

# Point of Sale Data Sharing—A Case Study in Standards Deviation

Amongst supply chain experts there is almost universal agreement that the most important change manufacturers can make to their business models is to become more demand driven. One of the key aspects of a demand driven supply chain is the ability to “sense” demand in the marketplace. By sensing demand, manufacturers can more accurately forecast near-term product sales through various channels. Accurate forecasts reduce the likelihood of out-of-stocks, which represent an opportunity cost of lost sales. Furthermore, forecast accuracy reduces the likelihood of overstocks, which result in margin loss when goods must be marked down or liquidated in secondary markets. Demand signals such as Point-of-Sale (POS) transactions and inventory consumption data are commonly viewed as the keys to sensing demand, because these signals are highly correlated to downstream product flow velocity.

Despite the widespread agreement on the value of demand sensing for many years the retail industry continues to struggle with information sharing strategies. Most retailers and consumer products suppliers would agree that collaborative demand planning efforts have not reached their full potential. There are many competing theories on the root cause of the roadblocks to better information sharing. The technology to enable sharing of demand signal data such as Point-of-Sale (POS) between retailers and suppliers has existed for ten years, if not longer. One issue is the level of trust between retailers and suppliers, whom are increasingly both partners and competitors. As private label merchandise strategies grow retailers and brand owners find themselves competing for market share. But trust is not the only barrier. Inconsistent technology practices add significant complexity to data sharing efforts. Petabytes of data are shared between retailers and suppliers every day. However, the manner in which the data is exchanged varies considerably from retailer to retailer. Unfortunately, these inconsistencies complicate information sharing efforts that would enable more demand-driven approaches. Outlined below are six of the key technology challenges associated with sharing POS data.

- 1. Multiple Data Sharing Models**—Historically, POS analytics have been shared via syndicated data services. Vendors such as Nielsen or IRI took responsibility for aggregating data across a large number of retail chains. Then once a month the vendors would package and distribute the relevant data for each specific supplier. Syndicated POS services still provide highly valuable analytics, but for demand-driven replenishment models monthly data sharing is not a viable option. Instead, more frequent direct exchange of POS transactions between the retailer and supplier must occur. There are EDI (ANSI and EDIFACT) standards for POS exchange. However, most large retailers don't use the standards. Instead retailers extract the sales transactions from the POS system and append insert the raw data into a non-standard file format. In addition to messages and files, POS data can be shared via retailer portals, spreadsheets or CD.
- 2. Multiple File Transfer Protocols**—There are multiple different networking protocols that can be used to share the data between retailers and suppliers. Of course, the retailer decides which options are available. There are numerous variants of FTP. Some provide additional security such as SSL or SSH. Others are vendor-proprietary adaptations of FTP, known as Managed File Transfer (MFT), with features such as encryption, compression or checkpoint/restart. Many retailers use the AS2 protocol, which is the most popular network protocol for exchanging EDI documents such as purchase orders, shipment notices, invoices and remittance advices.
- 3. Very Large Data Files**—POS data files from national retail chains can be quite large, often more than a gigabyte a day per retailer. B2B integration platforms and standards were designed to handle a large number of smaller transactions (e.g. kilobytes). However, POS files are typically distributed as a relatively small volume of very large transactions (e.g. gigabytes).

Specialized MFT applications may need to be implemented to facilitate such large data transfers. For example, many consumer products companies struggle to download massive POS files through the popular AS2 protocol. AS2 excels as a protocol for sharing smaller payloads such as invoices or advanced shipment notices, but the original design was not suited for large files. There is a new version of the protocol called AS2 Restart that will support massive downloads such as POS files.

4. **Faster Availability**—As POS technology advances, there is decreasing latency in the information sharing. Retailers may post sales transactions online less than 24 hours after checkout. There is no requirement to download the data as soon as it becomes available. However, if competitors can access and analyze the data faster than then they gain a time advantage for demand planning. Instead of nightly batch download, IT organizations may need to obtain more frequent downloads 2-4 times per day. Of course, the challenge will be how to download these massive files during business hours without interrupting or adding latency to other transactions processed through the same channel.
5. **Variations in Data Fields**—Each retailer provides its own unique set of data. Some may provide sales by item for each store on a weekly basis. Others may provide more granular results such as sales by item for each store on a daily basis. For both weekly and daily data sharing, between 10 and 1000 fields may be available per transaction depending upon the retailer's POS system. The structure of the data files shared often varies by retailer. In many cases the retailers may share the same set of data elements, but call them by different names. Retailers may also provide market basket data, loyalty card, consumer demographics, retail price and retail promotion. However, such practices are less common currently due to the sensitivity of these additional data elements and the competitive advantage that can be gained from the insights.
6. **Missing or Poor Quality Data**—Data quality is a key concern for sharing POS. Data sets can be incomplete due to missing transactions from specific stores or for specific merchandise categories. Data sets may be raw or processed. Raw data may include items sold

by other suppliers. The extra data could be of interest for direct competitors, but in many cases is irrelevant and therefore must be filtered. Raw data might also include GTINs (product identifiers) or GLNs (store identifiers) which are no longer in use. Data synchronization through providers such as 1SYNC, GS1 UK or GS1net Australia is often a necessary pre-requisite to effective POS sharing. Data synchronization ensures that both retailer and supplier have consistent and current information about each product being sold. For example, for each product, both parties would have accurate, up-to-date packaging dimensions, pallet weights, brand names, product descriptions, supplier pricing and trade promotions data.

