



Enterprise Information Architecture

*A Foundation for Portals, Knowledge Management,
Business Intelligence, and Process Integration*

June 5, 2013

Session 1 - Enterprise Information Architecture – The Time is Now

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Philip Wisniewski



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Seth Earley, CEO, Earley & Associates

- Co-author of Practical Knowledge Management from IBM Press
- 17 years experience building content and knowledge management systems, 20+ years experience in technology
- Former Co-Chair, Academy of Motion Picture Arts and Sciences, Science and Technology Council Metadata Project Committee
- Founder of the Boston Knowledge Management Forum
- Former adjunct professor at Northeastern University
- Guest speaker for US Strategic Command briefing on knowledge networks
- Currently working with enterprises to develop knowledge and digital asset management systems, taxonomy and metadata governance strategies
- Founder of Taxonomy Community of Practice – host monthly conference calls of case studies on taxonomy derivation and application.
<http://finance.groups.yahoo.com/group/TaxoCoP>
- Co-founder Search Community of Practice:
<http://tech.groups.yahoo.com/group/SearchCoP>



Philip Wisniewski, EVP, Client Development, Kanban

- Nearly 20 years of content-centric technology experience working with Marketing, IT, LoB, Customer Service and KM specialists and stakeholders.
- Been involved with award-winning projects across a diverse set of disciplines, such as:
 - Global intranets
 - eCommerce
 - Web content management
 - Enterprise document management
 - Customer service applications
 - Content marketing
 - Marketing technology optimization/integration
- At Kanban, Philip applies a mix of strategy, client development, and service delivery, to identify and foster value-based client relationships and deliver business impact through content-centric technology initiatives.
- Kanban is a boutique engineering consultancy, headquartered in NYC, focused on the integration and optimization of content-centric and marketing technologies.



Earley & Associates Overview

Founded – 1994 **Headquarters** – Boston, MA

What we do – Help organizations make information more findable, valuable and usable through taxonomy, metadata, information architecture

Our core team – Information and system architects, library scientists, process improvement consultants, project managers and other information management specialists

Our services – Taxonomy, Metadata, Information Strategy and Architecture, Search Strategy and Implementation, Enterprise Content Management, Digital Asset Management

Our unique solutions –

- *Knowledge Management with **Enterprise Search & Findability***
- *Dynamic Content & Digital Asset Strategies with **Content Choreography***
- *Product Information Architecture with **Multi-Channel Product Agility***

Earley & Associates | Industries & Clients

Pharma, Life Sciences & Healthcare

QOSINA
Thousands of Stock Components

CRICO RMF
Protecting providers.
Promoting safety.

RTI
INTERNATIONAL



My Doctor Online
The Permanente Medical Group

The Jackson Laboratory
Leading the search for tomorrow's cures

Lilly

MERCK

life technologies™

PHILIPS
sense and simplicity

Johnson & Johnson

AstraZeneca

KAISER PERMANENTE.

MayoClinicHealthSolutions.com

Bristol-Myers Squibb
Together we can prevail.®

THE DOCTORS COMPANY

Harvard Pilgrim Health Care

Abbott
A Promise for Life

ThermoFisher SCIENTIFIC

Financial Services & Insurance

Allstate. You're in good hands. **Capital Group™ Companies**

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CO-OPERATIVE INSURANCE COMPANIES

Aetna®



Vanguard®

FRANKLIN. TEMPLETON. INVESTMENTS

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AMERICAN GREETINGS

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BED BATH & BEYOND

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intelligence everywhere



Manufacturing



CORNING

Schlumberger

Raytheon



Amway

The Coca-Cola Company

ThermoFisher
SCIENTIFIC



Events and Communities

Upcoming Webinar Events

Jumpstart Series

Enterprise Information Architecture:

A Foundation for Portals, Knowledge Management, Business Intelligence, and Process Integration

June 5: Enterprise Information Architecture – The Time is Now

June 12: Right-Sizing Enterprise Information Architecture

June 19: Taxonomies: Not just for knowledge management

June 26: Managing Taxonomy for the Enterprise

Communities of Practice

- LinkedIn
 - Taxonomy CoP: <http://www.linkedin.com/groups/Taxonomy-Community-Practice-1750>
 - IA Experts: <http://www.linkedin.com/groups?gid=3774461>
- Yahoo
 - SharePoint IA Group: <http://tech.groups.yahoo.com/group/SharePointIACoP>
 - Taxonomy Group: <http://finance.groups.yahoo.com/group/TaxoCoP>
 - Search Group: <http://tech.groups.yahoo.com/group/SearchCoP>

Upcoming Training Opportunities

- SharePoint Information Architecture (3 days)
 - Learn more and register: <http://www.earley.com/training/sharepoint-information-architecture>

Housekeeping

- Webinar will last 80 minutes
- You may submit questions to the speakers via the Question box on your screen.
- Need help? You can email sharon@earley.com
- Tweet about this webinar with hashtag **#eiajumpstart**
- Follow us on Twitter at **@earleytaxonomy**
- Fill out the survey that should be in your inbox
 - Let us know what topics you are interested in, and how we can improve the series.
- Slides and recording will be available in a few days

Agenda

- Defining Enterprise Architecture
- Purpose of Enterprise Information Architecture
- The Problem, Environment, Challenges and Solution
- Big Data and Enterprise IA
- Conceptual Representations
- Benefits of Enterprise IA
- What's different?
- Alignment and Business Case

But first, a poll

What is the status of information architecture in your organization? (pick one)

- Key asset for our IT infrastructure
- Early days but partially complete
- Growing awareness of importance
- I'm shouting in the dark

What do we mean by “Enterprise Architecture”?

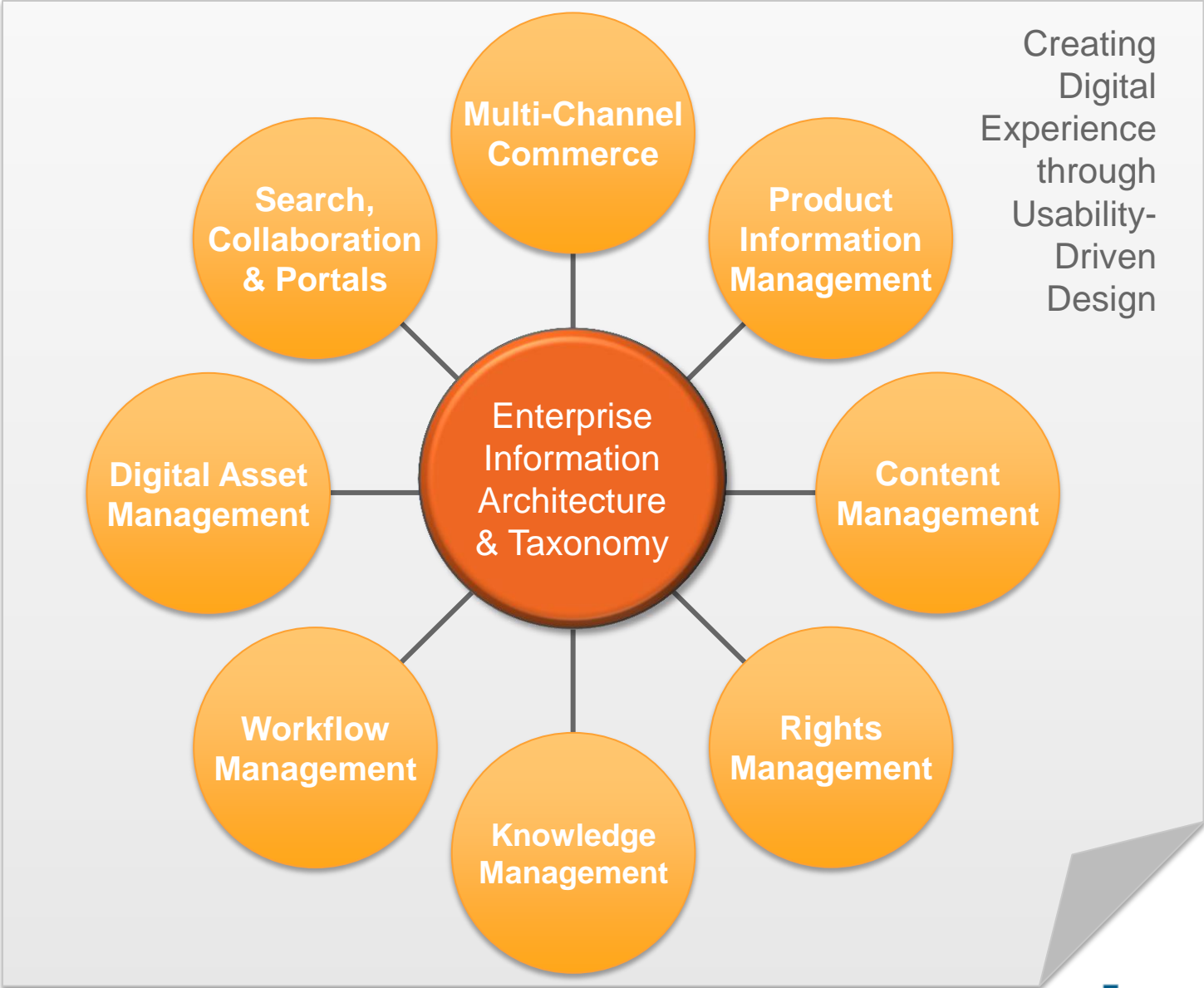
- Every organization has silos
- Every organization will continue to have silos
- When silos are eliminated by some kind of consolidation project, new silos will emerge
- The nature of business and technology is that technology cannot keep up with the pace of business change – they operate at fundamentally different clock speeds
- Technology is designed to satisfy a snap shot in time of the requirements of the business, by the time things are deployed, the target has shifted
- If the business moves significantly faster than technology capabilities, or the technology infrastructure is exceptionally complex, then the business will go off and deploy point solutions that may be disconnected from enterprise initiatives.
- The only way to deal with this is to have an Enterprise Information Architecture that is the foundation for new projects and programs that allows for better integration and a more agile information ecosystem

Enterprise architecture

“A **comprehensive framework** used to manage and align an organization's Information Technology (IT) assets, people, operations, and projects with its operational characteristics. In other words, the enterprise architecture defines how information and technology will support the business operations and provide benefit for the business.”

The National Institutes of Health <http://enterprisearchitecture.nih.gov/About/What/>

**Enterprise Information Architecture Initiatives
Require Foundational Approaches in **Core
Information Architecture** in Order to Achieve
Long Term Success**



The Environment | Complex and Heterogeneous

Data Sources

Product Lifecycle Management

Digital Asset Management

Data Warehouses

ERP Systems

Messaging

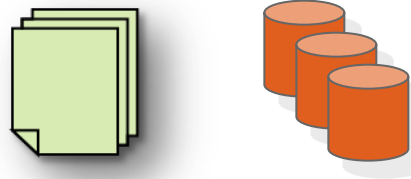
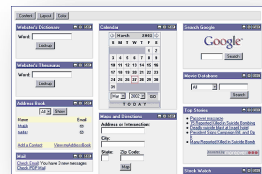
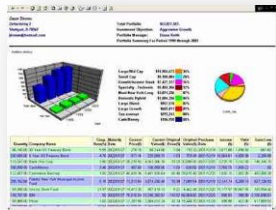
Business Intelligence

Document repositories

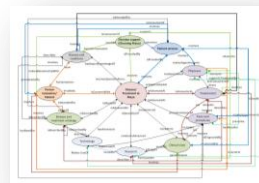
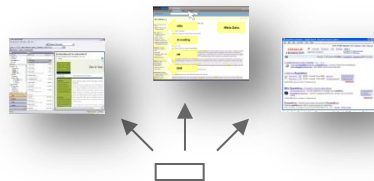
Intranets/web pages

Customer Relationship Mgt

Custom databases and applications



Search/Tagging/Taxonomy Integration Framework



Date	Date 12/18/06
Part	Part Number - 2398788-234 Lot 67 Lot 12
Who	Engineer - Joe Smith Protocol - 2349
How	
Result	Pass/Fail - Pass



Auto categorization/
Clustering

BI Integration

Ontology Navigation

Entity
Extraction

Faceted
Search

Semantic
Search

Access Mechanisms



The Environment | When is Enterprise IA Needed?

