A Satyam White Paper

Leveraging the power of UNSPSC for Business Intelligence

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Introduction

The Universal Standard Products and Services Classification (UNSPSC) was created for coding of products and services unambiguously according to industry-agreed naming standards for streamlining commerce among companies, particularly over internet. The development of new technological capabilities such as XML and search engines help to populate product identification tags to catalogs, directories and enterprise applications that are operated by manufacturers, purchasing groups, customers, distributors and other channel partners. The Meta data standards for product information benefit all players in a supply chain.

This white paper attempts to analyze the usefulness of UNSPSC code for standardizing Product information and ensuring data quality in a data warehousing environment

What is UNSPSC?

UNSPSC is available free for use to the public with no copyright restrictions. The Uniform Code Council (UCC) is the code manager for UNSPSC, responsible for ensuring compliance with the principles of the UNSPSC as well as the integrity of the code schema.

UNSPSC is an open, global electronic commerce standard that provides logical framework for classifying goods and services. The hierarchical structure of UNSPSC allows drilling down and rolling up for tactical and strategic spend analysis. UNSPSC is designed to serve three primary functions:

Spend Analysis – Uniform view of all spend across the enterprise

Resource Discovery – Identification of relevant suppliers for specific product or service

Product Awareness – Allows listing of similar products and services under a single category

UNSPSC began as a merger between United Nation's Common Coding System (UNCCS) and Dun & Bradstreet's Standard Product and Service Codes (SPSC) in 1999. As of Nov'02 D&B and Electronic Code Management Association (ECCMA) merged.
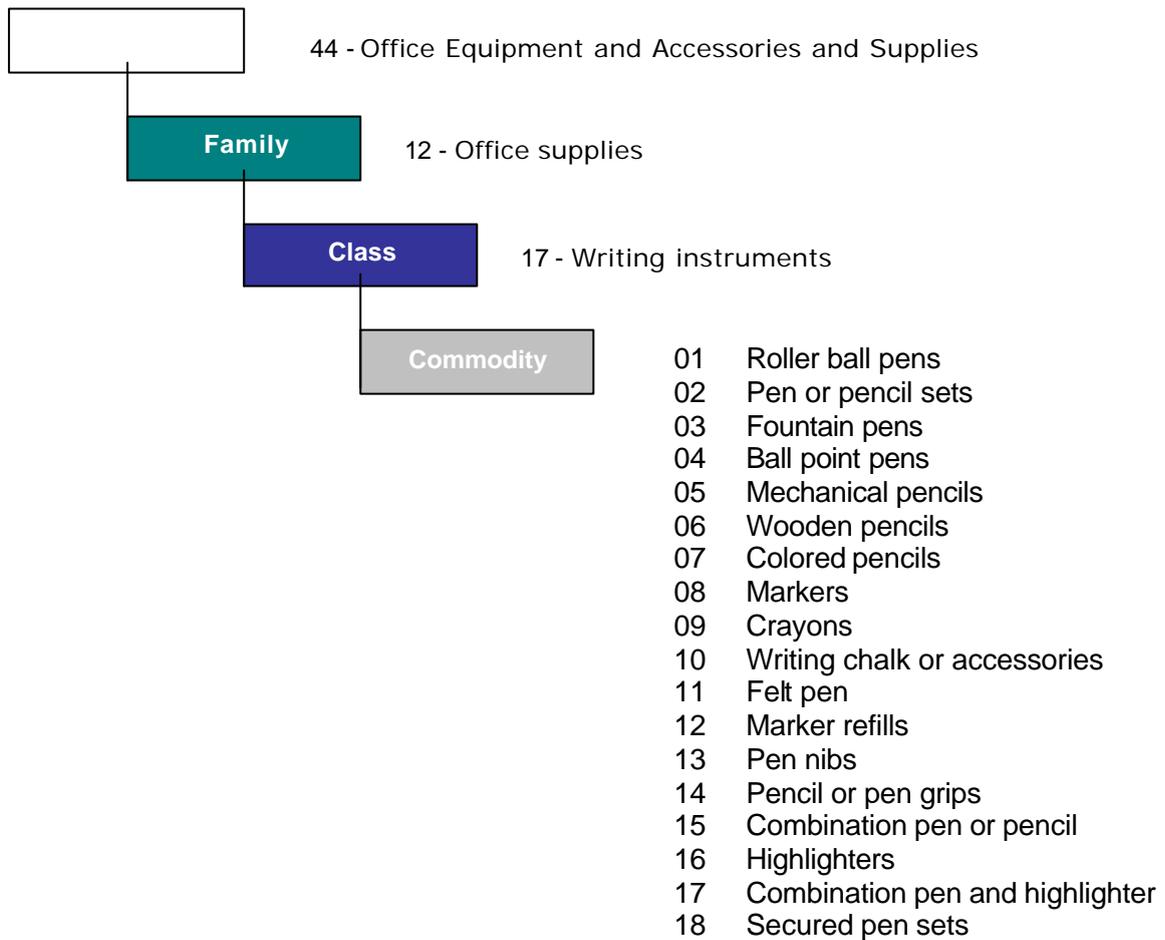
UNSPSC Taxonomy

