

Product Coding Best Practices

A guide to product coding for the Christian-resources industry

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Christian Resources Industry's
Supply Chain Management Committee

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Product Coding Best Practices

A guide to product coding for the Christian-resources industry

Introduction

Appropriate product coding is foundational for efficient retail operations and communication and interaction between trading partners. Product coding saves time and money in business-to-business purchasing transactions and creates visibility for data analysis and cooperative initiatives that lead to better sales and profitability.

These product-coding best practices were developed in conjunction with the industry's Supply Chain Management Committee. They represent key product-coding issues and concerns expressed by both retailers and suppliers.

The industry has two product-coding concerns:

- Using common EAN.UCC's (formerly called Universal Product Codes) to identify products for ordering, invoicing, e-commerce, etc.
- Using category codes for sales and inventory analysis and management.

Since the late 1990s, the industry has been moving toward common coding systems. Old product code systems based on 10-digit ISBN-like, general-merchandise codes were phased out to establish the Universal Product Code as the standard. Book products are moving toward the ISBN-13, slated to take effect fully in 2007, which will be discussed later. The overall retail industry has approved the EAN.UCC, a UPC-like product code that ensures unique product identification globally.

By 2000, an initiative was launched to identify Christian-retail industry product category codes—particularly for books—called Christian Product Category codes. (Music category codes were grandfathered without change into the CPC structure.) These codes allow category-performance analysis and support category management. Gift and

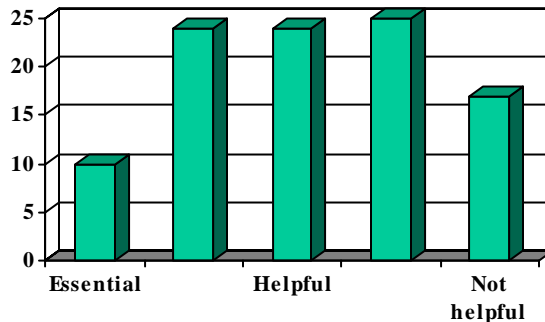
specialty product CPCs have been devised, but are not of highest priority as the industry seeks to gain effective compliance with EAN.UCC (UPC) code standards.

What Is Product Coding?

Product coding is crucial for overall supply-chain efficiency. Proper standardized coding provides tools for forecasting, ordering, product/category performance analysis and evaluation. Proper and accurate coding supports new industry collaborative initiatives, such as STATS reporting, third-party software, core inventory programs, and vendor-managed inventory initiatives. Automated ordering, receiving, and transaction reconciliation depend on standardized product coding.

Industry coding standards are administered by the Christian Product Standards Group. Generally, product-coding initiatives—both EAN.UCC and category coding—eventually should be integrated into broader retail coding standards, such as the Book Industry Study Group’s product-category standards, the Uniform Code Council’s evolving coding structures and product-data registry standards, plus global e-commerce technical standards, such as X-12-based and new XML-based Electronic Data Interchange standards.

How helpful are the standard industry categories?



By percentage of retailer respondents
CBA informal April 2004 survey

Industry Coding Challenges

Inconsistent and nonexistent coding continues to create problems for transactions and analysis.

Product codes:

- Suppliers who use multiple product codes often don’t use the same coding for incoming orders and subsequent invoices. This causes wasted time in purchase order reconciliation and delayed bill payments because codes on orders don’t match those on packing slips and invoices.
- Products have multiple codes in non-standard formats, which contribute to scanning errors, incorrect inventory reports, and other troublesome results caused by incorrect data.
- Some products, particularly gift and specialty products, often have no codes at all; this means retailers:
 - Can’t track inventory or sales performance electronically.
 - Can’t manage inventory properly.
 - Can’t use e-commerce efficiently.

- Can't forecast sales for customer favorites.

Category Codes

- Category codes are not universally provided by suppliers
- Inconsistent category coding results in:
 - Industry database providers unilaterally interpreting product and assigning codes, which leads to multiple codes for the same product (creating an error rate of 40% to 60% among various data base category code listings)
 - Inaccurate sales and inventory tallies for category management, industry sales reporting, and other data exchange
 - Ordering, receiving, and reconciling problems with automated e-commerce transactions
 - The inability to include future products in industry data bases, which limits access to retailers and consumers
- Retailers need to be able to easily map their custom store category codes to the standard industry category code schema. This will ensure:
 - Accurate industry-wide product and sales data reporting and analysis
 - Accurate performance comparisons for core inventory programs and for inventory analysis and merchandising
 - Flexibility that supports innovative store merchandising while allowing consistent and accurate sales reporting in the store and throughout the industry

Changing Codes, Morphing UPCs, and New ISBNs

UPC to EAN.UCC

The Universal Product Code changed into the 13-digit EAN.UCC as of Jan. 1, 2005. It incorporates eight- and 13-digit European product codes and the 12-digit UPC. North American POS systems should be able to handle the new 13-digit codes to avoid receiving or using duplicate product codes. Predominant POS systems in the Christian-retail channel are compliant with the new codes.