Information Project Type	Driver	Role of Enterprise Architecture
Structured Data		
Analytics	Need for appropriate analytics and elimination of unnecessary translation processes, improved findability of reports	Consistent naming conventions in all applications across structured and unstructured information required by analytics processes; allows for consistent roll ups and consolidation , location of reports and analysis with taxonomy
Reporting and Performance Management	Elimination of redundant reporting and analysis, easier rollups, consistent reporting	Foundation for reporting, allows comparison across business areas, helps unify reports, improves agility, speeds reporting processes
Enterprise Data Warehouse	Need for unified reference data and correct levels of granularity, single source of truth , elimination of redundancy	Allows for improved structured data quality, elimination of content ambiguity
Data Integration and Migration	Consistent terminology and correct granularity required for integration and migration	Allows for conversion of data and formats, elimination of inconsistencies prior to migration, improves data quality

The Environment | When is Enterprise IA Needed?

Information Project Type	Driver	Role of Enterprise Architecture
Unstructured Data		
Enterprise Content Management	Essential for consistency in content processes, integration, access, effective search, content lifecycles, records processes	Organizing principles behind content models, controlled vocabularies, metadata schemas; enables overall findability
Social Media	Determine effectiveness of marketing and value of participation in social media through search metrics, blog mentions, conversations on social networks	Essential to tailor sentiment analysis to specific terminology of enterprise
Knowledge Management	Need to capture lessons learned and organizational memory. Allows for creation and management of communities and content	Organizes explicit knowledge through repositories and knowledge bases, organizes tacit knowledge through expertise cataloging, tracking, location

The Environment | When is Enterprise IA Needed?

Information Project Type	Driver	Role of Enterprise Architecture
Unstructured Data		
Portal	Consistent access across structured and unstructured systems, unified workplace, simplified integration and application access	Organizing principles behind knowledge directories, content models, metadata, web parts, communities, applications, pages
Enterprise Search	Need for improved precision and recall for search, location of structured and unstructured info, reduction in “noise”, enablement of related concept search	Taxonomies drive faceted search structure, allow for tagging of content, best bet management, search disambiguation, conceptually related terms, role based search results
User Experience	Need for consistent user experience, increased usability, improved learnability of applications	Aides in discovery, captures mental model of user, allows for consistent and unified information experience

The Environment | When is Enterprise IA Needed?

Information Project Type	Driver	Role of Enterprise Architecture
Governance and Enablement		
Data Governance	Need for controlled processes for changed to reference data	Taxonomy processes parallel data processes and are a subset of data governance
Enterprise Information Model	Need for consistency across all aspects of structured and unstructured information	Foundational to all enterprise information management and processes

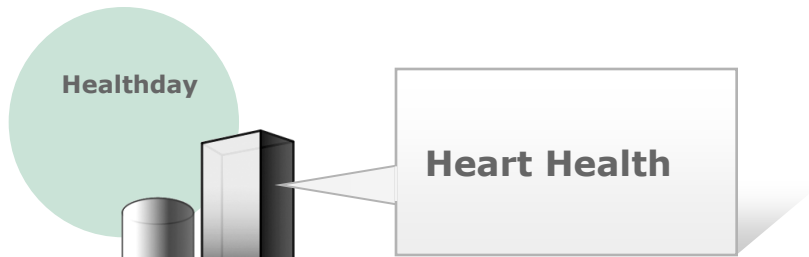
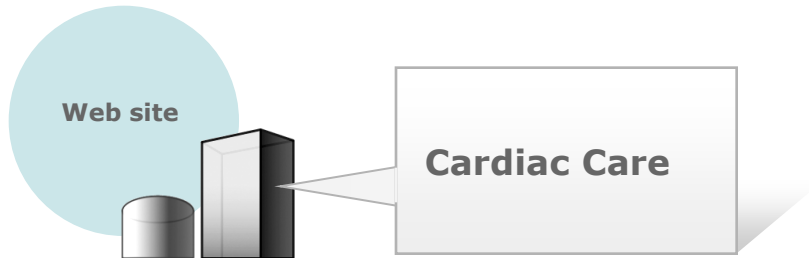
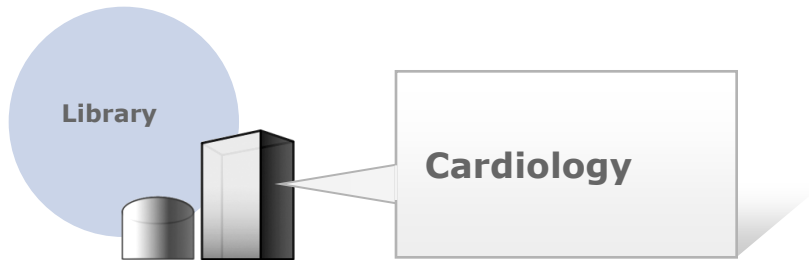
The Environment | Complex Digital Landscape



External Promotion Customer Experience Marketing Management

by Scott Brinker @chiefmartec <http://www.chiefmartec.com>

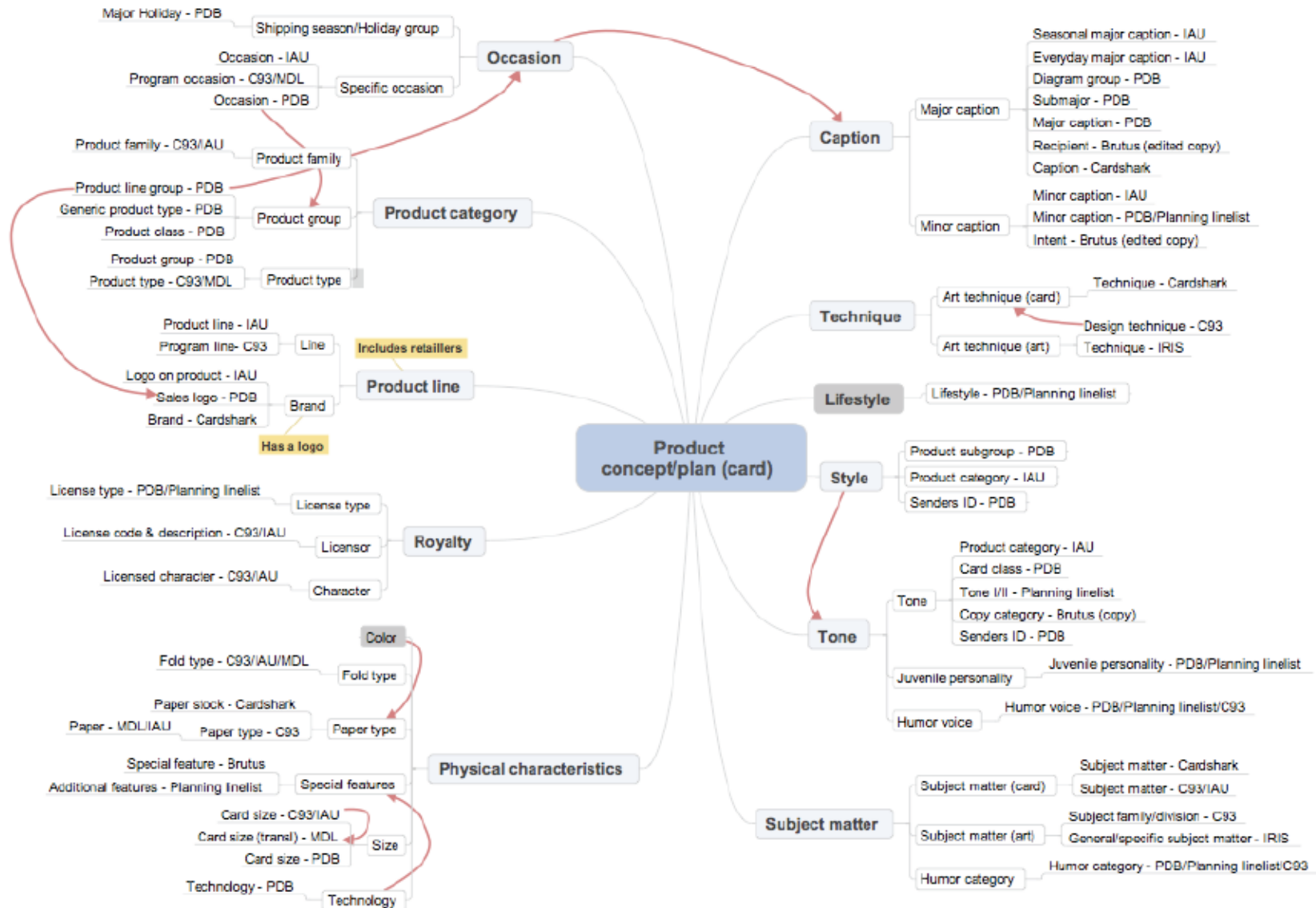
The Problem | Same Concept, Different Expressions...



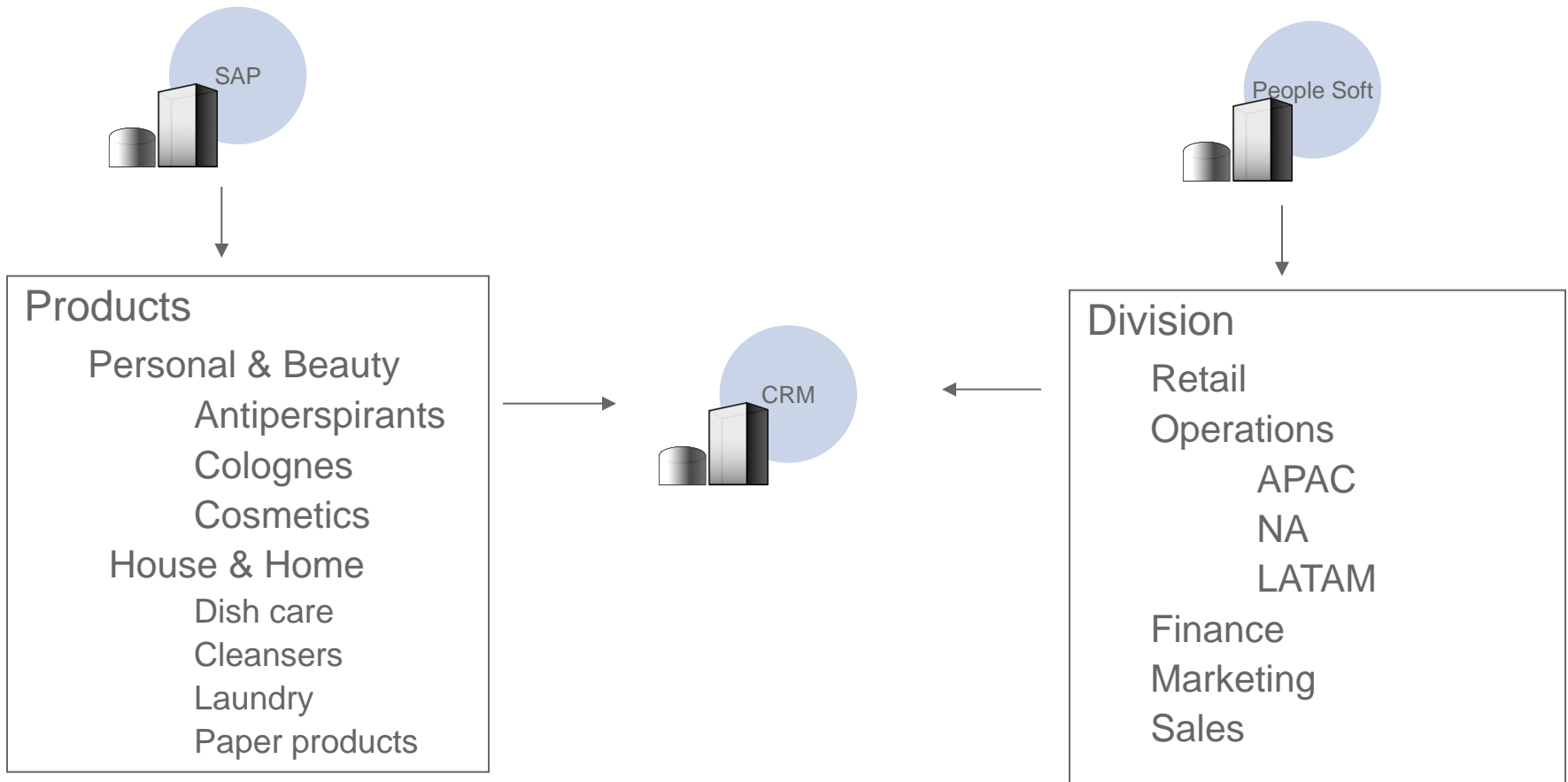
Problems:

- **Difficulty finding relevant information**
- **Federated search configuration is cumbersome**
- **Inability to view consolidated results**
- **Limited ability to control shared vocabularies**
- **Weak governance or demonstrated control**
- **Costly/cumbersome administrative overhead**

The Problem | Magnified Over Time, Systems, Processes, Complexity

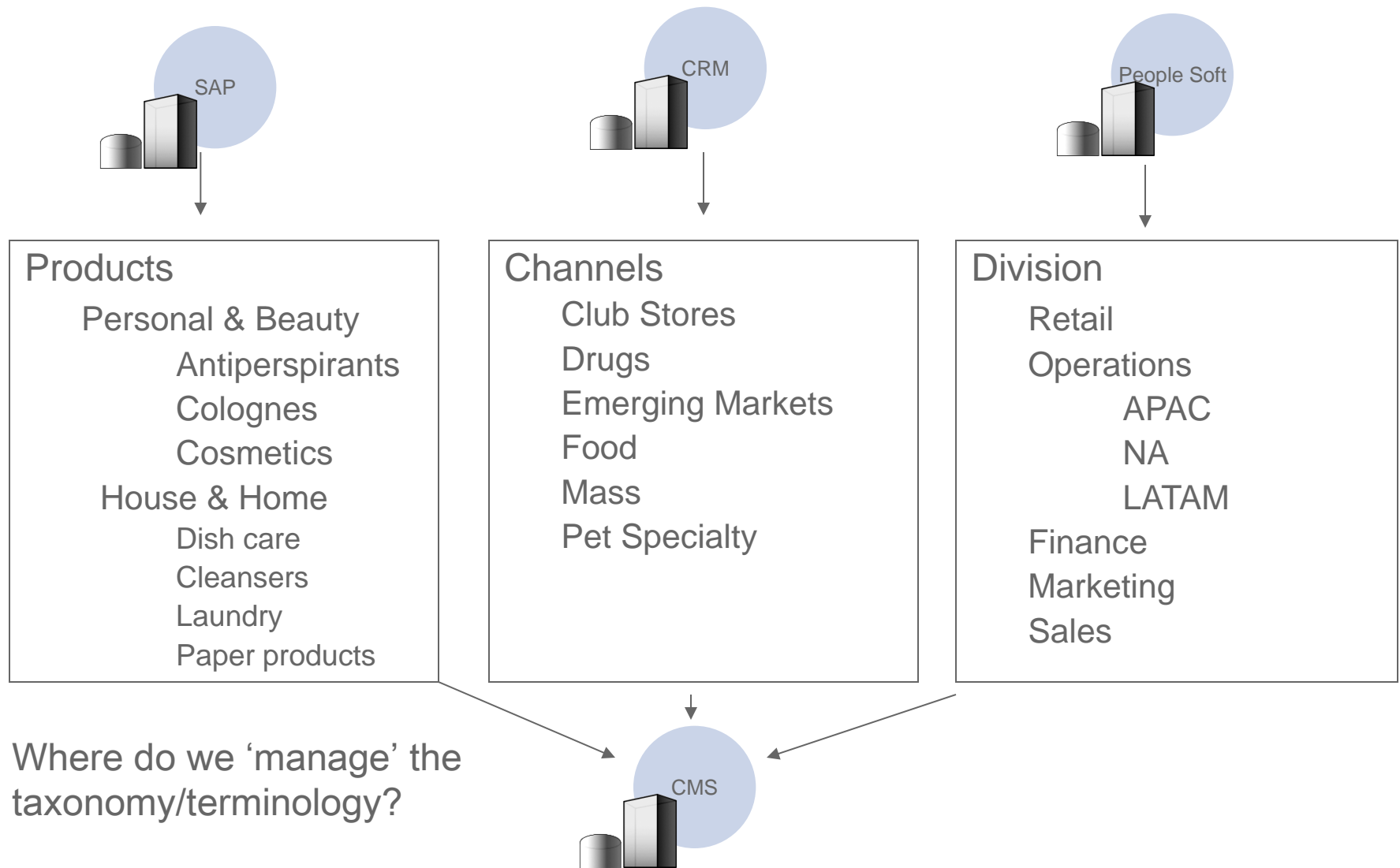


The Problem | Another View Point of the Source of “Truth”



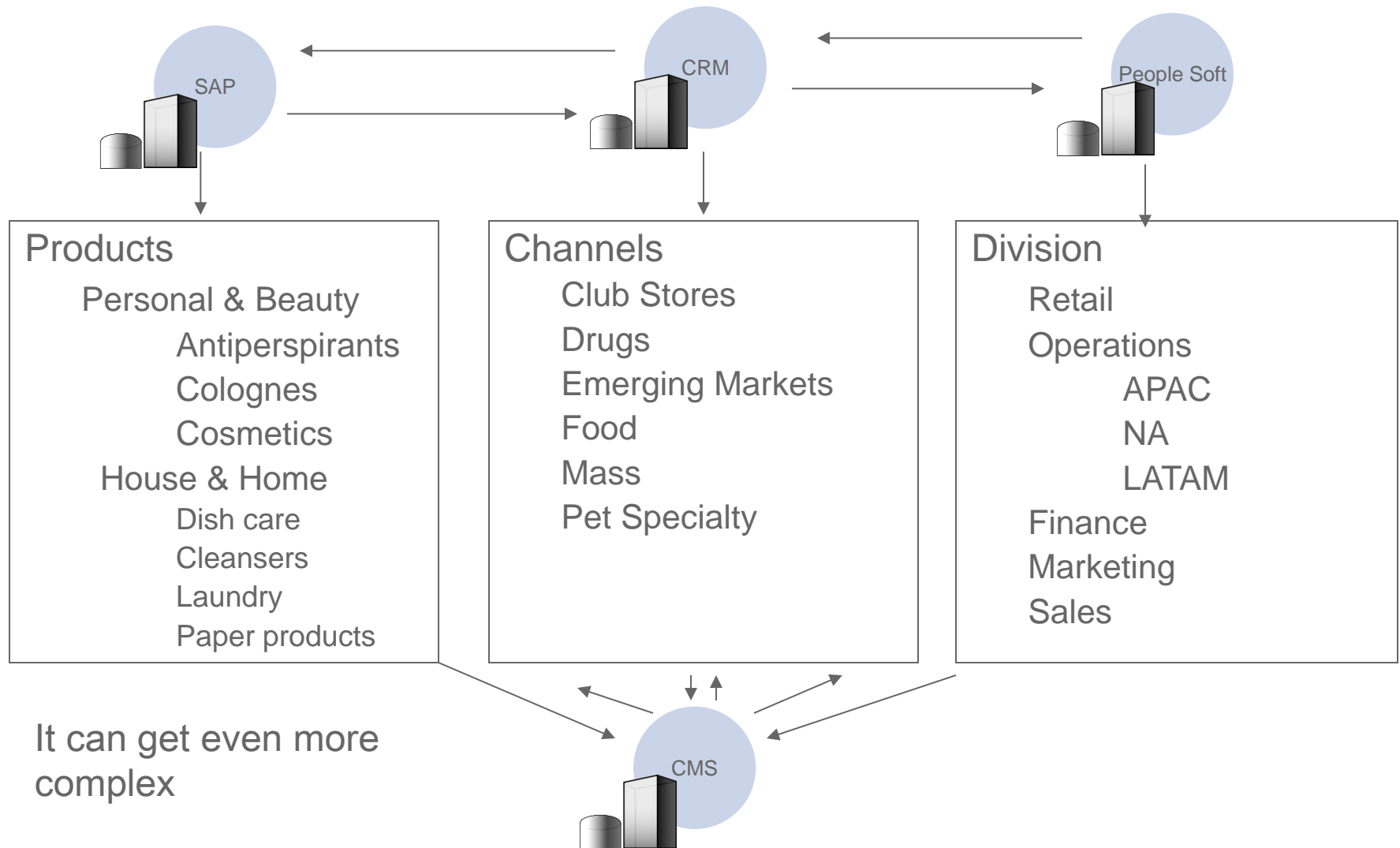
May have multiple “sources of the truth” for different nodes of taxonomy feeding systems and processes

The Problem | Another View Point of the Source of “Truth”



May have multiple “sources of the truth” for different nodes of taxonomy feeding systems and processes

The Problem | Another View Point of the Source of “Truth”

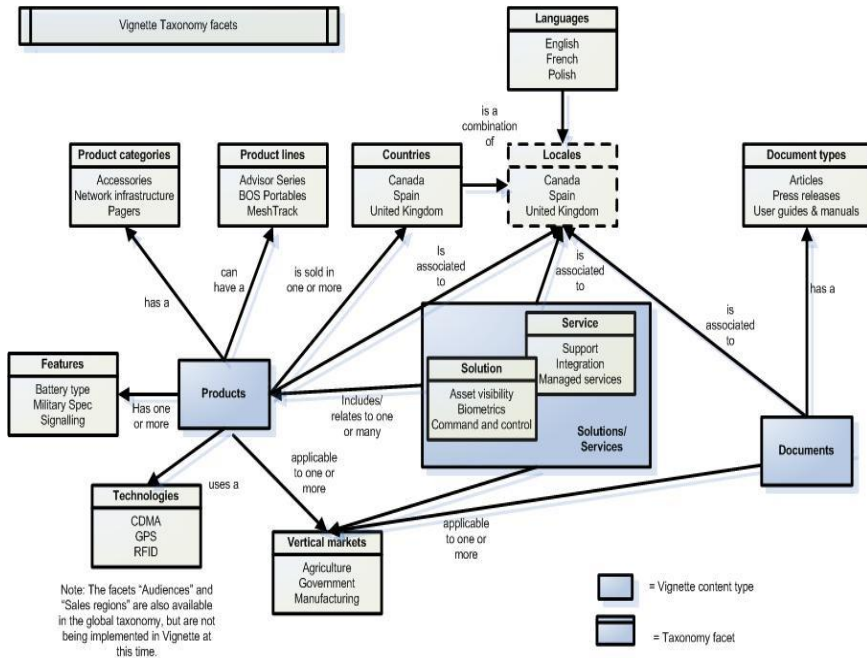


May have multiple “sources of the truth” for different nodes of taxonomy feeding systems and processes

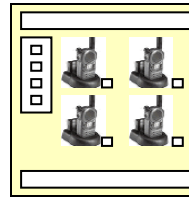
The Challenges | Classes of Tool and Integration Issues

