



Global Data Synchronization and Data Quality

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Review Best Buy's Initiative

- Business Problem
- Releases Overview

Global Data Synchronization Overview

- Terminology, Messages, Processes
- Industry Benefits

Data Quality

- The Problem

Questions





Best Buy's Business Problem

Item Processes Drive High Supply Chain Costs and Merchant Inefficiencies

- Industry studies estimate that an average of 260 man hours per retailer are spent each week between trading partners resolving SKU/data reconciliation
- 7 ways to set up and/or maintain an item in Best Buy's enterprise system results in high IT costs to respond to future item data needs and capabilities – Costly to support
- No visibility to where data discrepancies are occurring – internal vs. external





Lean Six Sigma Key Learnings

- Accuracy of Source Material Differs Significantly
- Reason for Accuracy Differences
- Single Item Out of Box Dimensions Impact Return Rate
- Better Operational Definitions of Height, Width, and Depth are needed by product category
- Findings consistent with industry GDSN Data Accuracy Task Group work that is ongoing





Best Buy's Business Problem

Future Strategies Require Item Capabilities/Data not Currently Available

- Examples include RFID, Assortment Optimization, and Complex Selling





External and Internal Data Synchronization...

...are required to provide accurate product information across businesses, channels and customer segments

Internal

Product Information Management (PIM) Tool

- Store product information in single repository
- Staging and workflow for item approval, maintenance, and Best Buy specific attributes
- Provide Best Buy one database to go for product information.
- Publish product information to front and back office systems

External

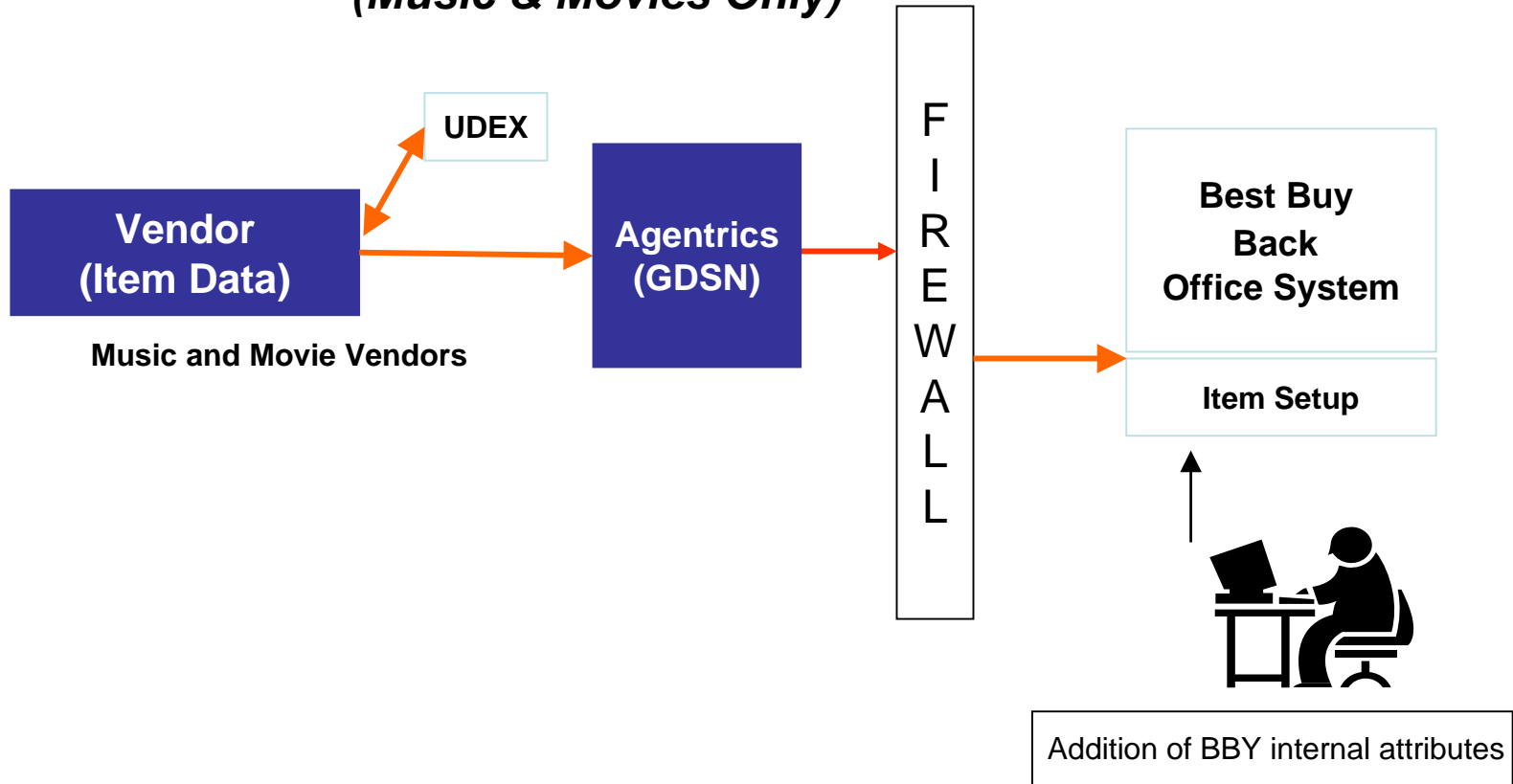
Global Data Synchronization Network (GDSN)