UNSPSC is a hierarchical classification having four levels. Each level contains a two character numerical value and a description. UNSPSC can be further extended by adding ninth and tenth digit after commodity to indicate the business relationship to the supplier. Current version 6_0501 contains 18000 commodity level codes.

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	44 -	Office Equipment and Accessories and Supplies
Family	12 -	Office supplies
Class	17 -	Writing instruments
Commodity	01	Roller ball pens
	02	Pen or pencil sets
	03	Fountain pens
	04	Ball point pens
	05	Mechanical pencils
	06	Wooden pencils
	07	Colored pencils
	08	Markers
	09	Crayons
	10	Writing chalk or accessories
	11	Felt pen
	12	Marker refills
	13	Pen nibs
	14	Pencil or pen grips
	15	Combination pen or pencil
	16	Highlighters
	17	Combination pen and highlighter
	18	Secured pen sets

In the this example UNSPSC code **44121704** identifies the category "Ball point pens"

Basic Design Guidelines

In situations where there are many uses or many sources for the same commodity, the classification reflects the dominant use of the commodity within the global marketplace. Dominant use varies over time and by country or region. Every effort shall be made to reflect the international use of a commodity, as opposed to regional or industry-specific applications

Rule 1: A commodity will be classified with others that serve or support a common function, purpose or task. These segments, families and classes of commodities are normally found in the same district, store or aisle.

Rule 2: A commodity will be classified with others made by a similar process and often manufactured by the same company or a similar company.

Rule 3: If the first two rules do not apply, then the material from which the commodity is made will help to determine its classification.

Naming Conventions

Rule 1: All hierarchies are explicit; there are no implied hierarchies.

- Commodity titles are not to be used to imply a hierarchy
- Commas are not to be used in commodity titles (the term 'tennis balls' is an appropriate commodity title but not 'balls, tennis')
- The order within any given group is not significant; there are no implied hierarchies

Rule 2: Commodity titles are unique.

In commodity titles, the conjunction 'and' implies both components of a title must be present.

Rule 3: At the class, Family and Segment level the conjunction 'and' should be used. The ampersand (&) symbol should not be used.

- In the Segment, all keywords have leading capitals.
- In the Family, Class and Commodity only the first word is capitalized.

Benefits

- Helps to get comprehensive insight into spend landscape and strategic planning
- Enables supplier rationalization and demand aggregation
- Integrates entire procurement flow from RFP's to ordering, to accounts payable, to general ledger.
- Allows "Drill Down" and "Roll up" analysis of purchase transactions
- Aligns supply chain and increases value chain efficiency
- Supports multi-language uses
- Increases e-procurement efficiency and effectiveness
- Supports analysis with Business Intelligence tools

Why UNSPSC for Data Warehousing?

In a data warehousing environment, where data is to be extracted from multiple transactional systems like ERP, Purchase, Accounts Payable, Legacy systems and multiple business entities across the globe, there is a need for a common standard Dimension to perform analysis on an Enterprise wide basis. Data warehousing team has to make tremendous effort to build a Product

related Dimensions with hierarchies and cross references.

UNSPSC relieves the pain of building and maintaining a Product Dimension by providing data in a consistent schema. Classification tools are available to automatically apply UNSPSC codes initially and for the new codes whenever it enters data warehouse. Its metadata structure is perfectly suitable for analysis by OLAP tools.

UNSPSC is available in multi-languages like English, French, German, Italian, Japanese and Spanish. Russian, German and Korean language translations will also be available in future. Having a unique code allows unambiguous translation of the commodity's description into any language and provides enterprise view for the data.

UNSPSC Vs Internal Material Codes

UNSPSC's Hierarchical taxonomy allows Roll up and Drill down analysis and the user can get into the "Level of Specificity" that best suits to his business. Internal Material codes will have limited or non-existent hierarchy.