Tool/technology class	Description	Integration Challenge	Example
Marketing Resource Management	Systems that allow asset reuse and streamline production workflow	Embedding metadata in assets as they move from system to system, consistency of terminology for component and composite assets	Integration of Digital Asset Management with Creative Workflow and editing tools
Customer relationship management	Applications that provide an integrated view of customer interactions	Ability to consolidate and roll up different activities that are fundamentally different	CRM systems consolidate information from a variety of subsystems: Email management, event management, customer support, collateral fulfillment
Document and web publishing	Moving content from one application to another, syndication of external content	Inconsistent metadata standards, inconsistent vocabularies, lack of context for user	Content migration from legacy applications to new systems or syndication of content to a channel partner's web site
Federated/ Integrated Search	Enterprise systems that search across structured and unstructured content and data	Inconsistent terminology from one content system to another Inconsistent terminology between structured and unstructured applications	Content management system term = SOW, Document management system = Statement of Work, Customer relationship management system = Work Order,
Transaction processes	Registration or commerce types of applications	Inconsistent description of customer and processes from one system to another	Registration in a web application needs to create a new account profile in another application
Data Warehousing	Extraction/Translation and Load processes	Format and conversions required to normalize data across systems	Business intelligence applications to analyze sales transactions over time

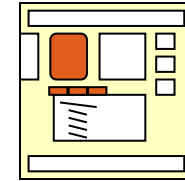
The Solution | A Consistent Framework Across the Enterprise



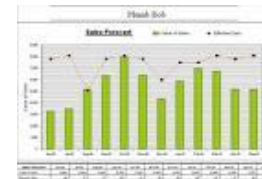
**Case Example:
 Motorola's Global
 Taxonomy Framework
 Served Multiple Processes**



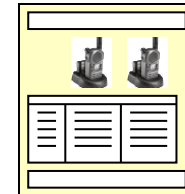
Browsing & filtering



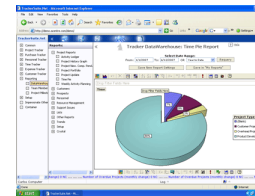
Related documents



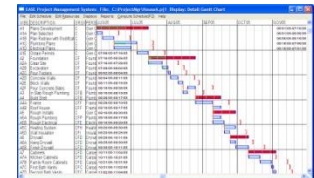
Financial reporting



Compare product



Business intelligence

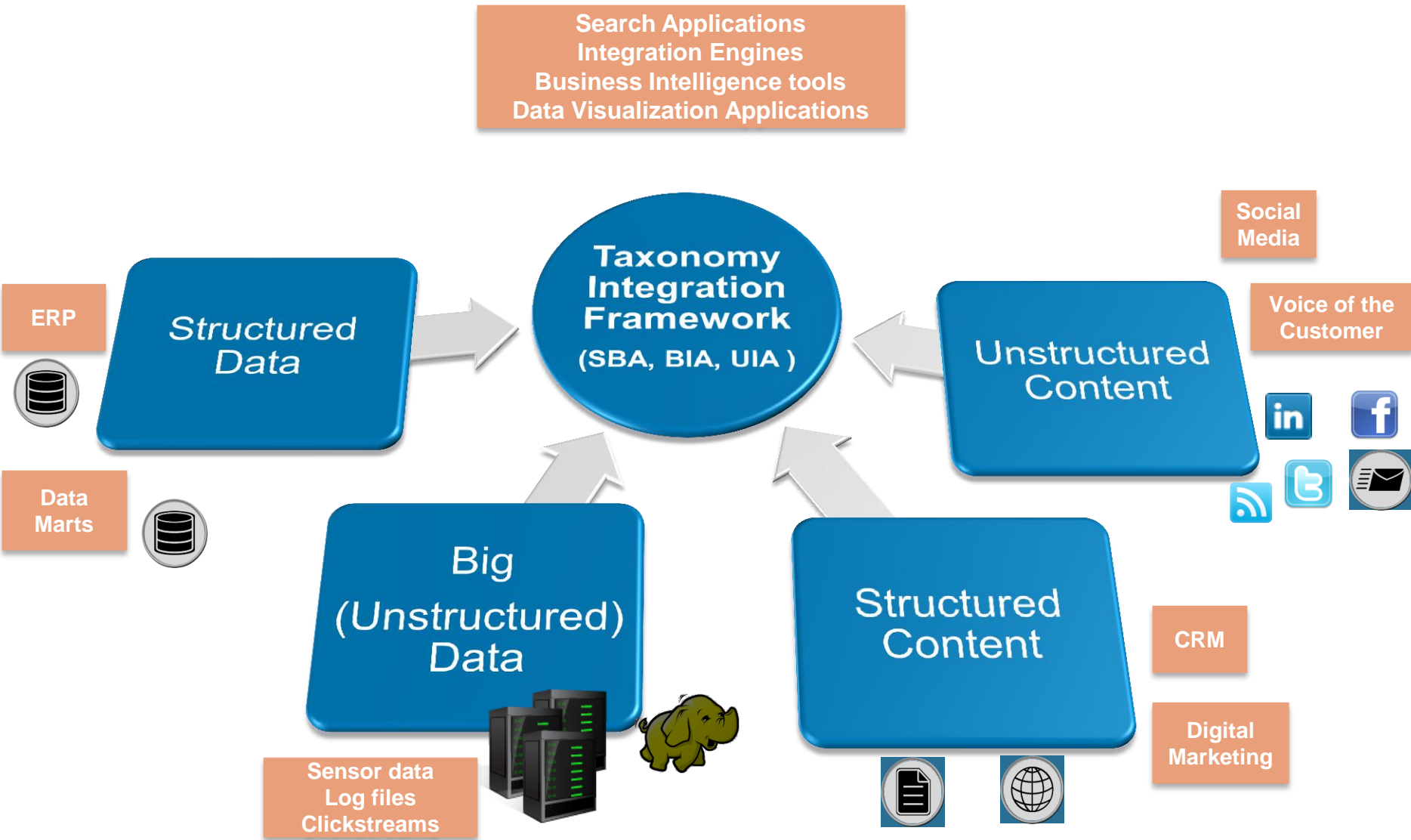


Program Management

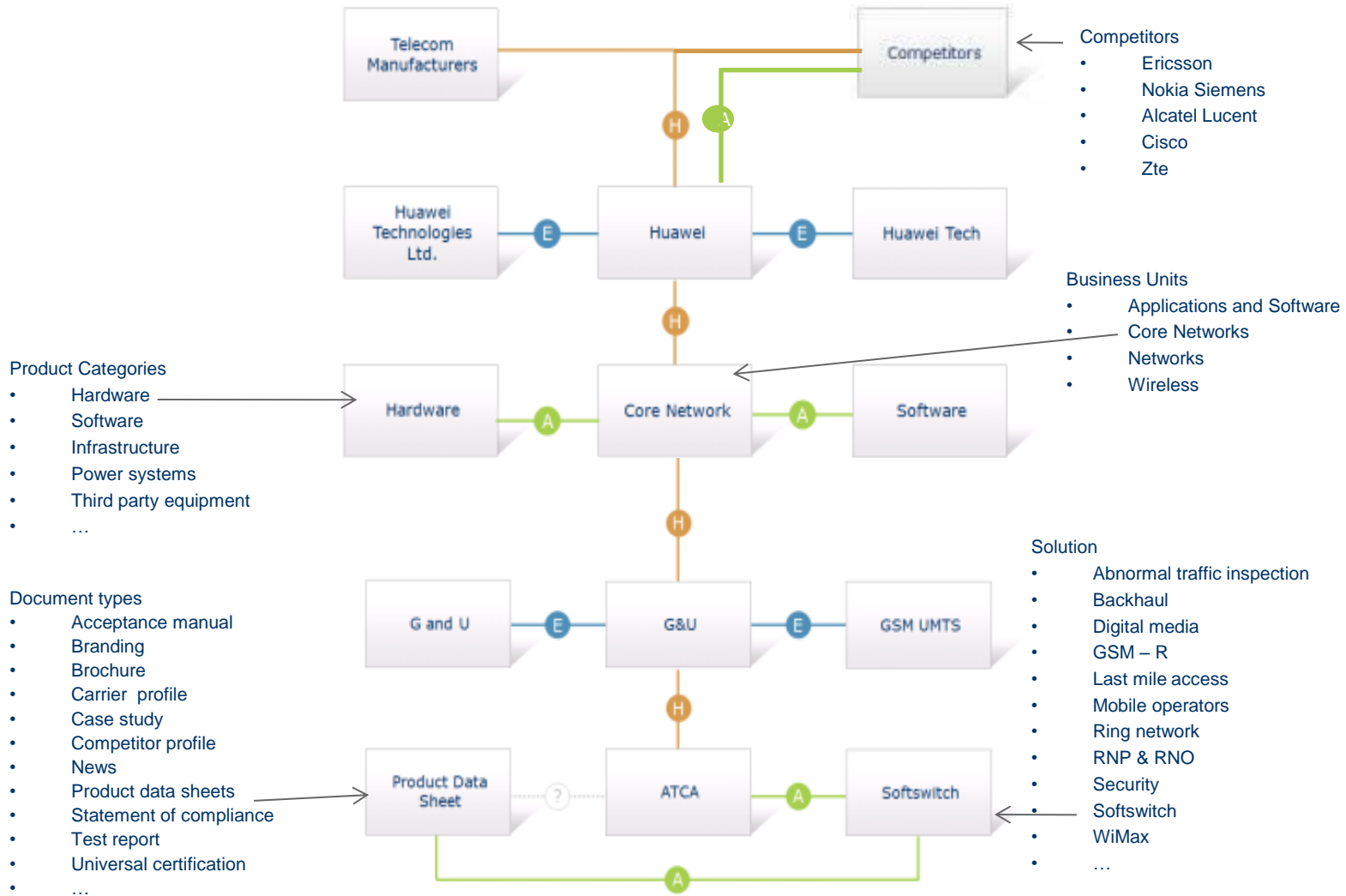
Active	Mature	Retired	Obsolete
Newest releases Newest releases are the most recent versions of a product line.	Previous releases Previous releases are the most recent versions of a product line that are no longer the newest releases.	Discontinued Discontinued releases are the most recent versions of a product line that are no longer supported.	Obsolete Obsolete releases are the most recent versions of a product line that are no longer supported and are no longer available for sale.
Full maintenance Full maintenance releases are the most recent versions of a product line that are supported and are available for sale.	Limited maintenance Limited maintenance releases are the most recent versions of a product line that are supported and are available for sale, but are no longer the newest releases.	No maintenance No maintenance releases are the most recent versions of a product line that are no longer supported and are no longer available for sale.	No maintenance No maintenance releases are the most recent versions of a product line that are no longer supported and are no longer available for sale.
Mainstream support Mainstream support releases are the most recent versions of a product line that are supported and are available for sale.	Extended support Extended support releases are the most recent versions of a product line that are supported and are available for sale, but are no longer the newest releases.	Extended support Extended support releases are the most recent versions of a product line that are supported and are available for sale, but are no longer the newest releases.	Limited support Limited support releases are the most recent versions of a product line that are supported and are available for sale, but are no longer the newest releases.
Mainstream hardware Mainstream hardware releases are the most recent versions of a product line that are supported and are available for sale.	Mainstream hardware Mainstream hardware releases are the most recent versions of a product line that are supported and are available for sale.	Limited hardware Limited hardware releases are the most recent versions of a product line that are supported and are available for sale, but are no longer the newest releases.	No hardware No hardware releases are the most recent versions of a product line that are no longer supported and are no longer available for sale.
Valid until Valid until releases are the most recent versions of a product line that are supported and are available for sale.	Valid until Valid until releases are the most recent versions of a product line that are supported and are available for sale.	Valid until Valid until releases are the most recent versions of a product line that are supported and are available for sale.	Valid until Valid until releases are the most recent versions of a product line that are supported and are available for sale.

Product Lifecycle Management

Big Data and Enterprise IA | Integration Framework



Conceptual Representations | Telecommunications Product Ontology



Domain models focus entirely on **business concepts and their interrelationships**. (This makes them fundamentally different from metadata models, which are focused on descriptive metadata.)

