



**WebSphere** software

## **IBM XYZ Framework for retailers**

*Best practices for a strategic master data management solution.*

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**Executive summary**

The IBM XYZ Framework for retailers provides best-practices recommendations to help you optimize downstream systems and address business challenges with a single, reliable repository of product information. The product-information repository, which electronically collects attributes from suppliers and aggregates it with your internal data, is critical to improve a range of business objectives from faster new product introduction to improved efficiencies in the overall supply chain.

You can use the IBM XYZ Framework to provide a valuable foundation for your master data management (MDM) strategy. This overall MDM strategy can play a vital role in enabling you to achieve the return on investment (ROI) associated with streamlined business processes. The IBM XYZ Framework can also help you address critical business challenges by providing the blueprint for a single, reliable source of information that you can use throughout your organization.

The IBM XYZ Framework is, in many ways, a representation of what is currently happening at every retailer. The key difference is that the IBM XYZ Framework proposes a blueprint for an automated approach to manage what is usually handled through manual processes. Consider that most retailers today use paper-based item introduction or new line forms that suppliers complete, and then use areas on the form to enrich the data with retailer information. By most accounts, the process a retailer uses to process the data for a new item takes three to five weeks (although it can be longer for categories such as apparel and electronics). By using the IBM XYZ Framework as the underpinning for your MDM strategy, you can reduce these timeframes through an automated approach that enables you to address key business needs.

### **Business challenge**

With each passing decade, the retail business landscape has become more competitive, and the retailer business model has become more complex. Razor-thin margins and an increasingly diverse landscape are just two examples of the challenges you face. However, another significant change that is affecting strategic and tactical decisions is that of expanding consumer demands. These expectations are driving your need to rapidly introduce new products and merchandise innovative packaging. Consumers are also looking for more information about products (for example, if food products contain peanuts or trans fat, or if a light bulb is energy efficient). The confluence of these factors is forcing you to reconsider many of your business processes and, at the heart of these activities, how you manage the information required to optimize your supply chain to capture customer loyalty, as well as generate revenue.

Today, most retailers manage their approach to these challenges through manual or semi-automated methods. E-mail, phone calls, faxes, spreadsheets, electronic data interchange (EDI) and existing systems are all examples of where this business information is currently collected, enriched, manipulated, stored and ultimately moved downstream.

New industry initiatives, however, are providing better options for you to aggregate this critical business information. Over the past six years many retailers and suppliers have tried to navigate the path to automation by focusing on industry-oriented initiatives such as Global Data Synchronization (GDS) by using the Global Data Synchronization Network (GDSN). The focus of these projects has primarily centered on the exchange of available product information between retailers and suppliers. Retailers have had high ROI expectations for these efforts, but, unfortunately, few of these projects have delivered as anticipated.

The GDSN is clearly positioned to provide tremendous value to retailers, distributors and suppliers alike in their quest to exchange reliable, timely product information. Data pools and the GS1 standards that make up the GDSN have made significant advances over the past six years toward facilitating this exchange. However, although a GDS strategy is an important component to aggregate the information required to meet your business strategy, it is only one piece of the puzzle. Without a more comprehensive strategy, the value of this information can be diminished. Specifically, without sufficient internal business processes to aggregate more non-GDSN, supplier-required information, and the ability to incorporate critical retailer-enriched information, a GDS-only strategy can provide only limited value. Using the IBM XYZ Framework to guide your MDM strategy better positions you to achieve your business objectives. Your MDM strategy serves as a foundation for aggregating all components involved in your information-management process.

#### **Categorizing data attributes into X, Y and Z**

The IBM XYZ Framework is the underlying approach to MDM for retailers. Its objective is to enable you to collect all the required information from your trading partners, and then aggregate pertinent, retailer-enriched information into one cohesive MDM approach.

The first step in developing your version of the IBM XYZ Framework is to understand its components. Each attribute designation – X, Y and Z – is equally important and mutually exclusive. The X and Y attributes represent information collected from suppliers. Your internal, retailer-specified information is represented by Z. When combined,  $X + Y + Z$  equal the total amount of information necessary to address the needs of your downstream systems and business processes to achieve your business objectives.

### Identifying X attributes—supplier information received from your GDSN-certified data pool

X attributes are derived from the product information provided by your data pool. This information falls into two categories (see Figure 1).

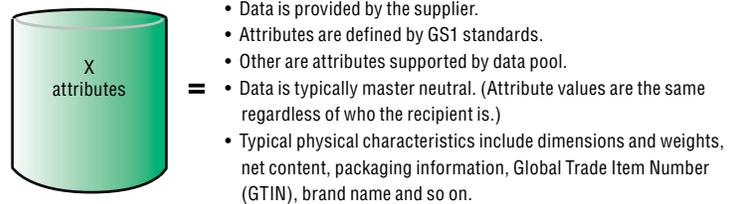


Figure 1. X attributes

GS1 standards-based data is characterized by a wide range of master-neutral data. Product descriptions, brand information, package dimensions and net content are all examples of GS1 standards information.

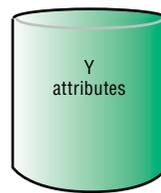
Along with supporting GS1 standards information, many GDSN-certified data pools also support attributes not yet incorporated into GS1 standards. Industry-extension attributes are a good example of the other types of attributes supported by some data pools. For instance, movie ratings for DVDs are industry attributes that might be offered by a specific data pool to its retail customers.