- Automate product introduction and changes between Best Buy and the partners
- Cleanse, validate, cross-reference, review and approve product attributes utilizing UDEX data quality service.
- Staging area for un-authorized vendor items for later retrieval and action



Foundation Data Management Release 1

New Item Induction (Music & Movies Only)



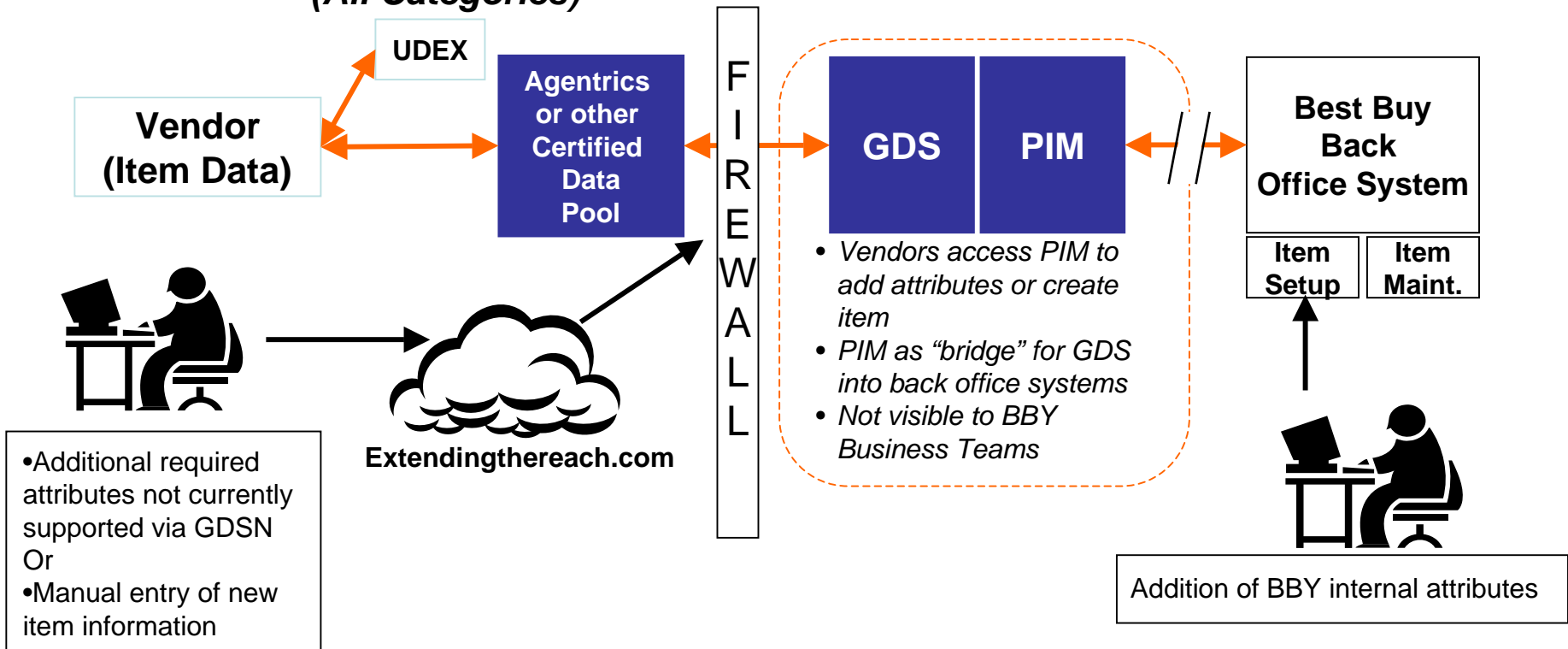
□ Production: February 2005





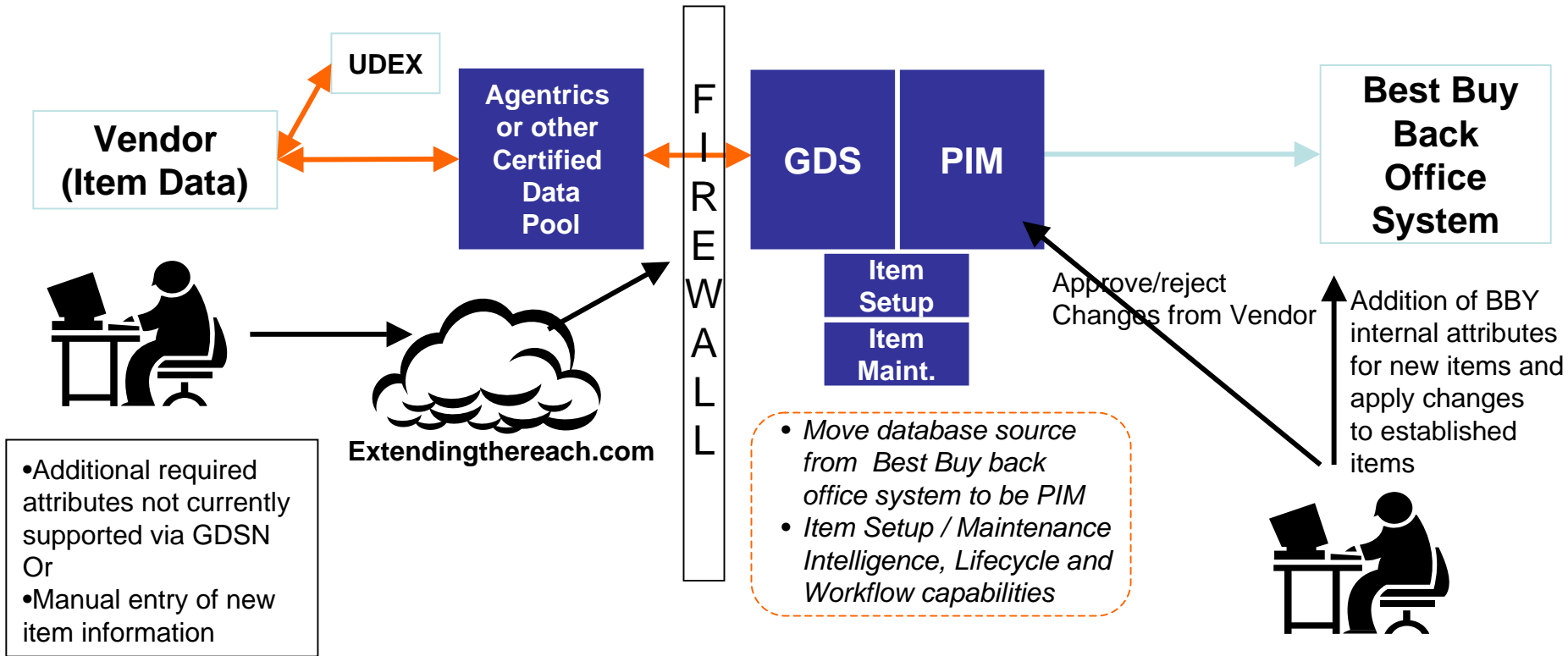
Foundation Data Management Release 2

Canada *New Item Induction with PIM Tool and GDS Synchronization Pilot (All Categories)*



- ❑ **Go-Live Timing: September 2006**
GDS Synchronization (Maintenance) Pilot - 4-6 vendors – limited items





❑ **Go-Live Timing: TBD**

❑ **GDS Synchronization (Maintenance) - All vendors and categories**



What's In It for Us?

Vendor Specific

Cleanse and submit data once, available to multiple retailers and vendors' backend systems.

Standardized item attribute definitions across retailers.

Eliminates manual set-up forms.