There are two reasons to include domain modeling in a taxonomy project:

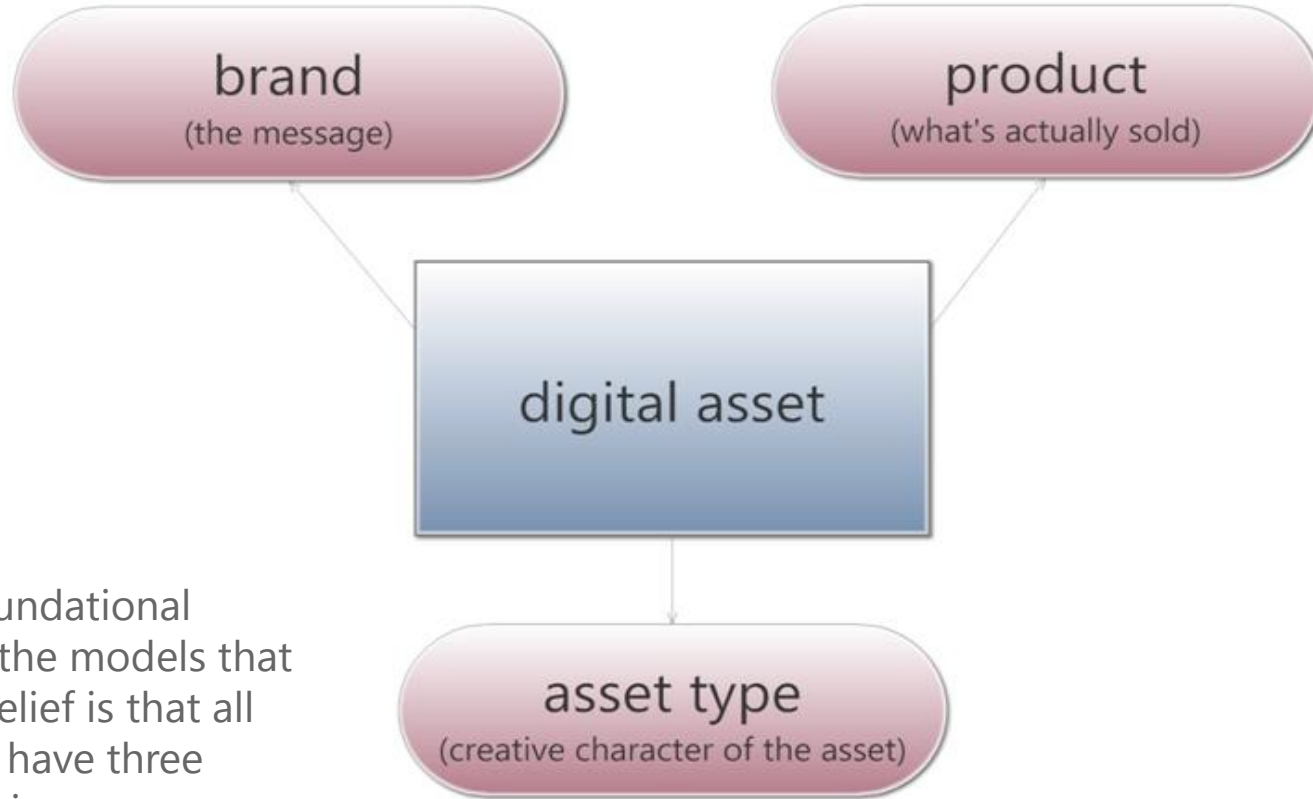
- To gain a broad understanding of how significant business entities interrelate.
- To discover and validate facets of the taxonomy.

The slides that follow illustrate the large concepts that surround digital assets, and how those concepts are connected within the company.

Next steps:

1. Validate the models for sense and completeness
2. Convert each “oval” into a taxonomy facet and begin to populate with values
3. Identify owners and stakeholders for each oval
4. Build information flow diagrams to convert modeled relationships into workflow.

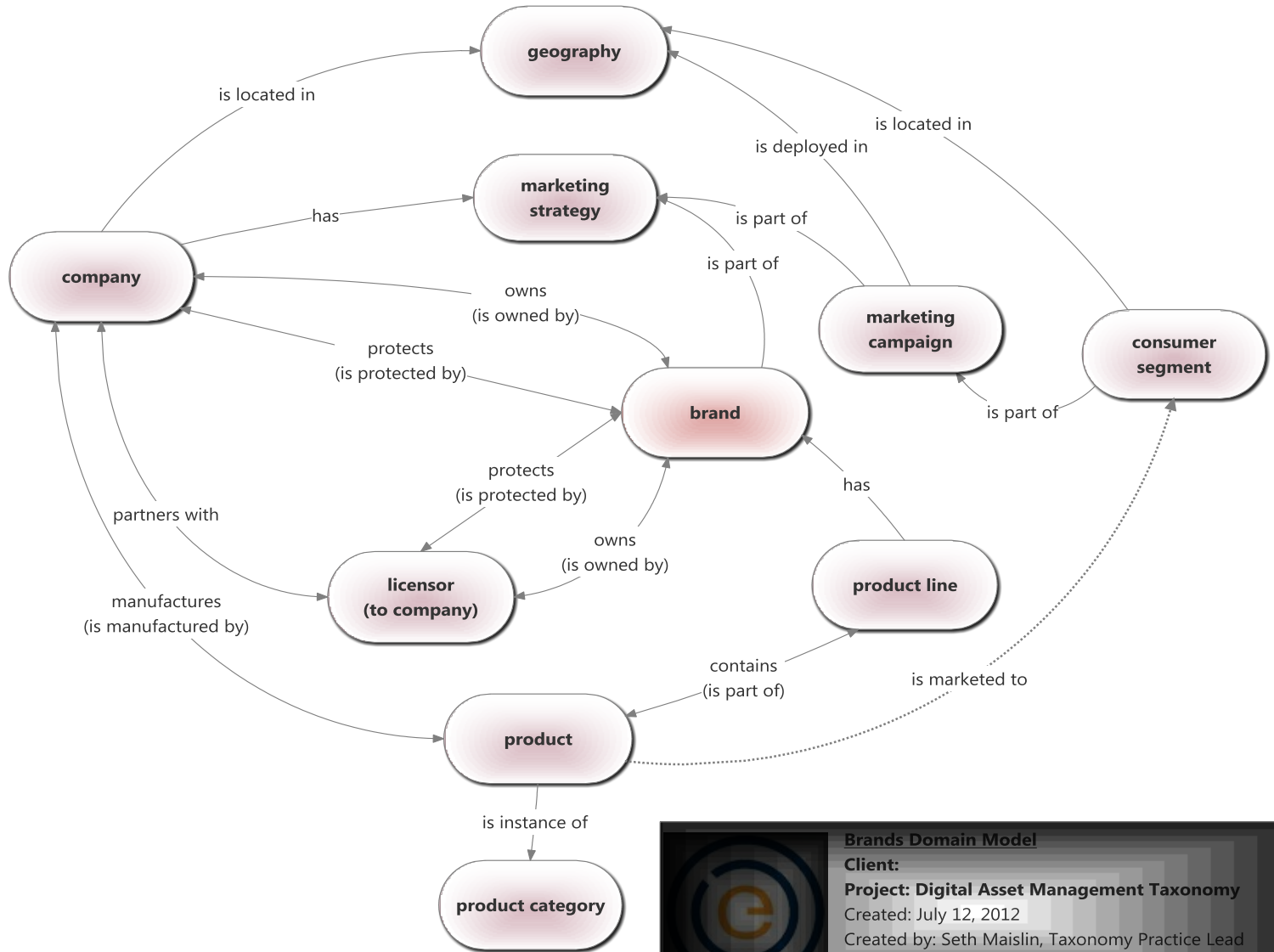
Approaches | Digital Asset Management Domain Model

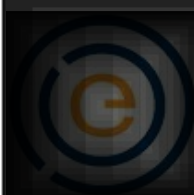


This is the foundational structure for the models that follow. Our belief is that all digital assets have three major dimensions: message, creative character, and retail item(s). We explore these three dimensions on the next slides.



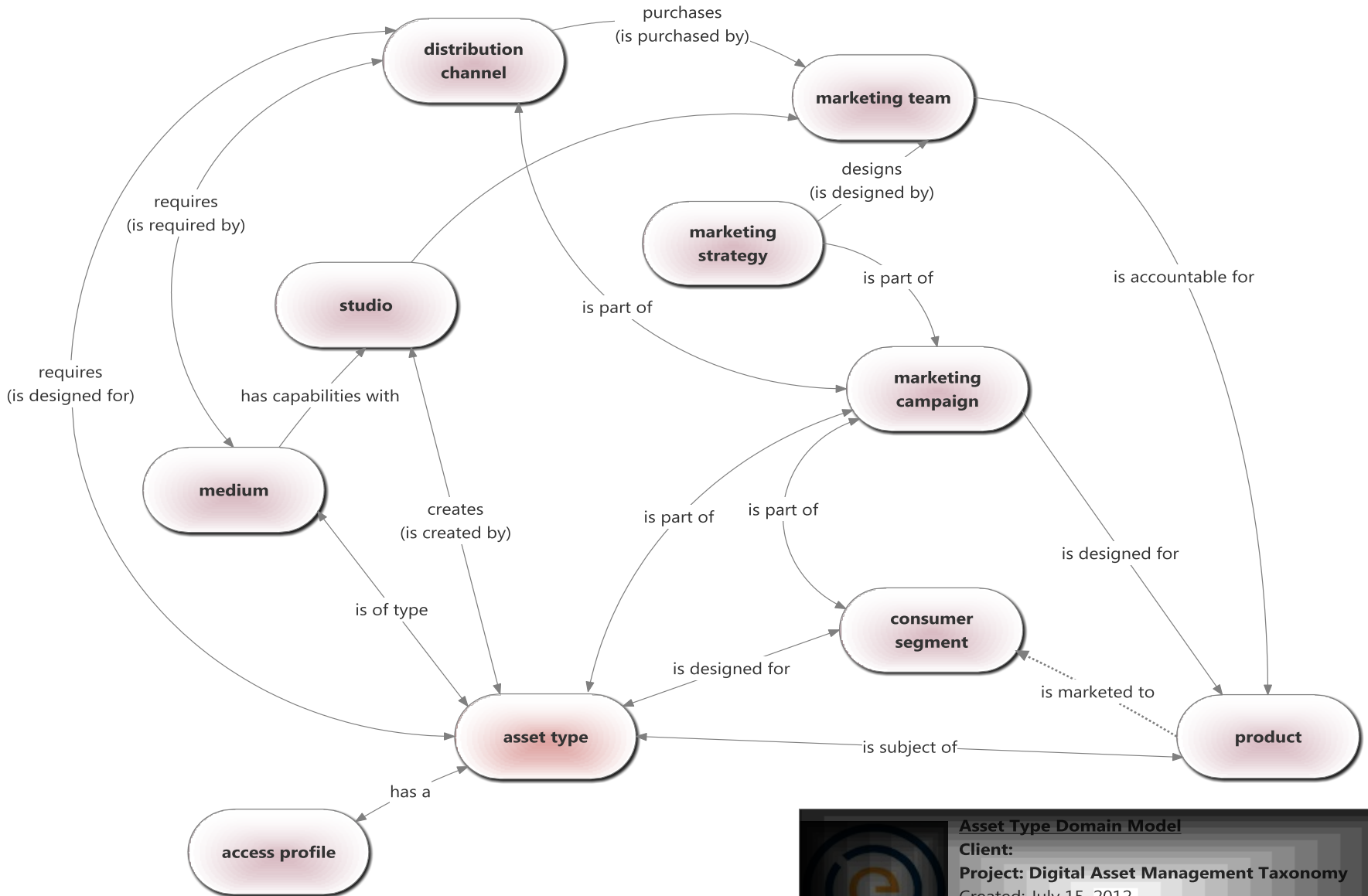
Approaches | Digital Asset Management Domain Model

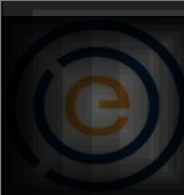




Brands Domain Model
Client:
Project: Digital Asset Management Taxonomy
 Created: July 12, 2012
 Created by: Seth Maislin, Taxonomy Practice Lead
 Last modified: July 19, 2012
 Last modified by: Seth Maislin