**Identifying Y attributes—supplier information received directly from your supplier**

Y attributes are provided by suppliers and include valuable business data, such as price and price-promotion information, first-shipment data and minimum order-quantity information. Y attributes are critical because they fill in the gaps not currently addressed by GS1 standards or data pools.

The specific Y attributes required by a particular retailer vary for two reasons. First, as described previously, data pools typically provide support for attributes beyond those currently supported by GS1 standards. The other specific attributes supported by these data pools, however, vary by data pool. Second, each retailer has unique requirements for information from their suppliers. To the extent that these are not met by current GS1 standards or data pools, retailers still require this information to complete their business processes (see Figure 2).

Over time, it is expected that GS1 standards will include a wider range of attributes. These standards should incorporate attributes currently supported by data pools, but also those attributes that currently are exchanged directly between retailers and their suppliers. Ideally, over time Y attributes will no longer be required and all information that needs to be exchanged between retailers and suppliers will be based on GS1 standards.



- Data is provided by the supplier.
- Data is not part of GS1 standards.
- These attributes are above and beyond what GDS can provide, but they are *required* to process a new item from a supplier.
- Because they are typically relationship dependent, attribute values are dependent on who the recipient is.
- Examples include price and promotional data, minimum order quantity, and dates (such as when first ordered and when first shipped).

Figure 2. Y attributes

The combined attributes of X + Y should represent all of the information you require from external (suppliers) sources.

### Identifying Z attributes—internal, retailer-enriched information

Z attributes are derived from your own, internal product-information requirements (see Figure 3). Examples of Z attributes include retailer classifications, warehouse location and pricing categories. As a retailer, you require more than information from your suppliers (X and Y, as discussed previously) to have a comprehensive data set to drive downstream system and business-process requirements. You also need your own, retailer-enriched information. You will also likely have different requirements for different categories (such as food, apparel and general merchandise) or geographies (such as varying legal reporting requirements and import information).

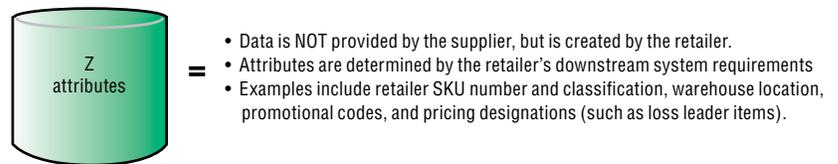


Figure 3. Z attributes

### Adding up X, Y, and Z

Because of the varied number of X, Y and Z attributes required by any given retailer related to the range of products they offer and their internal requirements, you can't apply a set number of attributes to each category. Instead of viewing X, Y and Z with an associated number of attributes, you should view them as percentages of your total requirement. So, overall, X + Y + Z should equal 100 percent of the data required by your downstream system (see Figure 4).

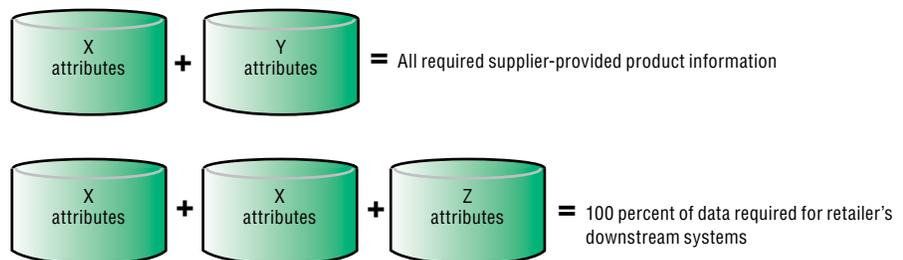


Figure 4. Putting together X, Y and Z attributes

The specific number of attributes for X, Y and Z can vary not only by retailer, but also by category within a retailer. For example, you might have separate downstream systems for your dairy products and your shelf-stable products. The total attributes to list a new dairy product could be 90 attributes (where  $X = 60$ ,  $Y = 25$  and  $Z = 5$ ), whereas the attribute requirements for a new shelf-stable product could be 140 attributes (where  $X = 90$ ,  $Y = 40$  and  $Z = 10$ ). This is important to note when considering the architecture of your XYZ strategy. You must be sure that you have built in the flexibility to allow the number of X, Y and Z attributes to vary based on the requirements of the specific downstream systems.

### **X, Y and Z are mutually exclusive**

You should designate attributes as X, Y or Z because each attribute can be processed through only one of the three avenues. The number of X attributes is typically larger than Y or Z. Ultimately, the more information that you can exchange through X, the more value you and your suppliers can derive from your GDS strategy. Suppliers, in particular, benefit when this number is higher because it indicates that they can share valuable product information across many of their retailer partners using one approach.

### **An architecture to support the data flow of X, Y and Z**

As previously described, the first step in your effort to implement the IBM XYZ Framework is to understand and identify the X, Y and Z attributes and the downstream systems and business processes that can be affected by this aggregated information.

The second step is to determine the specific process – or workflow – that will be required to aggregate this information. After the information is aggregated, you can determine the appropriate architecture you need to use to send the information to the requisite downstream systems.

#### *Collecting X data*

You collect X data from your data pool (see Figure 5). To do this effectively, you need technology to subscribe to supplier information using your data pool. You should take as much of the data provided by your data pool as possible. Retailers should attempt to make the percentage of X data as big as possible to make the GDS investment mutually beneficial for retailers and suppliers.

