

Improving Acquisition of Commercial Items Automated Price Evaluation Methods Ensure Good Value

How do you evaluate price in vendor proposals? Does your process need improvement?

This is a challenge facing many Public Sector buyers, including US government agencies, tasked with determining fair and reasonable prices for commercial catalog items. In this paper, we describe how the two largest buying organizations in the US government are moving towards an automated process for evaluating vendor pricing using horizontal price analysis.

Executive departments and agencies spend over \$500 Billion annually to buy goods and services in support of their missions. In numerous reports, the Government Accountability Office (GAO) has indicated that USG agencies are not effectively identifying savings opportunities and that there is widespread variation in prices paid for the *identical item*.

Under President Obama, the White House prioritized cutting unnecessary contracting and ensuring that **“all contracts deliver the best value for the American people.”** The “best value” includes, among other considerations, fair prices; government procurement regulations require that Contracting Officers demonstrate that contracted prices are fair and reasonable. The Federal Acquisition Regulation (FAR) lists several price evaluation techniques, but states that after competition, the preferred method is “comparison of proposed prices to historical prices paid, whether by the government or other than the government, for the same or similar items.” Beyond the fair and reasonable price determination, several agencies are attempting to use horizontal price analysis, comparison of a proposed price to contracted or prices paid for the identical item, to obtain a vendor’s “best price”. This practice is helping agencies reduce price variability and maximize procurement dollars.

Ideas in Practice:

Traditional methods of evaluating prices for the acquisition of commercial items are simply not scalable. Several forward-looking US government agencies are leveraging AI-driven automated tools to overcome data quality issues common to the supply chain and support the determination of fair and reasonable prices for commercially available items. Automated price research and evaluation is driving down cost, reducing acquisition lead times and ensuring a greater level of accuracy and consistency agency wide.

The Procurement Challenge is Finding Identical Products.

When a contract is issued for a large set of products, should each product in that catalog be evaluated? The average size of a vendor catalog listed on *GSA Advantage!*, one of the primary government managed eCommerce portals, contains more than 4,000-line items. In fact, more than 500 vendors catalogs listed on *GSA Advantage!* have 10,000-line items, or more. Similarly, more than 200 vendor catalogs on DoD FedMall, another large government managed eCommerce site for federal buyers, contains more than 10,000 SKUs each.

Validation of all line item prices can consume an unreasonable amount of time - when done manually; in fact, prices may change by the time this process is complete. One traditional manual process for validating vendor prices involves examining a “manageable” sample of items. Often that sample amounts to less than 10% of the proposed vendor catalog. An anecdotal description provided by one government Contracting Officer depicts him Googling each item in the sample to find three alternative prices for identical or similar items in other commercial catalogs. The best ad-hoc solution that we observed was put together by an inventive Contracting Officer trying to directly match a proposed price to a database of several competing catalogs previously awarded. However, the volume of product data that must be analyzed coupled with uneven vendor data quality makes this type of manual analysis impractical.

To illustrate the situation, let’s take a vendor who submitted a catalog with 25,000-line items; among other products, and additional fields of data, the vendor submitted the information shown below:

Manufacturer Name	Manufacturer Part Number	Product Name	Price	Unit of Issue
BLACK & DECKER/DWLT	DW1608	EXTRA LENGTH DRILL BIT	\$12.31	EA
DEWALT	DW160V	3/8" RIGHT ANGLE DRILL	\$156.36	EA
DEWALT	DW235G	1/2" VSR DRILL	\$107.49	EA
BLACK & DECKER/DWLT	DW3753H	WOOD CUTTING JIGSAW BLADE	\$10.92	CG

You might notice that even within the same catalog, the Dewalt brand is described in two different ways: BLACK & DECKER/DWLT and DEWALT. To expand the perspective, there are more than one hundred variations of the Black and Decker name across all the different catalogs available on the government managed eCommerce sites. Additionally, part number representations differ: DEWDW235G and BLADW235G are different ways to identify “DW235G”. Another layer of complexity is added when vendors provide their internal catalog numbers in the fields designated for a Manufacturer part number, as shown in the table below. This is a fairly common practice among the larger eCommerce catalog vendors.