EAN once stood for European Article Number, the parallel name for the UPC. UCC stands for the Uniform Code Council, which administers UPCs in North America. The EAN.UCC nomenclature reflects the two groups' merged coding systems that allows unique numbers for products on a global scale. The new code's flexible prefix number identifies countries of origin and companies, ending the rigid three-digit UPC prefix. This allows not only more unique numbers to stave off possible number shortages, but also flexibility in assigning codes to companies based on how many unique codes they might need for products.

For most suppliers, complying with the new 13-digit codes means only adding a zero prefix to the existing 12-digit UPC.

ISBN-10 to ISBN-13

The 10-digit ISBN is also changing into a 13-digit EAN.UCC. By Jan. 1, 2007, all ISBNs should have a 978 or 979 prefix, called a "Bookland" prefix that identifies the following 10-digit code as an ISBN. The goal is to have one code on books.

Some publishers have begun to add the "ISBN-13," which can be seen in catalogs and on books with the 978 prefix and EAN signifier. However, the Book Industry Study Group has recommended book-related products carry all appropriate coding as the standard phases in. That way any market channel or POS system would be able to use product-code identifiers. The BISG guidelines say the ISBN-13 may appear together with the ISBN-10 on the verso of the title page, on the back cover, in catalogs, in EDI, etc. However, the ISBN-10 must continue to be the primary number until 2007.

Publishers can phase in the ISBN-13 during the next two years, and depending on market circumstances may extend use of the ISBN-10. However, the point of the transition to a single code is to avoid scanning errors and create simplified, efficient supply chain systems for e-commerce, data exchange, and data reporting.

GTINs

These new numbers are part of a family of numbers under the umbrella designation of Global Trade Identification Number. This 14-digit number isn't a separate code but

“stores” EAN.UCCs and other codes inside it. The primary retail use for the GTIN is to identify package and case configurations, which are determined by originating companies.

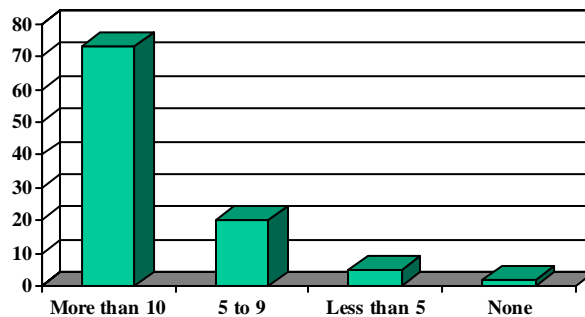
For more information, see www.uc-council.org/2005sunrise or the Book Industry Study Group Web site www.bisg.org. Information also is available at the Christian Standards Group Web site: www.cpsg.org.

Christian Product Category Codes

Origin

The industry’s Christian Product Category codes originated in the CBA Category Management Book Committee and were refined by the industry’s Christian Product Standards Group. CPCs originally were applied to book products. Music category codes were grandfathered into the CPC hierarchy without change. Gift and specialty product category codes were devised, but system complexity and the priority of EAN.UCC compliance on these products have delayed broad implementation.

How many categories do you manage and track in your store?



By percentage of respondents
CBA informal April 2004 survey

Purpose

CPCs aim to connect products to end-user consumers in meaningful and relevant ways. In stores, merchandising by CPC category helps make or affirm consumers’ purchasing decisions. For retailers and suppliers, managing, merchandising, and analyzing by product category presents a better picture of what customers are buying. This supports not only forecasting, merchandising, and replenishment, but also product development. (See *Category Management: An Emerging Strategy for Independent Retailers To Compete in Highly Competitive Markets*, available free through CBA.)

Using CPCs

Retailers and suppliers have different uses for CPCs, which has affected CPC acceptance, implementation, and standardization.