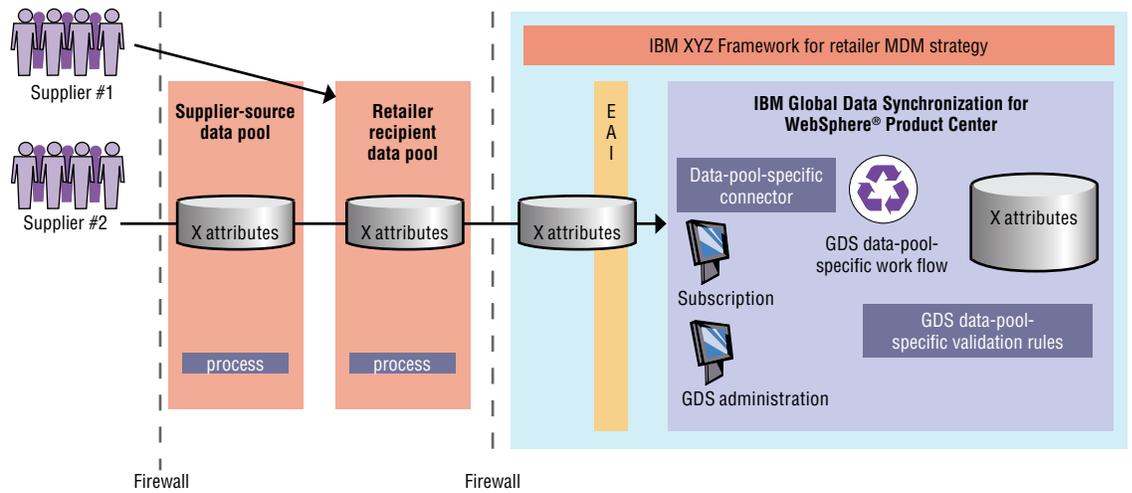


Figure 5. Collecting X attributes

Collecting Y data

You must collect Y data from your suppliers through an alternate means to a data pool, because the data pool typically does not support this information. The most common automated way to collect this information is to use a portal, whereby suppliers enter the data directly (see Figure 6).

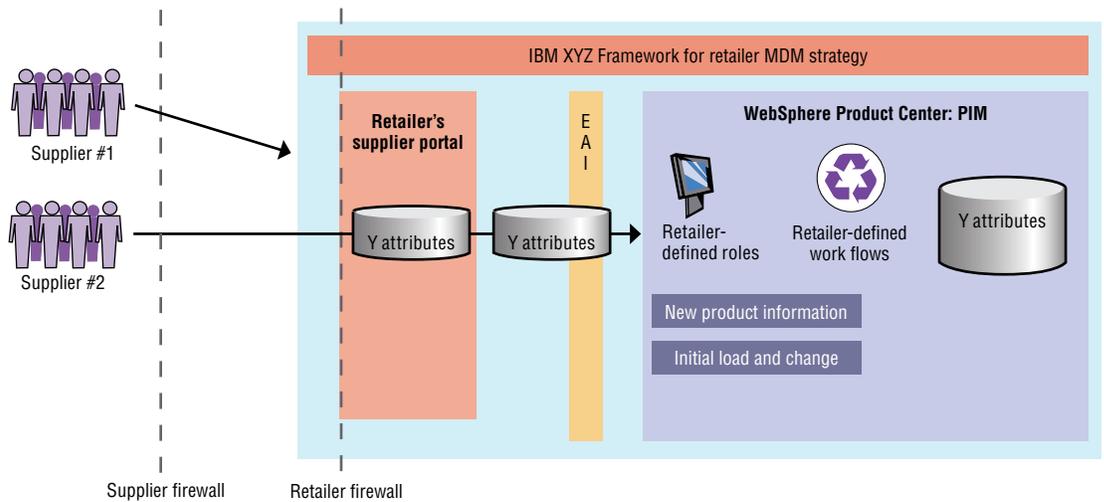


Figure 6. Collecting Y attributes directly from suppliers

Retailers have been attempting to use portals for many years. Many suppliers have resisted using portals because they are typically viewed as a competing means to collect information that is available through the GDSN. However, the supplier community is beginning to understand the difference between what data pools can provide (X attributes) and the remaining information retailers require from them (Y attributes) to fulfill their downstream system requirements. And portals are the best way to collect Y attributes.

To help maximize transparency to suppliers and help ensure that X and Y attributes are not collected twice (for example, once through the data pool, then again through the portal), you should be sure that your portal:

- *Displays the information received through a data pool in view-only mode.*
- *Provides enrichment fields for the remaining information required from a supplier.*

Suppliers should provide Y attributes by inputting this information manually through the portal or through uploading a spreadsheet formatted with this same information.

*Aggregating X and Y attributes for one comprehensive set of external (supplier) information*

After X and Y attributes have been collected from suppliers, you should aggregate this information (see Figure 7). Performing this task helps ensure that you can view, analyze and validate all supplier data in one location.

An optimal way to aggregate X and Y data in one location is to use a product information management (PIM) solution, such as WebSphere Product Center. PIM technology provides the requisite features and functionality – including data models, validation routines, workflow and reports – to effectively aggregate this information into a reliable repository. You should deploy your PIM solution so that it addresses your individual needs and proprietary models. Even competitive retailers in the same sector can have unique workflows and models that make their PIM deployments look and act differently.