UNSPSC helps to perform tactical and strategic sourcing at many different levels and helps to integrate the business and eliminate undisciplined buying activities where as Internal codes can help only to take operational decisions.

UNSPSC adds an enterprise-wide view to the spend analysis. This helps better Supplier management and to negotiate volume based discounts. This is supported in a limited way by internal codes.

UNSPSC schema is available in multi-languages, which helps implementation across the globe. Internal codes will not support multi-language uses.

UNSPSC increases e-Procurement efficiency by inserting codes in various electronic trade documents and media such as product catalogs, web sites and computer applications throughout an extended supply chain. Internal codes will extend minimum support to e-Procurement.

UNSPSC enables buyers to identify suppliers for a particular category; where as limited support is available with internal codes.
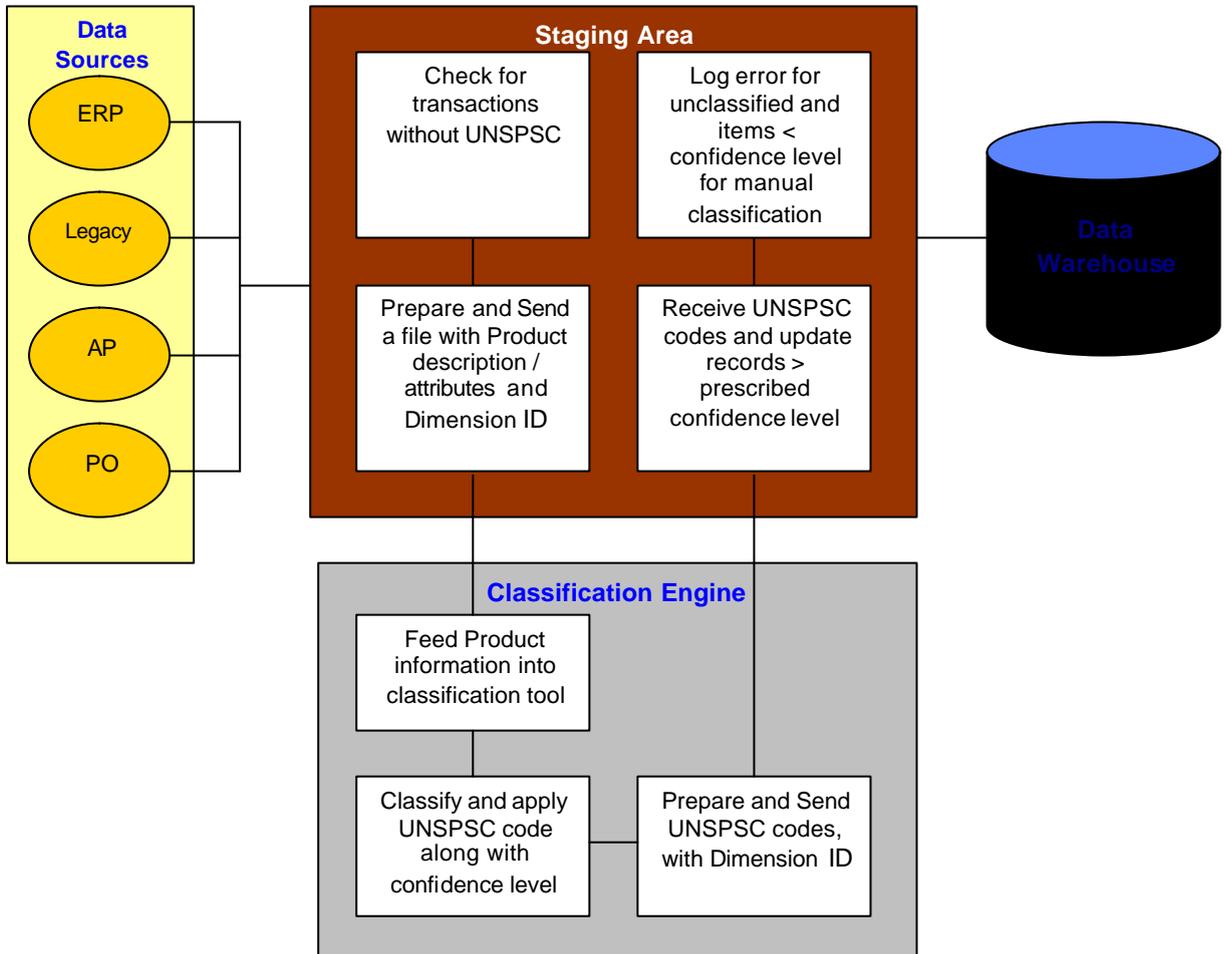
UNSPSC requires upfront effort to apply codes but it can be automated with a tool. Comparatively the effort will be more to apply internal codes.