Given the technology challenges outlined above the universal agreement on the benefits of demand driven approaches, why then is there not more focus on developing standards for sharing downstream signals such as POS? Is the absence of standards indication that sharing sales and inventory transactions provides competitive advantage? Most companies would answer "Yes." In fact, historically POS data has been viewed as so valuable that it was purchased from retailers by the syndicated data providers then resold to suppliers. There is little debate about the value that POS data provides. But does the manner in which retailers share sales and inventory data with suppliers provide competitive advantage? Does the technical format of the message, the list of data fields included and the usage of the fields really differentiate one retailer from another?

There is a great discussion on POS standards in a 2009 report on Retailer Direct Data conducted by the Grocery Manufacturers Association (GMA). The report states that "most industry observers believe it is unlikely that a data standard will ever emerge (for POS)." GMA's analysis concluded that:

"Certain retailers today have specific data-sharing programs that include specific data fields, scorecards, KPIs and types of data shared that they would not want other retailers to know about and copy. It is a competitive advantage. If standards were in place, no retailer would offer up the innovative data they are sharing."

In other words, the list of data fields utilized in POS, which would be manifested in a messaging specification does, in

fact, differentiate one retailer from another. However, surely the suppliers would realize strong benefits from standardization. The discussion of the value to the supplier is really a moot point. The retail value chain is dominated by buying organizations which dictate the terms of trade, including how demand signals are shared, to the suppliers with little room for negotiation. Nonetheless, the GMA addressed the benefits to the supplier with the conclusion that:

“While it may be convenient for suppliers for all retailers to use the exact same processes, the retailer willing to break out of the standard—be it for collaboration or for data - gives itself an opportunity to create competitive advantage if it innovates something perhaps less scalable but more effective or faster than the standard.”

This statement (and the surrounding text in the report) captures the essence of the challenge with standards. While the majority of participants in a value chain make seek the benefits of a standardized approach, there will always be a small group of innovators that seek competitive advantage by deviating from the standardized approach. Those competing on analytics, in particular, will seek out ways to obtain unique data that their competitors don't have access to. Alternatively, they make seek to obtain the same data that competitors do, but to gain earlier access to it. The best supply chain forecasters are starting to think like hedge fund managers. Investment managers at hedge funds will go to extraordinary lengths to gain access to information that may influence the future price of a security. Of course, in the regulated securities market there are rules in place designed to ensure that all investors have equal access to information. But in the supply chain, there is no such concept as insider trading. If you can gain better raw data about recent downstream sales, future customer behaviors, changes to supplier costs, then you will profit from better production and sales forecasts.

The GMA report goes on to state that “If a standard for the base data fields and formats being shared were going to emerge, it would have done so by now. The number of obstacles to a data standard outweigh the benefits to the retailers—the originators of the data.”

What does the future hold for sharing of POS data? Unfortunately, more deviation from the standards is likely to occur. As competitive advantage in the industry becomes more correlated with demand sensing and continuous replenishment cycles, the willingness to deviate from standards to gain an information edge will grow. Expect a continued proliferation of file transfer, vendor portals, SaaS applications and traditional EDI approaches to be used in a myriad of ways by different retailers.



#### About GXS

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#### **NORTH AMERICA AND GLOBAL HEADQUARTERS**

9711 Washingtonian Blvd.  
Gaithersburg, MD 20878, US  
+1-800-560-4347 t  
+1-301-340-4000 t  
+1-301-340-5299 f  
[www.gxs.com](http://www.gxs.com)

#### **EUROPE, MIDDLE EAST AND AFRICA**

18 Station Road  
Sunbury-on-Thames  
Middlesex TW16 6SU  
United Kingdom  
+44 (0)1932 776047 t  
+44 (0)1932 776216 f  
[www.gxs.eu](http://www.gxs.eu)

#### **ASIA PACIFIC**

Room 1609-10  
16/F China Resources Building  
26 Harbour Road, Wanchai  
Hong Kong  
+852 2884-6088 t  
+852 2513-0650 f  
[www.gxs.asia.com](http://www.gxs.asia.com)