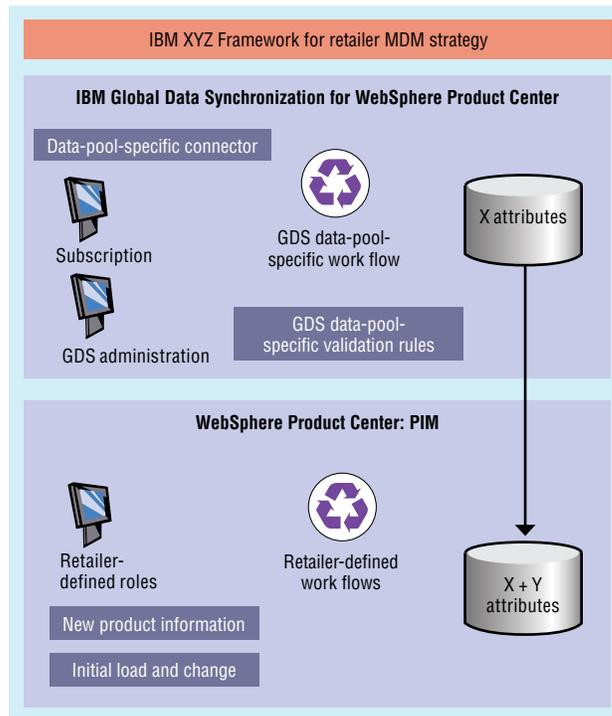


Figure 7. Aggregating X and Y attributes

As previously discussed, GS1 standards are expected to evolve and include an increasing number of attributes in the coming years. As a result, you need a flexible, scalable PIM solution that can aggregate X and Y information – with the features and functions to grow with your changing needs. You can expect that the velocity and scale of the data is going to increase because of the number of items processed, and that you are going to have to upgrade Y attributes to X attributes as GS1 GDS standards evolve.

#### Adding Z attributes

After X and Y attributes have been collected, aggregated and validated, you need to add the relevant Z attributes. Adding your retailer-enriched information completes the final layer necessary to create a comprehensive data set to feed your downstream systems (see Figure 8). This process is typically performed by data analysts through a user interface directly in the PIM pool.

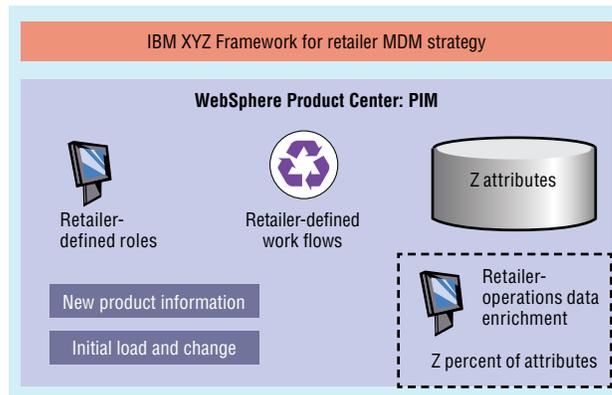


Figure 8. Creating Z attributes

*Exporting X, Y and Z data to downstream systems*

After you have aggregated and validated X, Y and Z attributes within your PIM solution, you can export the data to downstream systems (see Figure 9). You need to format and map the information so that it can be received and understood by these other, recipient systems. Also, you have to establish an appropriate schedule for these feeds to take place.

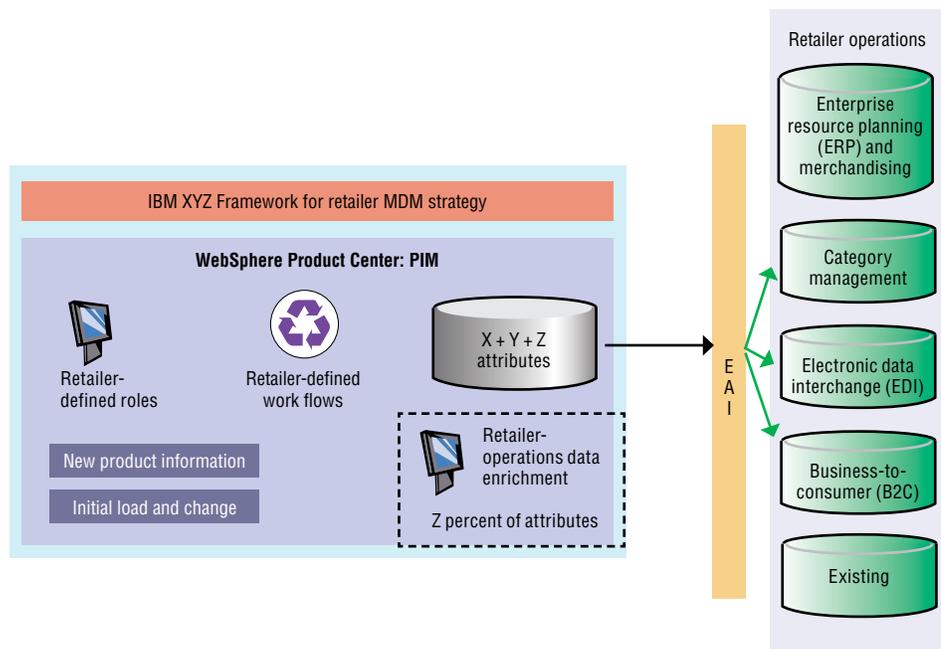


Figure 9. Export XYZ data to downstream systems

Ideally, your system is modified to import only X, Y and Z attributes through an automated mechanism. Separate data-entry screens for the same data should no longer be necessary. By doing so, you can avoid interrupting the validity of the data being aggregated by your PIM system. This interchange is an excellent place to establish KPIs to measure the success and ROI from the IBM XYZ Framework and PIM deployment. For example, you can compare the elapsed time between when a supplier first sent X or Y data to when the data is exported to the downstream system. In turn, you can use the speed advantage to measure strategic business objectives, such as accelerating the time it takes to introduce a new item.