Mfr Part Number	Product Name	Description	Vendor Name	Vendor Catalog #	Price
908340	Part #DW235G By Dewalt	1/2" VSR Heavy Duty Drill 0-850RPM3. DEWALT #DW235G	ABC Inc.	N/A	\$115.52
N114R13	Extra Length Drill Bit	Black & Decker/DWLT DW1608: 135 split point. ...	Best Yet Co.	N/A	\$11.13
07202906	3/8 HD VSR 0- 1200RPM Right Angle Drill	DeWALT, DW160V, Corded Electric Drills...	XYZ Industrial Supply Co. Inc.	DW160V	\$162.86

This environment does not provide sufficient transparency for a Contracting Officer, who may be tasked with evaluating prices for thousands or tens-of-thousands of individual parts per contract, to determine if an item under evaluation is priced reasonably. It also makes the task of performing horizontal price analysis nearly impossible.

What can be done to resolve this complicated matching process?

An automated system needs to manage the process; one that can overcome data quality issues that complicate comparison and evaluation, can rapidly examine a large number of products, and can identify prices requiring further inspection by the Contracting Officer. **If that sounds like a AI problem, that’s because it is.**

GSA and DoD recognized this situation early on and adopted an information-era perspective to address the problem. Both ended up licensing XSB Price Point®, an automated price benchmarking and evaluation tool. Price Point joins proprietary, commercial and open data to provide users with the ability to rapidly evaluate proposed item prices and flag those items that require Contracting Officer review and vendor negotiation. Price Point leverages XSB’s powerful Master Data File technology to interpret and standardize a wide variety of manufacturer names, brand affiliations, part number representations, and packaging inconsistencies common to the supply chain. Once standardized, Price Point compares the proposed item price to all known prices for the same item across the XSB global item master, a database of more than 90 Million parts and their associated prices.

Typical Users	Contracting Officers, Procurement Specialists, P-Card Holders
Typical Questions	<ul style="list-style-type: none"> • Is this a “fair and reasonable price?” (FAR Compliance) • What should I expect to pay for this SKU or market basket/Target Prices for Rfx? (Supports the development of an IGCE) • Is this item available under an existing Federal Supply contract? <ul style="list-style-type: none"> • Who is the lowest priced supplier • Is it available from a preferred vendor? • Does the item comply with other procurement mandates <ul style="list-style-type: none"> • TAA, Ability One, Green
Alternative Approaches and Risks	<ul style="list-style-type: none"> • Manual google search • 40 man hours vs. 1 hour • Over-priced or non-compliant purchases
Data Set	<ul style="list-style-type: none"> • Supplier catalogs • Government procurement data/Buyer transactional prices • Web-scraping

The Results?

Today, the GSA Federal Acquisition Service relies on Price Point to standardize data for tens-of-millions of products and identify identical parts described differently across numerous vendor catalogs. Price Point helps GSA assess price risk and negotiate better pricing for *GSA Advantage!* customers. Price Point also uses business rules and algorithms, agreed upon with GSA, to ensure compliance with environmental, socio-economic and other procurement regulations.

GSA FAS Procurement Information Notice (PIN) 2013-02

FAS has been working towards improving pricing and reducing price variability, especially for identical items, by implementing commercial pricing tools such as Price Point (XSB). XSB allows the contracting staff to compare products via an automated tool to evaluate the price reasonableness of all existing and future GSA Advantage! product listings and contract price modifications. In collaboration with this tool, the XSB team has provided GSA Price Point training webinars on a monthly basis to contracting staff since FY2012.

GSA has effectively used Price Point price benchmarking data to reduce price variability by re-negotiating prices for more than 1M COTS items on GSA MAS contracts. In November 2012, the agency issued guidance to the FAS (Federal Acquisition Service) workforce on the use of Price Point in

evaluating the prices of existing and future GSA Advantage! product catalogs (Procurement Information Notice 2013-02).

DoD FedMall Contracting Officers have also successfully used Price Point's automation to reduce price variability, eliminate over-priced items from the supply chain and minimize the labor hour burden associated with price evaluation. DoD reported saving **thousands of man hours** per year using Price Point with an **eight-fold increase in the coverage of products reviewed and a ten-fold increase in the number of over-priced products identified.**

The solution implemented by GSA and DoD is not an all-purpose system. It addresses a specific requirement; commercial item price analysis. The benefits of automation however are apparent; Price Point automates laborious tasks, enabling the Contracting Officer to focus on higher value contract evaluation issues. The result has been a tremendous improvement in efficiency and a reduction in total acquisition costs.

How do other agencies approach price evaluation? Many so far seem to scale only on the human level...