Best Buy Specific

Reduces time required for buyers to manually set up a sku

Vendor + Best Buy Win Win

Improved product speed to shelf and accurate standardized, validated item data results in:

- Reduced out/overstocks
- Reduced lost sales/customers
- Reduced logistical costs
- Reduced invoice delays

Global, industry-wide initiative

Builds the foundation for more collaborative initiatives such as CPFR and RFID





What is the Global Data Synchronization Network?

The Global Data Synchronization Network (GDSN) is a secured internet-based, interconnected network of interoperable data pools and a global registry that enables companies around the world to exchange/synchronize standards based supply chain data with their trading partners. The model is based on a publication and subscription process.





What is the Global Data Synchronization Network?

- GDSN assures that data exchanged between trading partners is compliant with universally supported standards.
- GDSN consists of:
 - trading partners (suppliers & retailers)
 - data pools (services that hold and process trading partner data) and
 - GS1 Global Registry™ (a worldwide directory to help the GDSN community locate data sources and manage ongoing synchronization relationships between trading partners)





GDSN Terminology

Global Trade Item Number (GTIN) – a 14 digit number that uniquely identifies a product globally

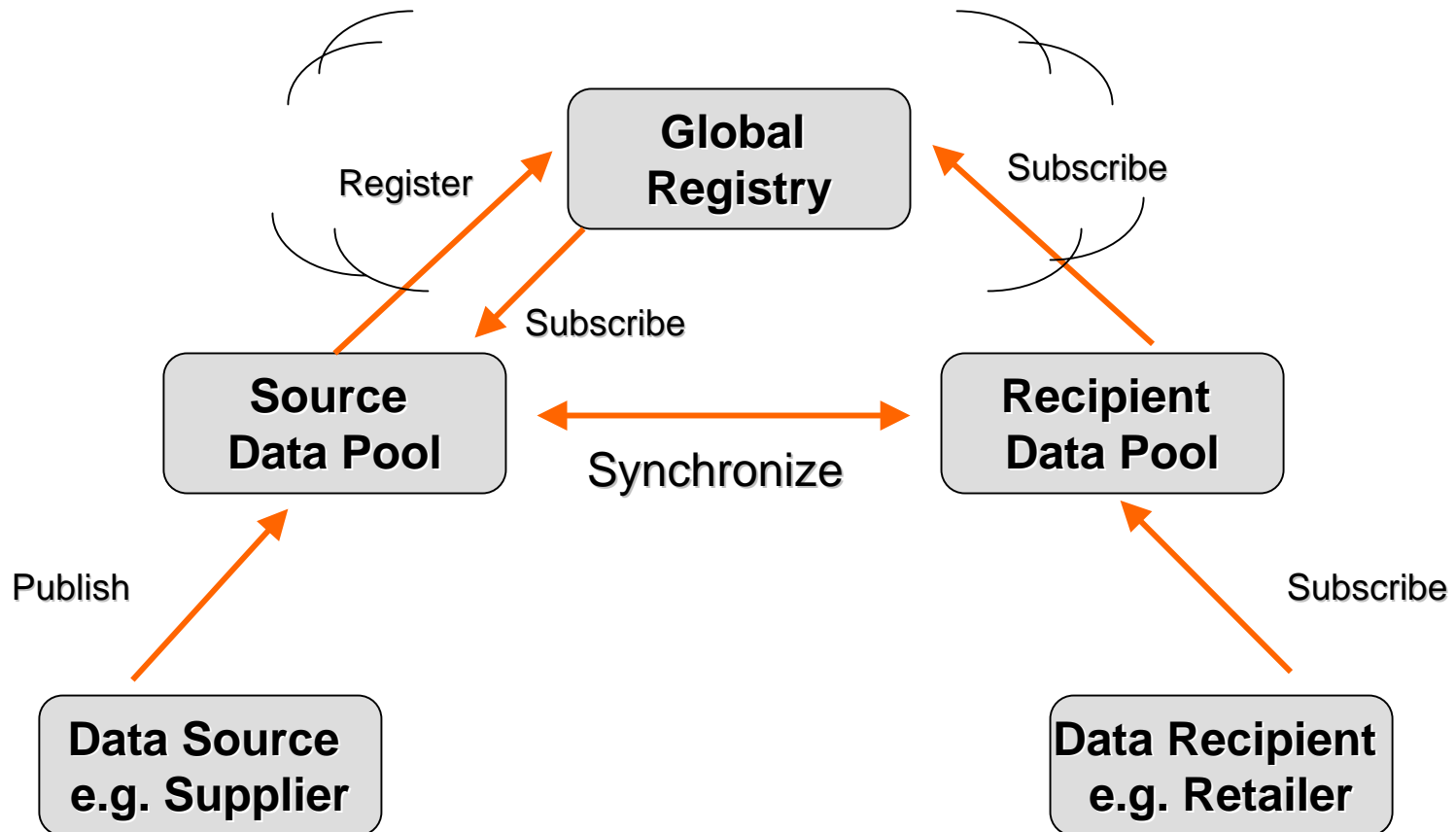
Global Location Number (GLN) – a 13 digit number that uniquely identifies a company and its various locations including distribution centers, offices, etc.