### **Architecture of the portal**

#### *How to serve 100 percent of your supplier base*

As you begin to architect your technology using the IBM XYZ Framework, you should consider the different ways that your large and mid-sized suppliers might approach GDS compared to smaller suppliers. GDS is preferred by most large and mid-sized suppliers (see Figure 10) because it enables them to communicate with multiple retailers uniformly. However, hundreds — and in some cases, thousands — of small suppliers cannot justify investing in GDS. Although this group of suppliers (often seasonal suppliers or those with a very limited number of items to send) is unlikely to invest in sending any product information through a data pool, they are much more likely to be willing to key data into a retailer portal because it doesn't have transaction or maintenance charges.

Using a portal and GDS strategy buffers you from the whims of a supplier that uses GDS, but does not populate all the attributes. Suppliers do not act or process uniformly. For example, five suppliers in the same product category can produce five different total numbers of attributes populated in a data pool. Each leaves different attributes blank, because their back systems do not carry those data requirements. By enabling these suppliers to enrich the blank attributes in a portal, your downstream systems are unaffected by how each supplier is evolving in its GDS strategy.

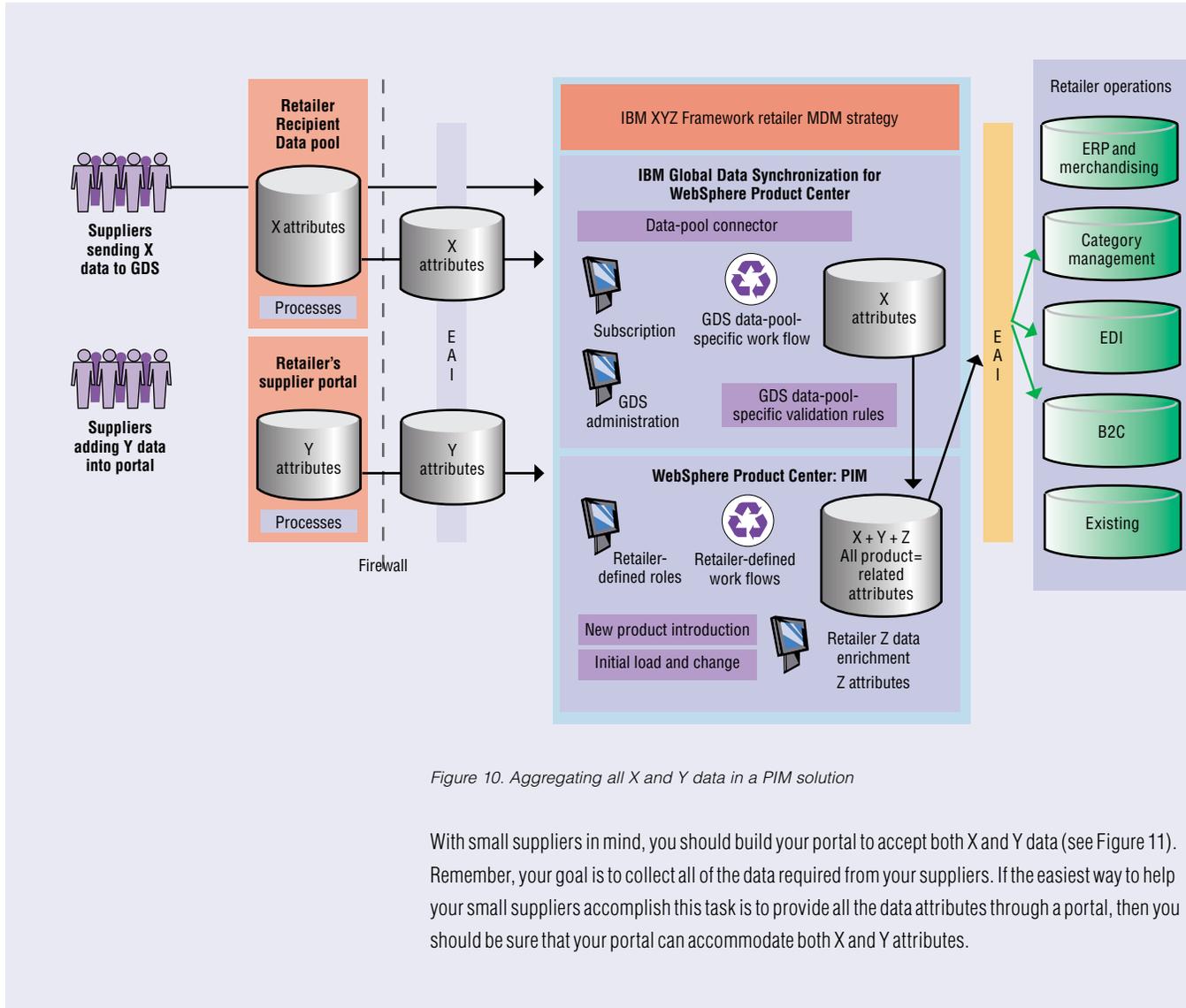


Figure 10. Aggregating all X and Y data in a PIM solution

With small suppliers in mind, you should build your portal to accept both X and Y data (see Figure 11). Remember, your goal is to collect all of the data required from your suppliers. If the easiest way to help your small suppliers accomplish this task is to provide all the data attributes through a portal, then you should be sure that your portal can accommodate both X and Y attributes.