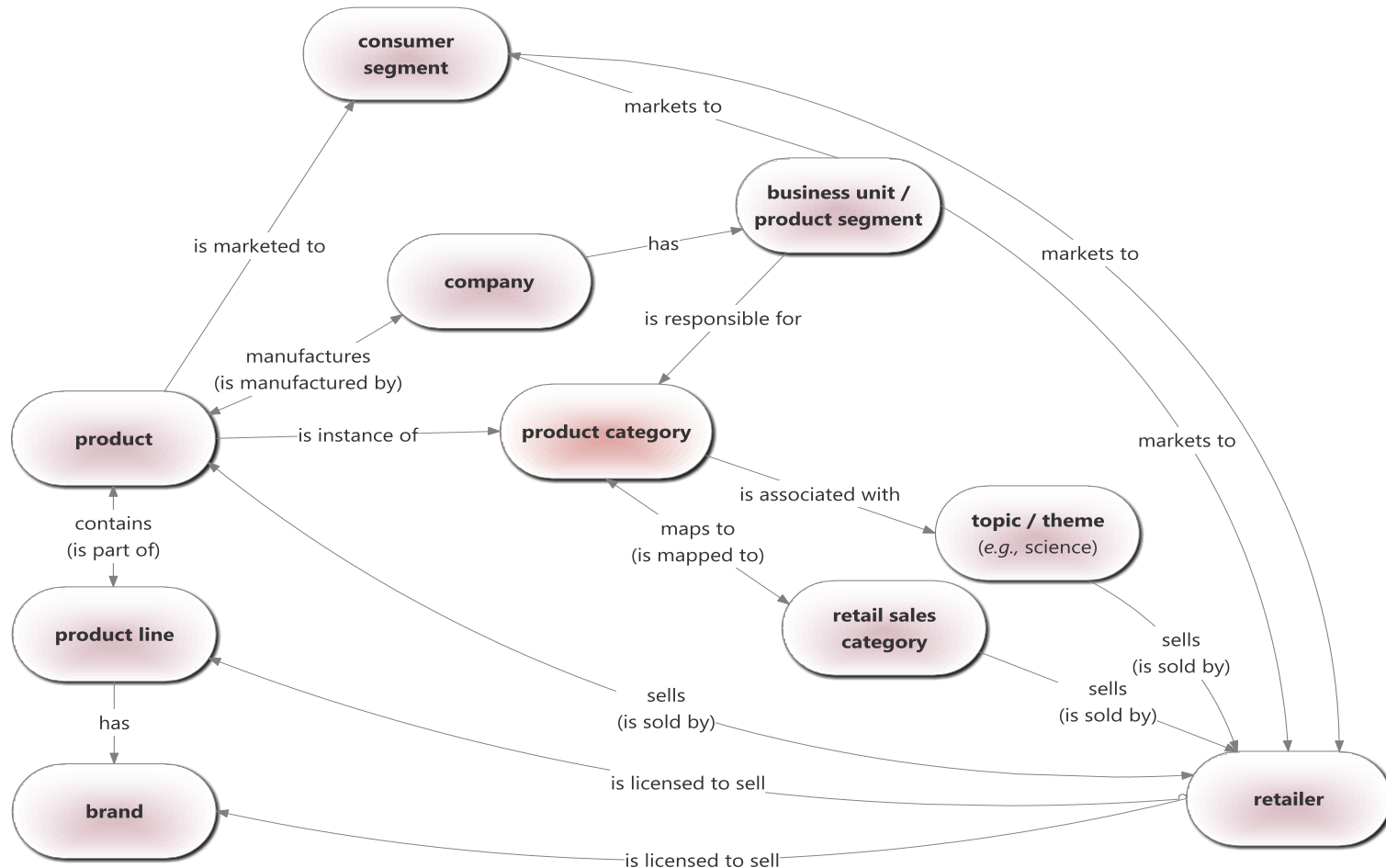
Approaches | Digital Asset Management Domain Model





Asset Type Domain Model
Client:
Project: Digital Asset Management Taxonomy
 Created: July 15, 2012
 Created by: Seth Maislin, Taxonomy Practice Lead
 Last modified: July 18, 2012
 Last modified by: Seth Maislin

Approaches | Digital Asset Management Domain Model





Product Category Domain Model

Client:

Project: Digital Asset Management Taxonomy

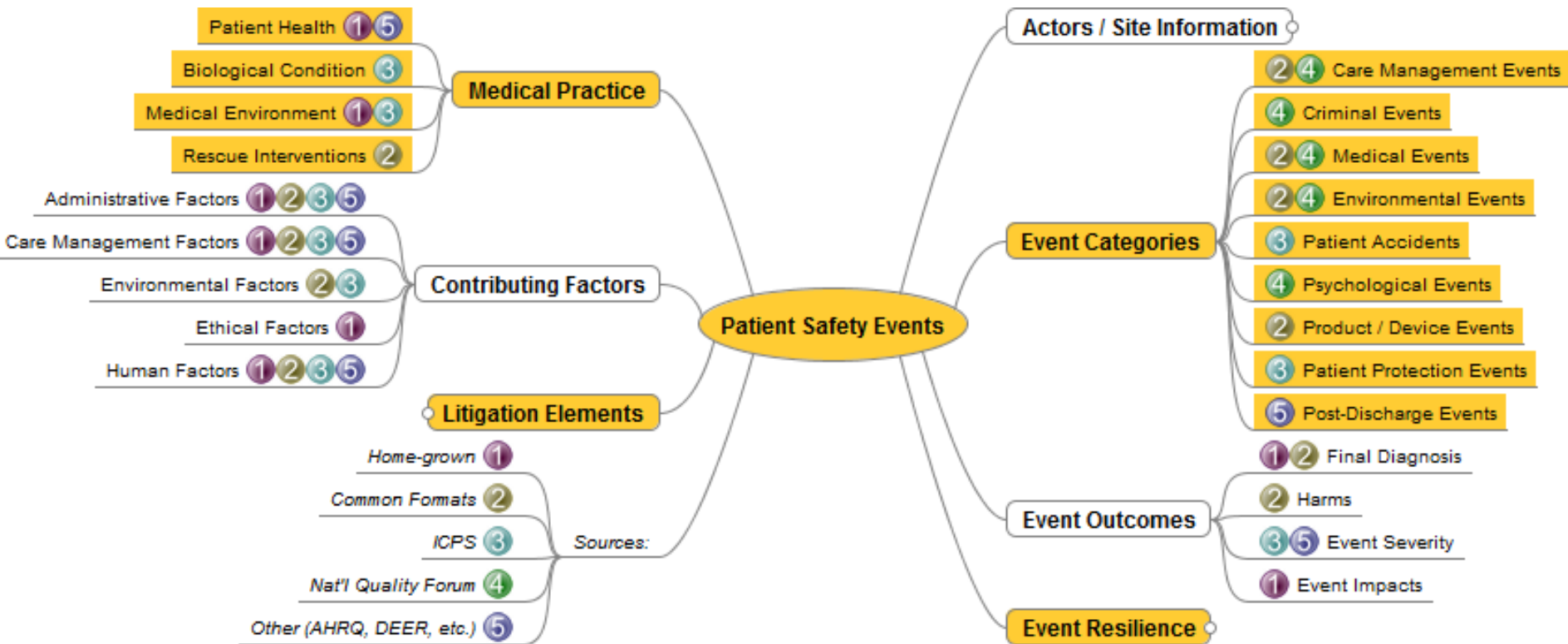
Created: July 9, 2012

Created by: Seth Maislin, Taxonomy Practice Lead

Last modified: July 23, 2012

Last modified by: Seth Maislin

Approaches | Patient Safety Coding Taxonomies



Approaches | Ecommerce Taxonomy Assessment

- **Objective:** To identify degree of non-conformance with taxonomy best practices and determine appropriate optimization recommendations for the product taxonomy
- Leveraged established E&A review process
 - Structure & Balance
 - Labels & Nomenclature
- Ratings system for evaluation
- Comprised of approximately 31 verification points

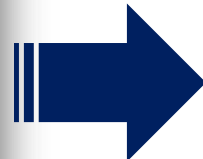
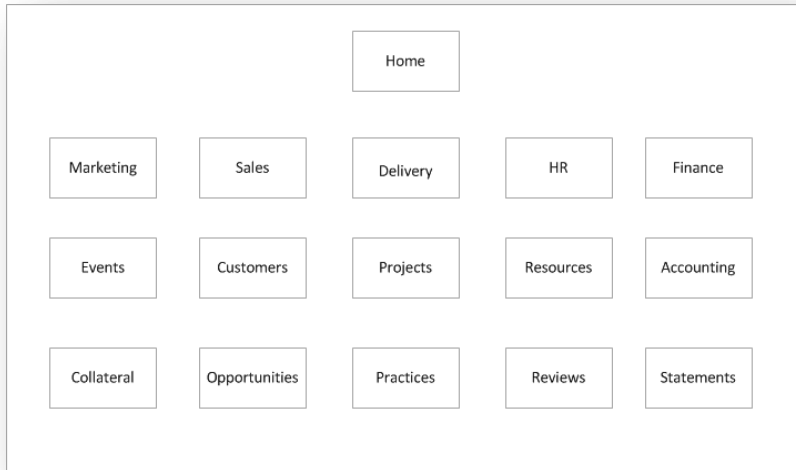
Ref	Best Practice	R	Comments
	Rating: rate each best practice on a scale of 0-2.	0	Does not meet the best practice criteria
		1	Meets somewhat the best practice criteria
		2	Meets completely the best practice criteria
Structure & Balance			
1	Does the taxonomy use a clear grouping principle (e.g. intrinsic product type)?	0	The Sub-groups are causing ambiguities at the IAC level. Examples: Sub group Dairy contains IAC Frozen and Refrigerated Bread, Rolls, and Dough when there are a Sub-groups Frozen and Refrigerated. IAC Snack Cakes is in Sub-group Dry rather than in Snack.
2	Are the Sub-group and IAC categories sufficiently distinct from each other, giving the user a clear indication where to look for a specific content item?	0	Some Sub-group names are specific and clear (i.e. Beverage), others are not (i.e. Perishable and Refrigerated). IAC Pasta and Pizza Sauce is partially repetitive of IAC Sauces.
3	Do IACs fit logically into Sub-groups and are they homogeneous?	0	See item 1 above, additional examples are IAC Granola and Breakfast Bars is found in Sub-group Snack whereas IAC Cold Cereal is found in Dry. Within the Snack Sub-group there are two IACs that are not mutually exclusive, Salty Snacks and Snack Nuts. A Refrigerated Sub-group exists yet: IAC Frozen and Refrigerated Potatoes is found in Frozen Sub-group. IAC Dry and Refrigerated Pasta is found in Dry.
Summary		16/22	73% conformance rating
Total		26/54	48% conformance rating
		.48	Between 0 and 1 - Taxonomy does not meet best practices and needs major work. Between 1.1 and 1.5 - Taxonomy needs rework, has structural and labeling issues that require attention. Between 1.6 and 2.0 - Taxonomy is healthy, needs slight adjustment/refresh only.

Approaches | Ecommerce Taxonomy Assessment



Category	Structure & Balance		Labels & Nomenclature		Total	Group Average
	Point Summary (40 possible)	% Conformance	Point Summary (22 possible)	% Conformance	Overall % Conformance	Assessment Point
1. Apparel 1	25	63%	14	64%	63%	1.3
2. Apparel 2	22	55%	11	50%	53%	1.1
3. Baby	27	68%	15	68%	68%	1.3
4. Electronics	8	20%	14	64%	36%	0.7
5. Furniture	28	70%	16	72%	71%	1.4
6. Garage & Hardware	29	73%	10	45%	63%	1.3
7. Gifts	36	90%	15	68%	82%	1.6
8. Grocery	16	40%	11	50%	44%	0.9
9. Health & Beauty	17	42%	16	73%	53%	1.1
10. Home	19	48%	18	81%	60%	1.2
11. Jewelry	28	70%	17	77%	73%	1.5
12. Kitchen	15	38%	15	68%	48%	1.0
13. Laundry, Cleaning & Closet	18	45%	14	64%	52%	1.0
14. Patio & Outdoor Decor	19	48%	17	77%	58%	1.2
15. Sporting Goods	16	40%	5	23%	34%	0.7
16. Stationery & Office Supplies	33	83%	14	64%	76%	1.5
17. Toys	8	20%	12	55%	33%	0.7
18.						
Overall Ratings	364	54%	234	63%	57%	1.2

Taxonomy starts as a collection of terms...



