS data using different data formats and delivery mechanisms.
- A large increase in data volumes and calculations were expected over a short period of time as each new retail multiple was integrated.
- The replenishment calculation algorithms employed by the system needed to comply with the Joint Industry Group (JIG) standard.

In addition, the current system was very labour intensive requiring user intervention throughout each step of the process. Our customer engaged us to develop a new Sales Based Replenishment from the ground up to address these challenges and remove the dependency entirely on user intervention.

"Our proven expertise with Microsoft BizTalk Server and our detailed knowledge of the magazine publishing & wholesale industry enabled us to deliver a first class SBR system for our customer".

Myles Jeffery, Managing Director, Thinkscope.

Business Architecture

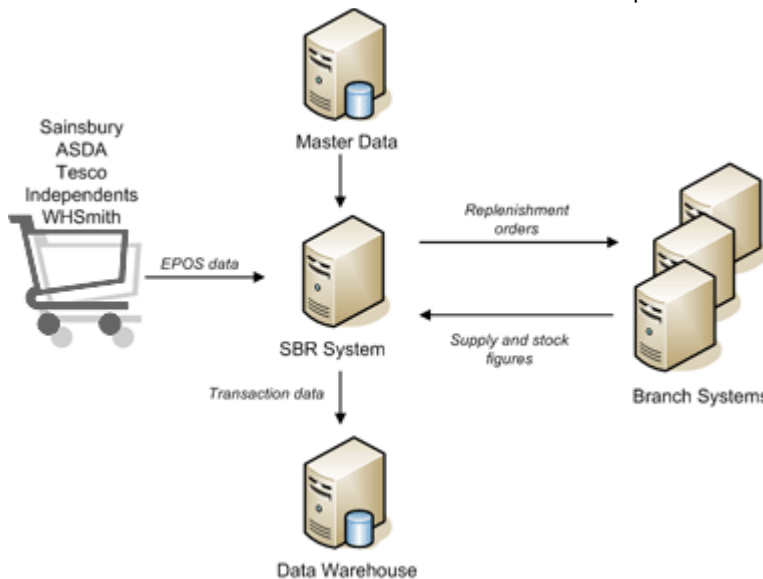
The diagram below provides an overview of how the new SBR system integrates in to our customer's business architecture. EPOS data is provided by the major retail multiples through a variety of delivery channels and data formats. The EPOS data is validated, transformed and loaded in to the system. On



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loading, the EPOS data is matched to the customer's master data. Once the matching has completed the SBR system then performs the replenishment calculations based upon industry standard JIG rules. Various parameters can be controlled by business users to optimise the rules. Any orders that are generated are sent down to each of the branches where the orders are packed and shipped.

- C#.Net for various business components.
- Replenishment rule parameter screens implemented using ASP.Net web forms.
- A Microsoft Excel spreadsheet was developed where rule parameters could be tweaked and adjusted so that business users could try out "what if" scenarios, connecting through ASP.Net Web Services to the SBR rule engine.
- Windows Server 2003 running on Intel processor.



Benefits to the Customer

Our customer now has in operation a Sales Based Replenishment system that has the flexibility to seamlessly integrate with more EPOS data feeds from retail multiples, to cope with much larger data and processing volumes (hundreds of thousands of transactions per day) and that meets the JIG standards.

The development process employed by Thinkscape ensured that our customer had full visibility over the costs and delivery schedule for SBR.

Technical Architecture

The system was developed using Microsoft technologies;

- Microsoft BizTalk Server 2004 for the major business processes, for integration and data transformation, and for modelling the replenishment business rules.
- Microsoft SQL Server 2000 for the database and job scheduling.
- SQL Server Reporting Services for business reports and replenishment summary reports.

What was once a very manual and onerous system to manage has now been fully automated. The system is even self-monitoring; should part of the system fail or a service level agreement be breached the support desk will be notified whereupon a resolution can be actioned immediately. This ensures that our customer can sustain a very



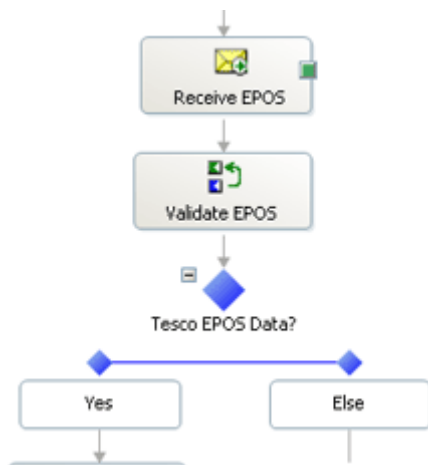
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predictable and reliable SBR service for its customers.

A web based user interface gives business users the ability to change replenishment parameters real-time, optimising them to achieve the best results for the business. New sales curves can be added or existing ones revised, right down to the individual title & retailer level or by groups. Other tools allow the business users to review sales trends against sales curves, find discrepancies between EPOS sales and charged sales at branches, and even monitor branch performance; how rapidly they pack and ship replenishment orders.

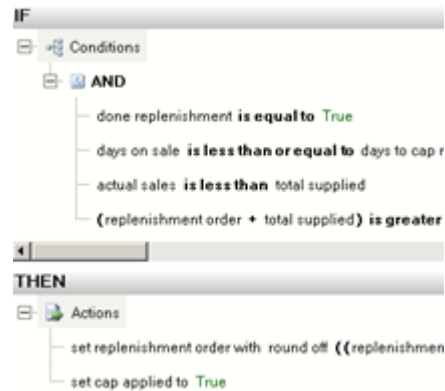
Business Processes

Each of the system's major business processes was implemented using Microsoft BizTalk Server. This ensured that each process was robust and capable of recovery after a system failure. The very visual nature of BizTalk provides for unparalleled visibility of requirements through to implementation.



Business Rules

The replenishment rules themselves were implemented using the Business Rules Composer that is bundled with BizTalk server. These rules are an important business asset. By modelling them in this way we ensure that they are kept close to the business domain and in a very visible, tangible form.



Service Level Agreements

The SBR system was plugged in to our customer's existing infrastructure (HP OpenView and TrackIt) to actively monitor SBR against service level agreements and report any anomalies up to the support desk for immediate action. Additionally an array of reports accessible through the browser enabled the support desk, technicians, or the business to view the current state of the SBR system throughout the day (referred to as a 'Heads Up' report). These reports were implemented with Microsoft SQL Server Reporting Services.



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Business Information

A key design goal for the SBR system was to ensure that the business were able to take full advantage of all the rich data that the system generated each day. To this end, the data was transferred and loaded in to the customer's business intelligence system where a rich array of reports and charts and trends could be created by the business users.

Phone **023 8026 1538**

Email **info@thinkscape.com**

Web **www.thinkscape.com**

Integration Challenge

The SBR system needed to integrate with EPOS data provided by the major retail multiples in a number of different data multiples in a number of different data formats and delivery mechanisms: AS2, EDI, FTP, Flat File, POP3, Zip etc. Microsoft BizTalk Server excels at integration and data transformation and was central in integrating SBR with the retail multiples.

About Thinkscape

Thinkscape is a software development services provider with a solid background in successful project delivery. Their focus on project management, risk management, quality and testing ensures the very best results for their customers.

Thinkscape specialise in development, integration, and consulting with Microsoft BizTalk Server, SQL Server, SharePoint, and .Net. Combined with their broad technical expertise covering Java, IBM, Oracle and many more means they can help their customers no matter what their needs might be.