Global Product Classification (GPC) – a global standard classification scheme for vendors and retailers to categorize their products

All three types of data are required for data synchronization



The GDSN Process





Industry GDSN Benefits

GDSN provides standardized, reliable data for effective business transactions in both local and global markets, driving costs of the supply chain.

GDSN:

- Ensures that **trading partners work in a standardized way** thereby reducing duplicate systems and processes
- Ensures that **item data is updated and consistent** between trading partners





Industry GDSN Benefits

- Ensures that trading partners **classify their products in a unique, standardized way** (Global Product Classification)
- Provides a **single point of entry** for retailer and supplier trading partners (their chosen Data Pool), so reducing the cost of trading data
- **Guarantees uniqueness** of item (product, case, pallet), party and location through the GS1 Global Registry
- **Certifies** that Data Pools and the GS1 Global Registry comply with GDSN rules



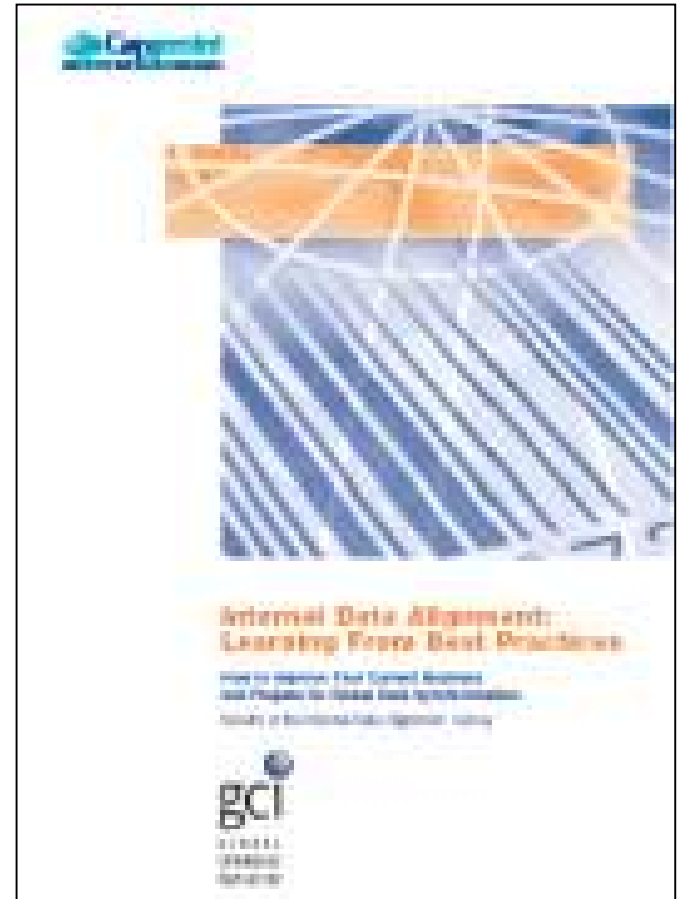


Data Quality – The problem

2004: “Internal data alignment is critical to achieving the benefits of data synchronization.”

Source: CGE&Y “Internal Data Alignment: Learning From Best Practices” May 2004

- Accurate and consistent item data is the cornerstone for an efficient supply chain.
- If data quality is poor, initiatives like GDS and RFID will not deliver the promised benefits.
- The big danger is that all these collaborative initiatives will only lead to an acceleration of the problems resulting from poor data quality.