...that becomes translated into design elements through a structured process.

Site Collections and Sites

Site collection – Separate security, Global navigation
Think of a Division, Business Unit

Sites – The container for pages, libraries and lists of things
Think of a Department or Functional Area

Libraries and Content Types

Library – The container for documents organized according to a process or concept
Think of a collection of information for a process. For example, a repository of Case Studies that marketing produces

Content Type – The container for information. May be a word document, a page, an image, other rich media like an audio or video file.
Think of the individual piece of

Columns

A **Content Type** is defined by **Columns** – The metadata that describes a piece of content by “is-ness” and “about-ness”.
Ask “What is this thing?” “What is it about?”

Column – The metadata that describes a piece of content.
Think of a Column in a spreadsheet
Terminology Check: Column = Metadata = Field = Facet

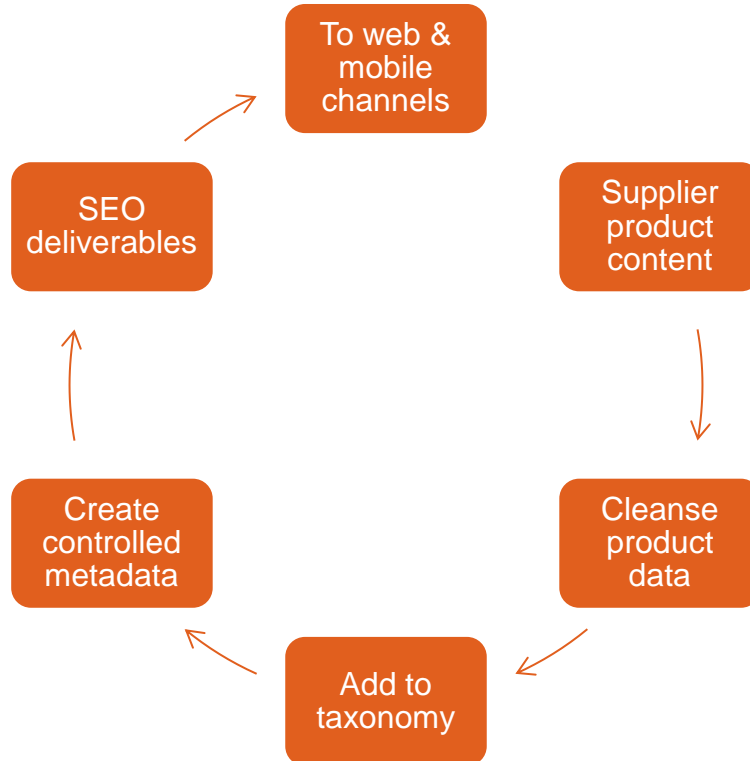
Library Views Leverage Content Models

Case Study Content Type

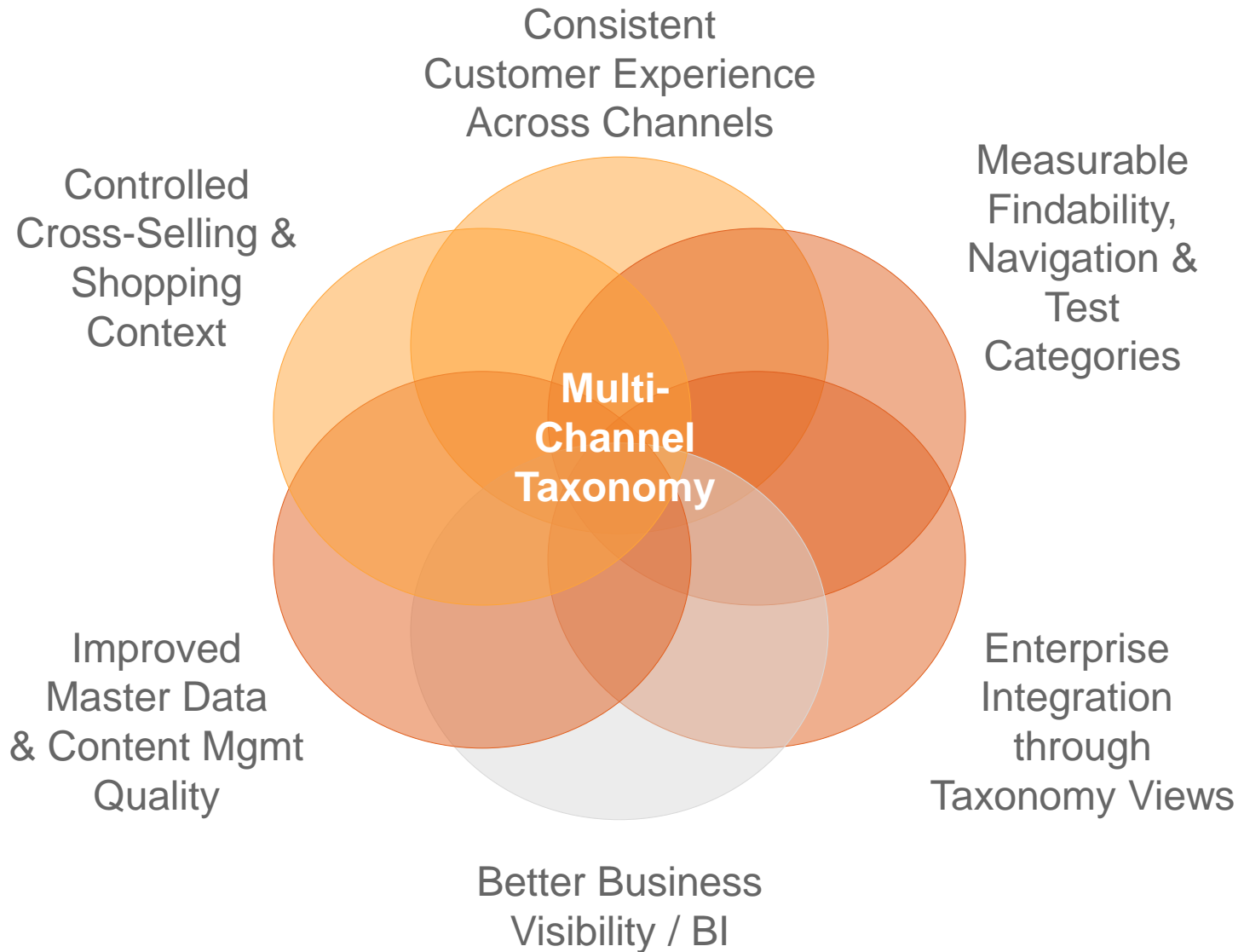
Type	Title	Author	Client	Industry	Date
1	Designing User Experience in SharePoint 2010	Jeff Carr	PCL	Construction	3/23/2012
2	Improving Medical Information Online	Jeanine Bartlett	BMS	Pharmaceuticals	6/22/2012
3	Creating a Global Content Management Strategy	Seth Earley	Motorola	Telecommunications	5/16/2010
4	Optimizing Search Facets and Navigational Taxonomy	Seth Earley	JC Penney	Retail	5/18/2011

Case Studies Library View

Taking your product information supply chain online:



All the shopper interacts with is information mediated by their preferences, expectations and their shopping list. Behind the scenes is a whole set of processes that must be harmonized to prepare information for the competitive online shopping experience.

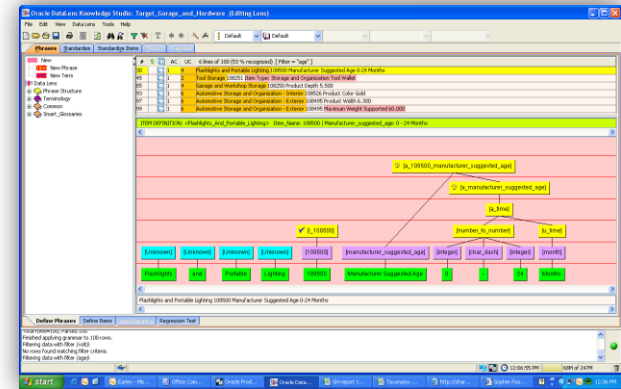


Customers investigate product choices based on a variety of product attributes, such as:

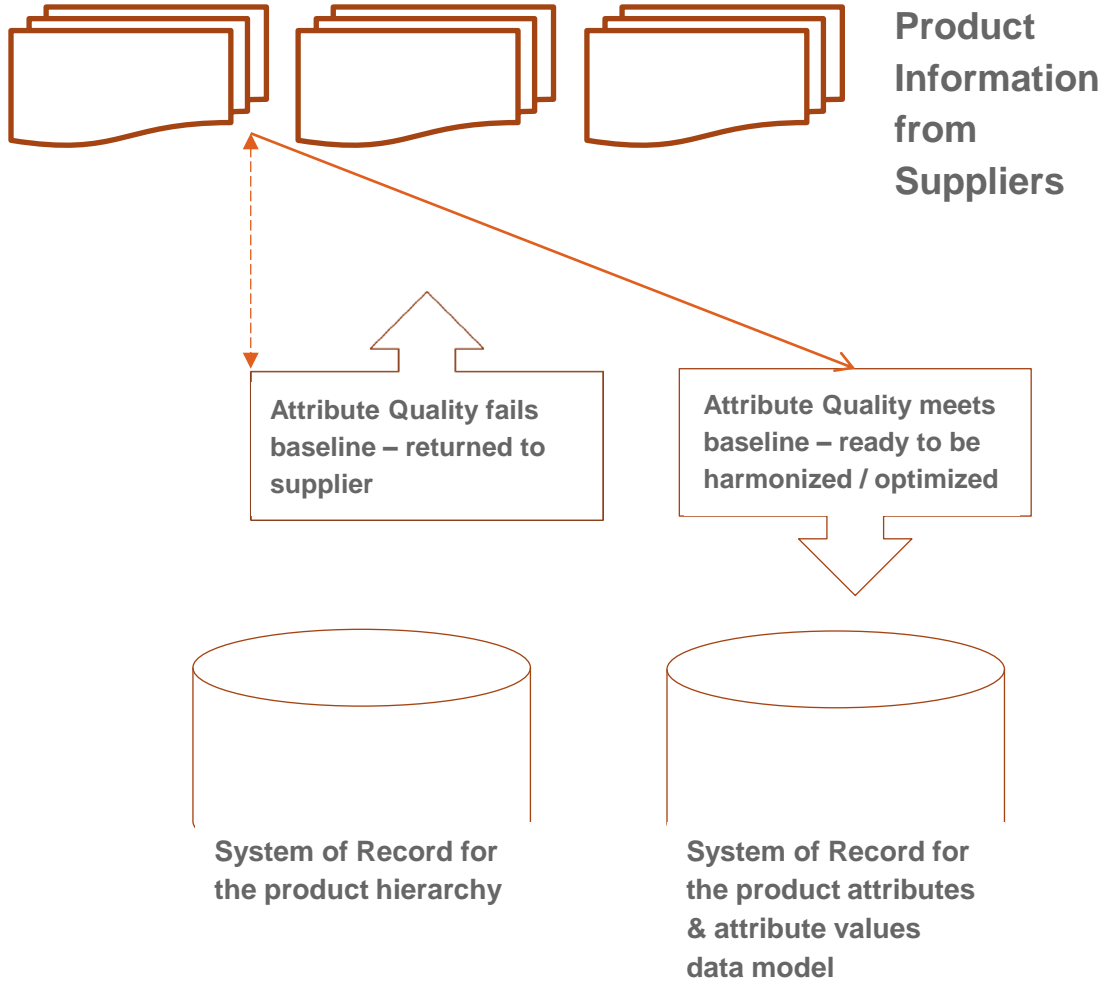
- Price
- Sustainability claims
- Country of manufacture
- Energy efficiency