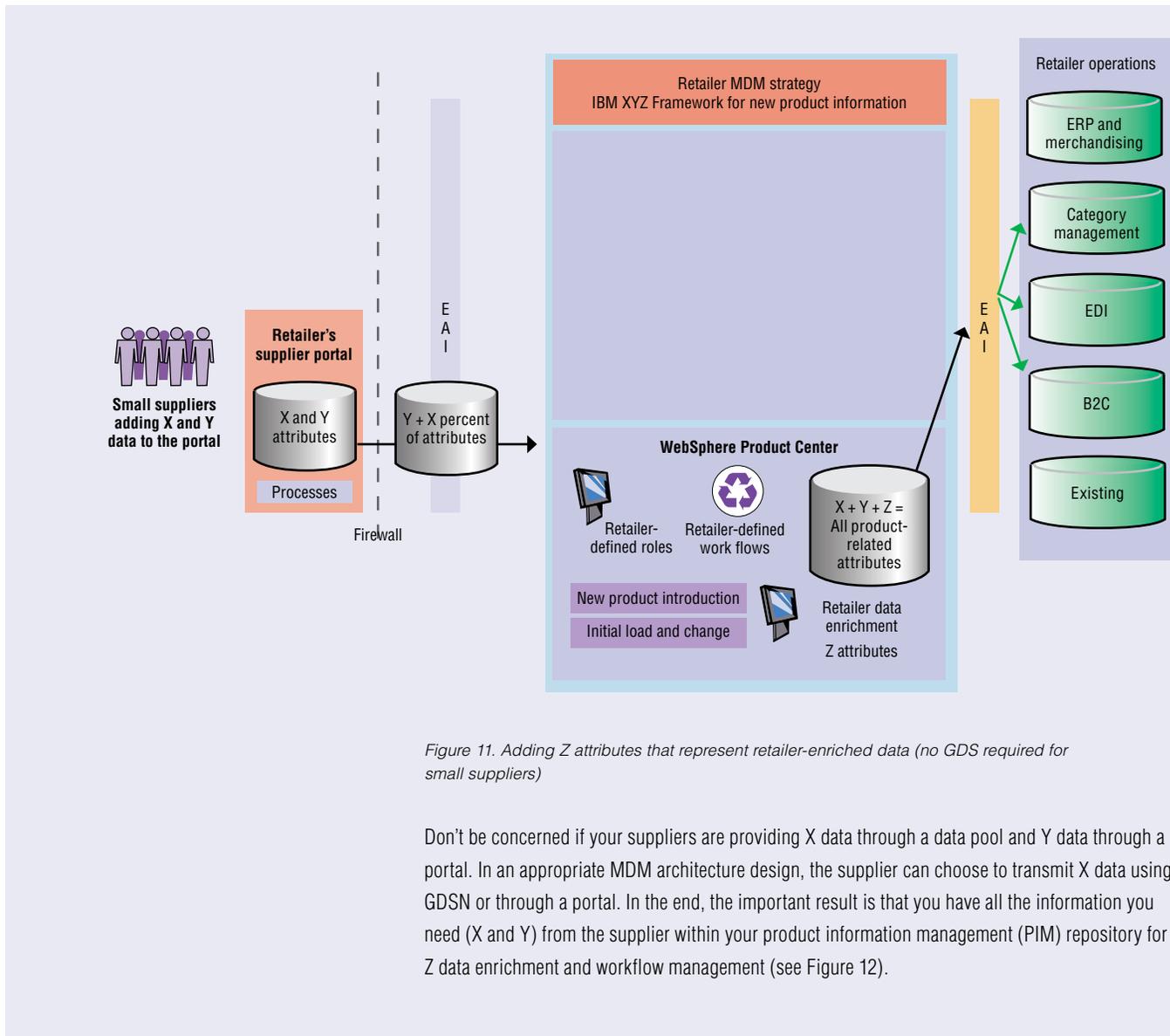


Figure 11. Adding Z attributes that represent retailer-enriched data (no GDS required for small suppliers)

Don't be concerned if your suppliers are providing X data through a data pool and Y data through a portal. In an appropriate MDM architecture design, the supplier can choose to transmit X data using GDSN or through a portal. In the end, the important result is that you have all the information you need (X and Y) from the supplier within your product information management (PIM) repository for Z data enrichment and workflow management (see Figure 12).