Implementation

UNSPSC can be implemented in a data warehouse with minimal/no impact to operational systems. The process of classification has to be integrated with ETL process in the staging area. An indicative process for implementing UNSPSC in a Data warehouse with an automatic classification tool is described below.

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Data Sources

- ERP
- Legacy
- AP
- PO

Staging Area

Check for transactions without UNSPSC

Log error for unclassified and items < confidence level for manual classification

Prepare and Send a file with Product description / attributes and Dimension ID

Receive UNSPSC codes and update records > prescribed confidence level

Data Warehouse

Classification Engine

Feed Product information into classification tool

Classify and apply UNSPSC code along with confidence level

Prepare and Send UNSPSC codes, with Dimension ID

Case Study: A Study for the Adoption of UNSPSC

Our client is a Fortune 100 company and world's leading manufacturer of construction and mining equipment, diesel and natural gas engines and industrial gas turbines. The company is a technology leader in construction, transportation, mining, forestry, energy, logistics, electronics, financing and electric power generation. The client is in the process of building a Data warehouse for Global Purchasing Division to have an enterprise-wide view of spend analysis. The main objective is to perform strategic sourcing for Cost Reduction and better Supplier management.

As a part of Six Sigma initiative for Data Quality in the data warehouse, the client wanted to evaluate the adaptability of UNSPSC categorization for their commodities. Satyam carried out a pilot project to help them in making the decision.
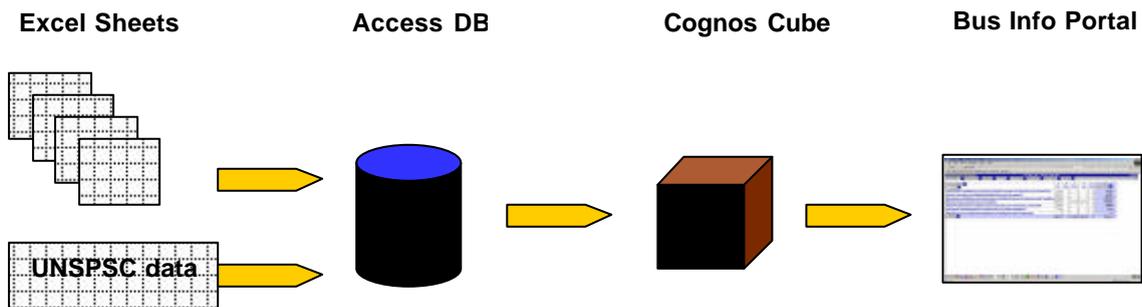
Project Scope
The scope for the project includes:

- To collect sample Item data from different category managers for direct materials
- To categorize them using UNSPSC
- To develop a Spend cube with a cross walk table
- To publish the Cube in the intranet site for evaluation by users
- To evaluate the suitability of UNSPSC.

The Process
Following representative data for categorization was collected from different Material category teams like Rough Casting, Machined Casting, CAB Assembly, Steel and others.
- Part Number and Description
- Material code and Description
- Family codes and Description
- Geometric codes and Description
- Buying and Receiving Facility
- Supplier
- Annual Spend
- Estimated Annual Usage

Excel Sheets **Access DB** **Cognos Cube** **Bus Info Portal**

The data from different Material Category Teams were collected in excel spreadsheets and consolidated into Access tables. UNSPSC codes were assigned to each record. An UNSPSC dimension table was created with the UNSPSC category data V6.0501 downloaded from www.unspsc.com. A

spend cube was built with UNSPSC, Material, Family, Data Source and Facility dimensions. The cube was published in the Business Information portal. For indirect materials, the client has decided to go in with UNSPSC and for direct materials the evaluation is under progress.

Conclusion

Adoption of UNSPSC has clear advantage especially in a Data warehousing environment in standardizing the item data and ensuring Data Quality. Its hierarchical structure helps to model the data in a multi-dimensional format and to get a global view of the Spend. In some cases even at the commodity level, the code is not granular enough to handle detailed analysis. This problem will get resolved when more and more companies adopt UNSPSC and contribute to industry specific commodity levels.

References

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About the Author

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Ananth handles project management, presales and competency building activities for the group in USA. He has over 15 years of experience in Application Development, ERP implementation and Business Intelligence. Prior to Satyam, Ananth was a Senior Executive - Business Planning & IT with TVS Electronics. Ananth can be contacted at ananth_ark@onsite.satyam.com