Primary Retailer Uses:

- Provide product category data visibility for sales performance analysis
- Help match merchandising to customer needs and expectations
- Help create differentiation in product assortments and store experience to attract and retain customers
- Help determine floor space allocation based on proportional category sales
- Develop and execute competitive strategies to meet competition from other retail channels and other retailers

Primary Supplier Uses:

- Analysis of sales data for forecasting, promotion, and replenishment planning
- Data visibility to support product development strategies and decisions
- Information to support media campaigns, publicity, and other author-relations initiatives

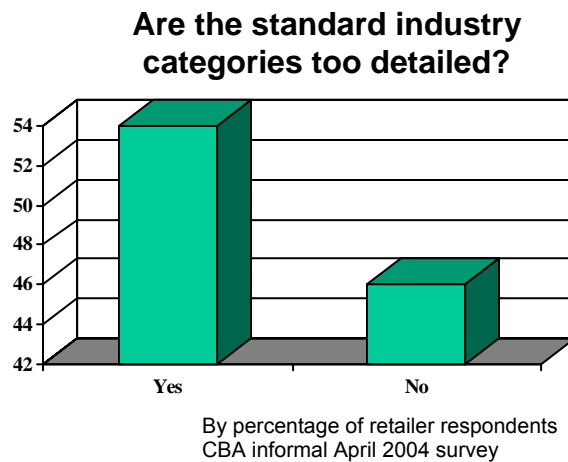
CPC Challenges

CPC Complexity

For retailers, recommended store category or subcategory breakdown is no more than 10. This allows meaningful financial and inventory analysis of each category in comparison with other store categories, plus contribution to overall store performance. Having more than 10 categories per grouping contributes to unfocused store merchandising and customer engagement.

However, publishers and suppliers like more—and more detailed—category tracking to support marketing, production, and logistics. Publishers also use detailed category reporting to support author relations and promotional strategies.

The current CPC list has eight main supercategories with approximately 220 primary and subcategories. In some cases, largest sales volume comes from primary and subcategories. Retailers find it difficult to adopt merchandising strategies based strictly on the complex CPC hierarchy.



Additionally, retailers may develop custom store categories for important local marketing and branding. Retailers have asked for electronic technology to map store categories to industry standard categories to ensure accurate consistent category reporting that both retailers and suppliers can use.

Global Application

After differing positions over the years, the Christian Product Standards Group plans to integrate book CPCs into the Book Industry Study Group's category coding. Christian books likely will become a subset of the general-market Religious category.

Product coding and information standards support value-added data and information services, such as those provided by ipage and *Christian Books & More* data bases.

Data Registries and Data Bases

Data registries and industry data bases are important tools to help trading partners exchange a lot of product and transaction information accurately and quickly—saving time and money. For these industry tools to work properly, product-coding compliance is required. These tools contribute to automated POS updates for inventory, pricing, new product information, etc. They are also crucial for data exchange programs, such as vendor core inventory initiatives, vendor managed inventory assistance or partnerships, and other collaborative projects.

Compliance

Key obstacles to broad industry CPC compliance include:

- Suppliers and publishers not coding product before product release
- Database providers making unilateral product-classification interpretations and assigning CPCs, which result in multiple CPCs for the same product or incorrect classifications
- Confusion about how to adapt CPC hierarchies on the retail floor and effectively link to the CPC standard
- POS technology has limited capabilities to assign, map, or analyze by sales or products by standard categories



Current Status

The CPC book and music category-coding hierarchy has been finalized and is being adopted in the industry. There may be minor changes to categories to improve coding use. For example, one recent change was consolidating the education category and including a new homeschool-resources category and code.

There have been discussions to adapt the CPC codes and hierarchy into broader coding standards, particularly the Book Industry Study Group category-code standards.

Establishing standardized coding and operational practices will help position the channel to effectively use new technologies as they develop, such as Radio Frequency Identification Devices, which further automate receiving and inventory management.

CPC Compliance

Of more than 700 publishers and imprints:

▶ ***10% of all titles were CPC coded***

▶ ***25 companies had 50% or more titles coded (three with more than 1,000 titles)***

▶ ***9 companies with 500 or more titles had none CPC coded***

Product Coding Solutions and Best Practices

Consult and Use CPSG Standards

Suppliers should consult and use Christian Product Standards Group resources to learn about established industry standards.