Data Quality = Complete, Accurate, Consistent

Completeness

- All required attributes are populated with acceptable values

Accuracy

- The values are populated with accurate values





Consistency












- Product attributes are populated consistently across suppliers with normalized values



You've selected to compare these products:

Compare prices and availability:

| | Bose Lifestyle® 48 5.1-Ch. Home Theater System - White LS48 | Denon 280W 2.1-Ch. Home Theater System w/P.-Scan DVD/CD/MP3/SACD Player S301 | KEF 5.1-Ch. Home Theater System w/P.-Scan DVD/CD/MP3 Player KIT100 | Panasonic 500W Home Theater System w/P.-Scan DVD Player SC-ST1 |
|---|---|--|---|--|
|  |  |  |  | |
| Our Price: \$3,999.99 | Reg. Price: \$1,599.99 You Save: \$200.00 Sale: \$1,399.99 | Our Price: \$999.99 | Our Price: \$599.99 | |
| ADD TO CART | ADD TO CART | ADD TO CART | ADD TO CART | |

| Product Details | Remove Item | Remove Item | Remove Item | Remove Item |
|---|------------------------------------|---|--|--|
| DVD Disc Capacity | 1 | 1 | 1 | 1 |
| Store Music on Hard Drive | Yes |  |  | No |
| Playback Formats | DVD-Video, DVD-R, CD, CD-R/RW, MP3 |  |  |  |
| Satellite Radio-Ready | No |  |  |  |
| Dolby Digital Decoder | No | Yes | Yes | Yes |
| DTS Decoder | Yes | Yes | Yes | Yes |
| Dolby Pro Logic Decoder | No | Yes | Yes | Yes |
| Number of Speakers | 5 + 2 subwoofers | 2 + subwoofer | 2 + subwoofer | 5 + subwoofer |
| Satellite Speakers | Two 2-1/2" wide-range | 2 |  | 2-way |
| HDMI Inputs | No |  | No | No |
| DVI Inputs | No |  | No | No |
| Digital Input | 1 optical | | 1 optical | 0 |

Missing data makes comparisons difficult

CLOSE

Product Comparison

PRINT

You've selected to compare these products:

| | | | |
|--|---|--|--|
| | <p>Bose Lifestyle® 48 5.1-Ch. Home Theater System - Silver LS48</p> <p>Our Price: \$3,999.99</p> <p>ADD TO CART</p> | <p>Bose Lifestyle® 48 5.1-Ch. Home Theater System - White LS48</p> <p>Our Price: \$3,999.99</p> <p>ADD TO CART</p> | <p>Bose Lifestyle® 48 5.1-Ch. Home Theater System - Black LS48</p> <p>Our Price: \$3,999.00</p> <p>ADD TO CART</p> |
|--|---|--|--|

Compare prices and availability:

| Product Details | Remove Item | Remove Item | Remove Item |
|---|-----------------------------|-----------------------------|-----------------------------|
| DVD Disc Capacity | 1 | 1 | 1 |
| Store Music on Hard Drive | Yes | Yes | Yes |
| Dolby Digital Decoder | Yes | No | No |
| DTS Decoder | Yes | Yes | Yes |
| Dolby Pro Logic Decoder | No | No | No |
| Number of Speakers | 5 + subwoofer | 5 + 2 subwoofers | 5 + subwoofer |
| Satellite Speakers | Two 2" wide-range | Two 2-1/2" wide-range | Two 2" wide-range |
| HDMI Inputs | No | No | No |
| DVI Inputs | No | No | No |
| Digital Input | 1 optical | 1 optical | 1 optical |
| S-Video Inputs/Outputs | Yes | Yes | Yes |

Same Product;
Different Colors;
Different Size Speakers?

Microsoft Outlook We... | DVD Home Theater - ... | http://www.bestbuy... | Google

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“Hewlett Packard” ? “HP” ? “Hewlett-Packard”?

- If product data is not normalized, your online search engine must be “smart” enough to recognize all possible search terms or you will disappoint the consumer and lose sales.
- Additional functionality designed to enhance the shopping experience that is driven off the data must also recognize all variations of the search term.
- Internal systems used by sourcing, marketing and merchandising personnel typically do not have the sophisticated search capabilities of the web shopping site resulting in sub-optimal merchandising decisions and lost sales.





Educational Resources

Best Buy Supplier Portal

- www.extendingthereach.com

GS1 Canada website

- www.gs1ca.org

UConnect conference

- June 6 – 8, 2006 Nashville, Tennessee





QUESTIONS





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