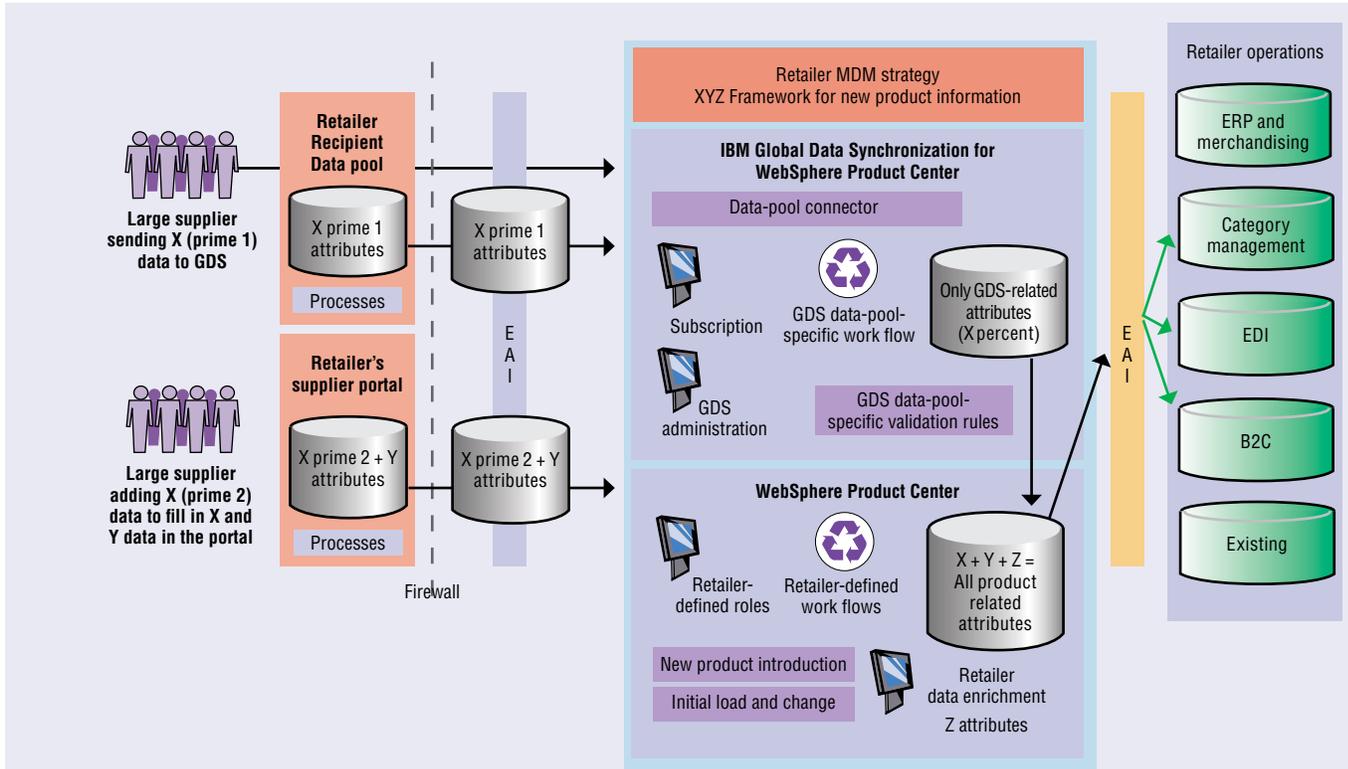


Figure 12. Enabling large suppliers to complete data needs in a portal (Y) if they can't do so through a data pool (X)

You should ensure that your portal can accept both X and Y attributes for the following reasons:

- *Smaller suppliers that do not want to invest in a GDS infrastructure can still participate in your XYZ strategy.*
- *Larger suppliers that value GDS can take advantage of their GDSN investment.*
- *Large suppliers have another avenue to provide information not supported by the data pool that you need (Y attributes), as shown in Figure 3.*

Using the IBM XYZ Framework, you now have a clearer view of your overall business requirements and a deeper understanding of your suppliers' challenges. The process and technology components of the XYZ strategy can be easily constructed to support a flexible approach that can enable an easier transition for the entire supplier community. To be successful, your XYZ strategy must accommodate everyone to meet all of your important key performance indicators (KPIs). This data exchange process is a business-to-business (B2B) initiative that involves a set of players who are diverse in their size and technical ability.

### **Best-practices recommendations**

The IBM XYZ Framework can result in a successful MDM strategy when you want to:

- *Identify downstream systems and business processes benefiting from MDM.*
- *Understand all X, Y and Z attributes required to address these systems and business processes.*
- *Use the right technology to address short-and long-term needs.*
- *Implement a strategic supplier on-boarding approach.*
- *Establish effective data-accuracy practices.*

#### *Identifying downstream systems and business processes benefiting from MDM*

The first step in applying the IBM XYZ Framework to your company involves identifying the downstream systems and business processes that could benefit from establishing an accurate, reliable source of complete product information. This identification process should include both business and IT owners to help ensure that the needs of all constituents are considered.

The downstream systems and business processes should represent your current needs. Anticipating too many future projects that are not yet in place can end up overburdening suppliers with data requirements they do not need to address immediately, which in turn can affect the overall success of the project. However, at the same time, you should build the MDM architecture with the flexibility to expand into future requirements. Some examples include adding downstream systems and more product information, such as complex structured data, unstructured data and images.

Business and IT teams leading the XYZ strategy effort can use the following questions to identify the systems and processes affected:

- *Which organizations and projects are affected?*
- *Who from these organizations needs to be involved? Needless to say, because of the high number of people, processes, supplier outreach and technology, many individuals and departments might need to be involved. Determine who needs to lead, who needs to follow and who simply needs to be informed.*
- *Which business processes are affected? Which ones need to be brought into the new process?*
- *What is the impact on workflow?*
- *What measurements will be used? KPIs are more important than ever. You can measure success in many ways – overall ROI, throughput, data accuracy, speed to market, and supplier acceptance and adoption.*

*Understanding all X, Y and Z attributes required to address these systems and business processes*

After you have identified the downstream systems and business processes, you have to document the specific information you require from suppliers (X and Y), as well as the your own retailer-enriched information (Z). Without compiling comprehensive documentation of this information and mapping it to the particular downstream systems and the business processes they can support, you risk not having adequate information to achieve your ROI objectives.