*THESE STANDARDS CAN BE FOUND AT WWW.CPSG.ORG
OR BY CALLING (480) 966-3998.*

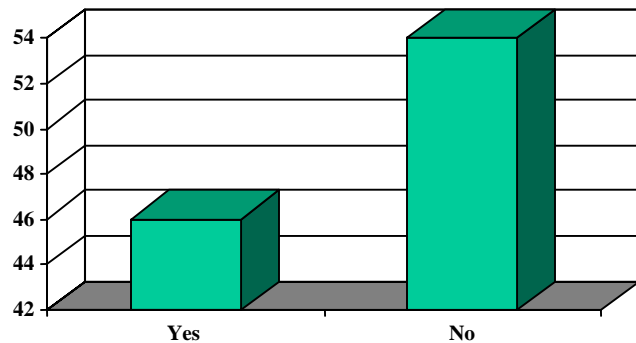
CPSG is establishing standards for data exchange, EDI, product and shipment labeling, and other operational areas. Complying with standards is crucial to simplify transaction and operational processes and reduce channel operational costs.

- An interesting statistic from Ace Hardware, a co-op of approximately 5,000 independent retailers: The group's 2003 distribution-operations cost increased \$1.3 million, but decreased as percent of total sales from 2002—"due primarily to improved labor productivity and additional volume from logistics operations," according to its annual report. The co-op's improved economies of scale and efficiency resulted in higher sales and lower proportional operations costs.

CPC Supplier Best Practices

- Every product in all product categories should be coded according to CPSG standards with EAN.UCC (UPC) and CPC codes (gift and specialty product CPC codes have been devised but are pending implementation, but these items should carry EAN.UCC [UPC] codes).
- Publishers and other suppliers should establish corporate accountability to ensure products are appropriately coded before general release to retailers or wholesalers and distributors.
- CPC coding should be integrated into a company's marketing process to ensure products are appropriately and accurately identified by standard industry identifiers.

Do the standard industry categories make it easy to manage and plan your category strategy?



By percentage of retailer respondents
CBA informal April 2004 survey

- All ordering, invoicing, and shipping documents should identify products by the EAN.UCC (UPC) code.

CPC Retailer Best Practices

- Use standard CPC categories and category codes to track and report sales and inventory performance—both internally or to third-party services and trading partners.
- Recognize that existing CPC hierarchy may not adapt easily to your store, particularly smaller stores. Adopt category strategies that accommodate store size (the smaller the store, the fewer categories) and that support store mission, purpose, and overall retail strategy. Also, create merchandising schemes that support category management strategies for inventory management, evaluation, and stocking.
- Encourage POS technology providers to include electronic category mapping tools that accommodate the nine-character CPC coding structure, and allow you to adapt your customized merchandising categories to the CPC standard coding.
- If technology isn't available or easy to use, consider add-on third-party software systems.
- Use the EAN.UCC (UPC and ISBN-13) for all product coding, ordering, and inventory evaluation.
- **Cycle Counting:** Retailers should coordinate store categories, floor space, and POS reporting tools to allow quick, efficient, regularly scheduled cycle counting.

CPC POS Provider Best Practices

- Provide technology tools that accommodate the nine-character CPC category codes.
- Accommodate new 13-digit EAN.UCC (UPC) product codes. It is recommended to provide or prepare for 14-digit fields for new codes (GTINs) that will identify package and case-lot quantities in supply chain data-exchange systems.
- Provide a mapping tool so retailers can customize store category merchandising strategies yet still report sales and inventory by standardized CPC codes, and communicate to trading partners most successful category merchandising strategies.

- **Cycle Counting:** The mapping tool will help retailers better coordinate POS reports and store layout to quickly and efficiently conduct regularly scheduled cycle counts.
- Provide electronic category analysis tools or provide data-exchange bridges for third-party providers so retailers can better manage and evaluate inventory by category via the POS system.

ONIX

Publishers should use the CPSG-recommended ONIX (Online Information Exchange) standard for data exchange. ONIX establishes rules for electronic file transfers to ensure accurate, quick data exchange between trading partners. The standardized communication format applies to data fields, style (for titles, descriptions, etc.), data submission timelines, and data definitions, nomenclature, action/status codes, etc.

The CPSG is exploring adapting ONIX formats for general-merchandise data exchange to possibly create an industry gift data base.

Labeling

The industry depends on labeling—from individual products to cartons and pallets—to expedite transaction and shipping processes. The CPSG has established labeling standards for all of these areas. As a best practice, all of a supplier’s labels should comply with industry standards to support quick and accurate product handling, shipping, and scanning. Visit the CPSG web site for standards details.

Gift & Specialty Coding

- Gift suppliers should identify all products with EAN.UCC (UPC) codes.
- While gift products from individual artisans and start-up companies may offer retail differentiation through uniqueness, these people and organizations should be notified that product coding compliance benefits them and their customers by helping retailers save time and money in the buying, receiving, and inventory-management process. They should be encouraged to comply with industry product coding and CPC coding standards.

Gift Product Data Standards

- Every gift and specialty-product supplier should prepare to adopt developing data standards to create an industry gift and specialty product data base.
 - These standards will establish common reporting formats for product attributes, product and category coding, originating supplier, pricing, etc.
 - Initially, new product release information will be submitted to a developing product registry and to third-party data-base providers via

Excel spreadsheets. Information will be organized by standardized product, price, and supplier information structures.

- The data-reporting process has been initiated by the industry’s Supply Chain Management Committee to:
 - Provide consistent and accurate gift and specialty-product coding that supports electronic ordering, receiving, payment, and evaluation.
 - This will speed transactions and increase data visibility for better inventory management, increase efficiencies, and reduce costs.

Glossary

CHRISTIAN PRODUCT CATEGORY CODES: These nine-character codes identify product genres and topical reference for Bibles, books, music, videos, gifts, and other products. The objective of a standardize category-code hierarchy is:

- To assist consumers in navigating Christian-store book departments, and to navigate electronic catalogs to make purchase decisions.
- To set standard category codes for all publishers and retailers in an effort to reduce costs and improve business efficiencies for the entire channel.

The CPC codes are content based with retailer shelving in mind. CPC Codes have three category levels: super, primary, and sub-category. The “Super” and “Primary” levels were designed to assist retailers who shelve smaller numbers of Christian books and therefore use broader groupings. The “Sub-category” level was designed to assist retailers who shelve more books and who desire a more detailed breakdown.

The codes support category management initiatives, which help retailers manage and evaluate inventory performance based on sales (or demand) data.

CHRISTIAN PRODUCT STANDARDS GROUP: The CPSG is a participation-supported research and standards forum for the Christian-product supply chain, operating as a subgroup of the Evangelical Christian Publishers Association (ECPA). Organizations from every sector of the Christian product industry are represented.

CPSG’s goal is to optimize industry order processing and fulfillment processes, and develop and endorse operational standards that enhance efficiency and reduce costs. The group’s focus is not to re-invent existing standards, but identify and adopt, then educate and communicate the appropriate standards for use by Christian-resources industry trading partners.

In that recognition efficiencies are not achieved unless standards are adopted into organizational operation, CPSG also develops implementation guidelines to assist industry participants.

Organizations volunteer key associates to collaborate in the development of mutually beneficial standards and guidelines.

CPC: See Christian Product Category code.

CPSG: See Christian Product Standard Group.

EAN.UCC: The most-recent generation of product codes that replace the North American Universal Product Code. The EAN.UCC—administered by the Uniform Code Council in North America and the European Article Number Authority in Europe—is part of a global standards initiative to support supply-chain efficiency through standardized processes and coding.

GLOBAL TRADE IDENTIFICATION NUMBER: The 14-digit number is not a separate code, but an umbrella product number with multiple uses. In retail, the GTIN is used primarily to identify package and case lots for electronic ordering and processing.

GTIN: See Global Trade Identification Number

ISBN-13: A reference to the new 13-digit ISBN. This EAN.UCC coding format brings book-related products under the same coding standard as other products. The three-digit 978 or 979 “Bookland” prefix identifies the subsequent 10-digit code as an ISBN. Once the transition to ISBN-13 is complete in January, 1, 2007, all products should only be identified by one globally standard product code, which simplifies transaction processes, improves data exchange among trading partners, and prevents incorrect POS scanning.

UPC: See Universal Product Code

UNIVERSAL PRODUCT CODE: First implemented in the late 1970s, the UPC was the nation’s first attempt to provide standard product coding to help automate retail reporting, transaction, and supply-chain processes. The 10-digit code expanded to 12 digits, then this year to 13 digits. Also this year, the UPC merged with the European product-code version to become an EAN.UCC. The code title references the European Article Number Authority of Europe and the Uniform Code Council of North America, both standards agencies that administer the codes to ensure products are identified with unique numbers. The merger aims to ensure unique product numbers globally.

Information Resources

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Category Management: An Emerging Strategy For Independent Retailers To Compete In Highly Competitive Markets
(Contact CBA for a free copy; limited supply)

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