The following questions should help guide the business and IT owners to develop the comprehensive list of required X, Y and Z attributes:

- *What information is required for the downstream systems and business processes?*
- *How is this information currently aggregated? It is likely that most of the supplier item-introduction paper forms is collected through item introduction paper forms. This can serve as an important resource when helping to ensure that all requisite attributes from suppliers are captured either through X or Y.*
- *How is supplier information currently combined with your own retailer-enriched attributes (Z attributes)? Which departments and individuals enrich this data today? These are key stakeholders to engage in the design of the XYZ strategy to help ensure that input, support and work processes are factored into the architecture design.*

*Using the right technology to address short- and long-term needs*

Selecting technology components and partners that can provide the flexibility and scalability required to evolve your MDM system over time is essential. The industry is arguably at the early stages of benefiting from the advantages of standards-based information that is exchanged between suppliers and retailers. As the amount of data supported by the GSI standards increases, so too can the value derived from your MDM infrastructure. The key technology components to build a comprehensive, scalable MDM solution include PIM, GDS and portal technology. Without the ability to keep pace with the expanded usage opportunities from this solution, your ability to benefit from these advances is limited. Also, making a strategic data-pool selection and working with solution providers with deep subject-matter expertise are essential to create an overall architecture that addresses your specific needs.

The PIM technology used should be able to manage multiple information domains across multiple applications. PIM technology should be able to manage:

- *Reference information*
- *Products, customers, vendors and locations*
- *Static warehouse information*
- *Links to content repositories (unstructured content)*
- *Relationship information between entities (item-to-item relationships as well as parent-child relationships)*

The GDS technology employed should have a proven, certified connector to your selected data pool. This connector should stay as current as possible to map to the data pool's evolution and expanding support for more GS1 standards, as well as its own attributes. Similar to the way EDI was initially implemented, the GDS software needs to stay up-to-date with the data pool. There is tight integration of XML messages that are passed from data pools to the GDS technology. These messages are updated frequently, and the GDS technology must stay current with these changes.

Portal technology is another essential component to the overall implementation. A portal must be able to align with the flexibility of information that needs to be both shared as view only (the X attributes), and provided with fields for suppliers to complete the remaining Y data. If some X attributes that are supported by the data pool are not completed for a specific supplier, these fields should be made available for that supplier to complete in the portal. By doing so, you help ensure the collection of all required information from that supplier. (See page 13 for more details about portal best practices.)

*Implementing a strategic supplier on-boarding approach*

After you have identified the needs for your XYZ strategy, a key dimension to success and recognizing the business benefits of this implementation is effectively bringing suppliers into the system. On-boarding suppliers is not a trivial task. It requires an overall strategy that lays out the priorities and approach of bringing suppliers on board. Many retailers expect to bring on all of their suppliers at once; however, typically a more effective approach is to identify a subset of product categories for a handful of suppliers as a starting point, then grow organically from there.

You should consider a number of other questions as you develop your supplier on-boarding approach:

- *How will I handle supplier communication? A communication plan throughout the course of the project is critical. Suppliers need to understand what is expected of them, when they need to provide it and how to communicate this information (GDS or portal). Suppliers need as much notice as possible to meet a retailer's needs.*
- *Who owns this communication? Some retailers put this communication in the hands of their merchants (buyers), whereas others assign it to their B2B or EDI teams. Regardless of who owns the communication, it is important to understand that significant effort is required to keep this communication fresh and constant; you shouldn't view it as a single survey and a broadcast e-mail stream.*

*Establishing effective data-accuracy practices*

It is critical that you establish high expectations for data accuracy, both from your suppliers (X and Y), as well as for your internal data (Z). You must clearly communicate and monitor these expectations throughout the MDM solution. To do this, you should include built-in checks to validate product information accuracy and workflow that routes inaccurate information back to the original source. This can happen through a rejection to a data pool for X data, a notice to suppliers who have entered inaccurate data to a portal or a similar communication to an internal resource entering Z data.

Questions that are important to consider as you articulate your data-accuracy requirements to your suppliers include:

- *What are my data-accuracy expectations? These can vary by product category and ultimately by the tolerance expectations of the downstream systems. Be prepared to have discrete discussions and communications with suppliers on this sensitive topic.*
- *What are the implications for not complying with these data-accuracy expectations? This is another sensitive topic, but one that you should consider because retailers have made many requests for electronic data from suppliers in the past with no implications – and have produced less-than-stellar data-accuracy results.*

### **Summary**

Today's retailers are constantly looking for more ways to build strategic, flexible businesses that can help them retain margins and grow revenue. A core dimension of success is identifying and serving their customers' needs for more new products or innovative packaging, delivered more quickly and with more information than ever before.

The IBM XYZ Framework can be the foundation for your MDM strategy – helping you to build a strategic, flexible infrastructure to establish and maintain competitive advantage. The benefits of aggregating X and Y information from suppliers with Z data that reflects retailer-specified needs provide the core components to establishing a reliable, accurate, up-to-date product repository that you can use throughout downstream systems and business processes. This effort can have significant ROI, but you must make a significant commitment to fully recognize the benefits over time.

**For more information**

To learn more about the IBM XYZ Framework, contact your IBM representative or IBM Business Partner, or visit:

[ibm.com/websphere/prodinfomgmt/](https://ibm.com/websphere/prodinfomgmt/)



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