- Complex content from suppliers must be repurposed for websites, catalogues and merchandising
 - Missing facts and figures, misspellings, unusual or conflicting abbreviations lead to shopper confusion or extensive data rework
 - Normalizing and improving content for the ultimate customer in a timely fashion is a major challenge
- Products and normalized attributes need to be organized in relation to each other and to product taxonomies to enable cross-sell and up-sell

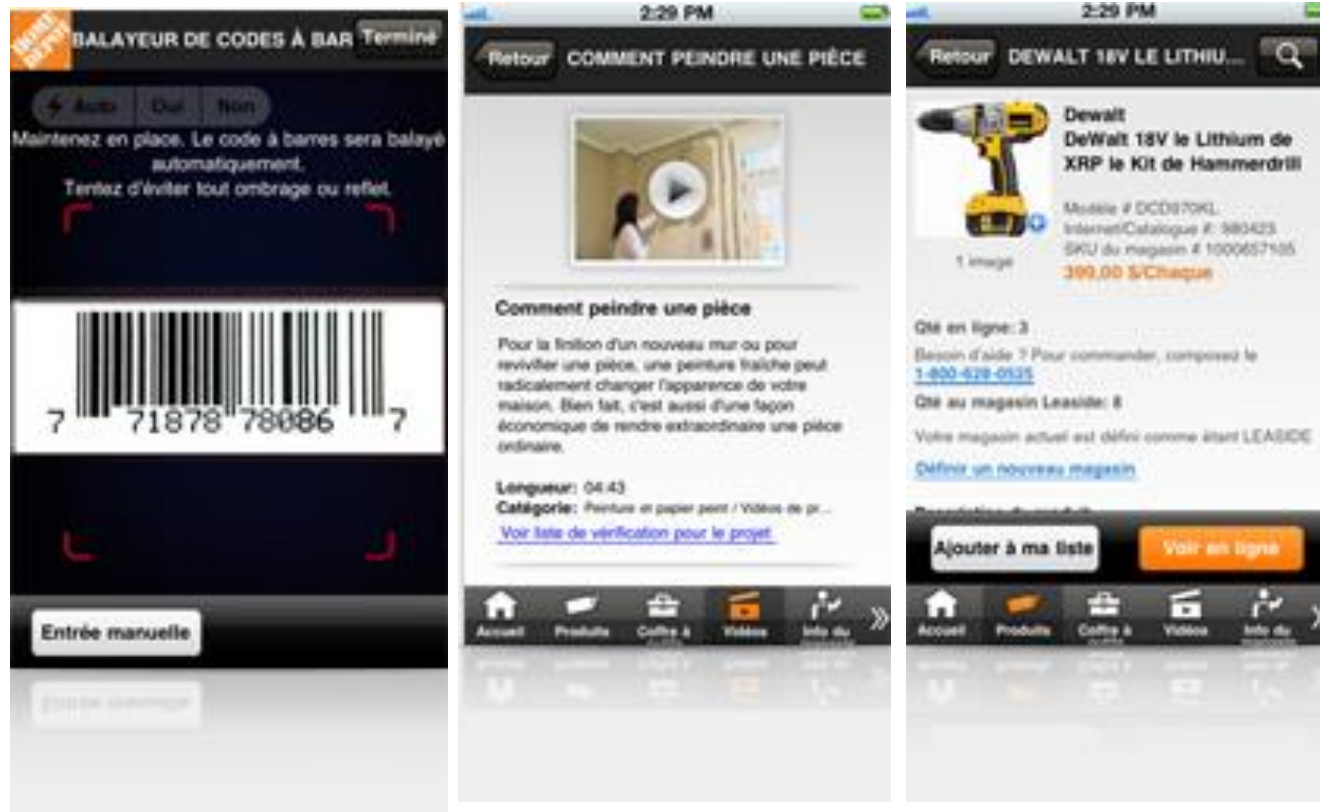
Oracle PDQ DataLensBuilding



Benefits | Improved Product Data Quality

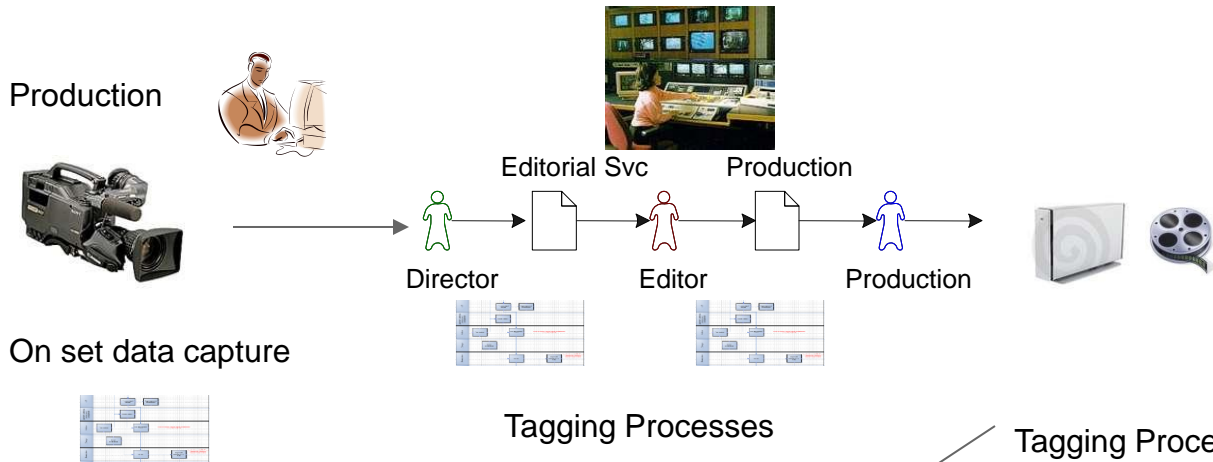


Benefits | Improved Cross Channel Experience



Home Depot's Barcode Scanner, Product Catalog Browse & Search, Store Inventory Availability, Store Locator, Interactive Toolbox, Project & Product Videos, eFlyer**, My List and Recent Search List – *en Français*

Benefits | Asset, Exploitation, Monetization and Reuse



Tagging content should allow for multiple products, distribution channels and purposes

Tagging Processes

Tagging Processes

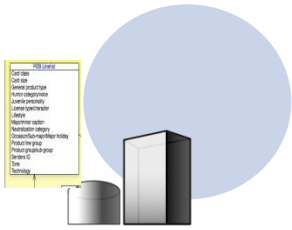
New products and channels (revenue driver)

Content retrieval, assembly distribution (efficiency driver)

A grid of icons representing various distribution channels and products:

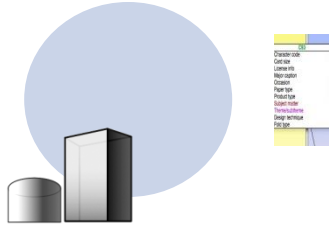
- iPod
- Mobile
- DVD
- Retail (Walmart store)
- Cable/Broadcast
- iTunes
- Theatrical

Benefits | Better Integrated, Agile, Lower Cost Digital Ecosystems



Digital Asset Management

Structure and terminology to support non text asset location and reuse



E commerce suite

Reconcile vendor product metadata with structure and format for catalog, merchandising, order management

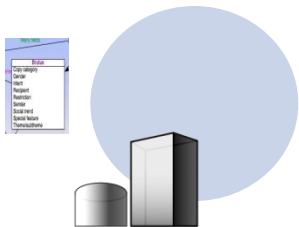


Guided navigation

Facets and attributes based on taxonomy resolve with search user experience best practices

Product Name	Brand	Category	Sub-category
Product 1	Brand A	Category X	Sub-category Y
Product 2	Brand B	Category Z	Sub-category W
Product 3	Brand C	Category V	Sub-category U
Product 4	Brand D	Category T	Sub-category S
Product 5	Brand E	Category R	Sub-category Q
Product 6	Brand F	Category P	Sub-category O
Product 7	Brand G	Category N	Sub-category M
Product 8	Brand H	Category L	Sub-category K
Product 9	Brand I	Category J	Sub-category I
Product 10	Brand K	Category H	Sub-category G

Product taxonomy

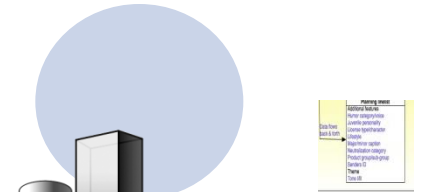


Content management

Content and document types, topics/subjects, audiences, etc to support unstructured information



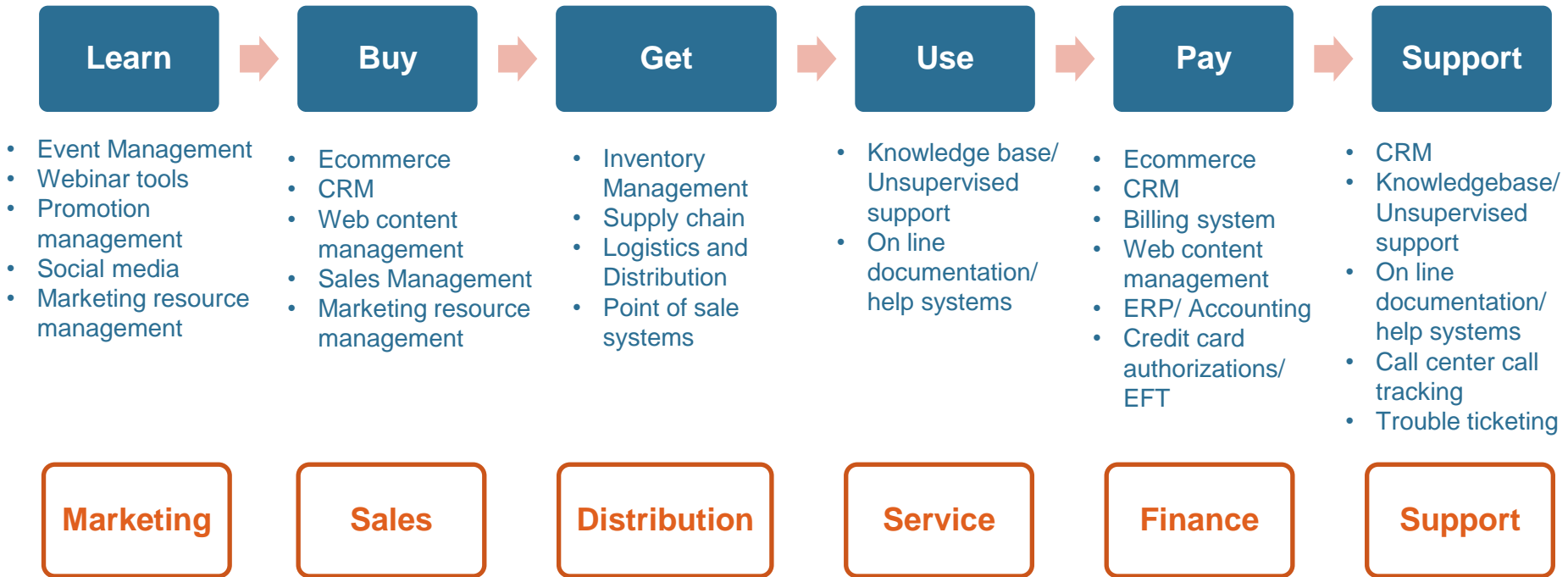
www.Bestbuy.com



Cross sell/up sell

Semantic relationships for related products, controlled terminology for merchandisers to support specific promotions

Customer Experience



Enterprise Processes: Departments/Functional Areas

Customer Analytics Programs Require Consistent Enterprise Information Architecture

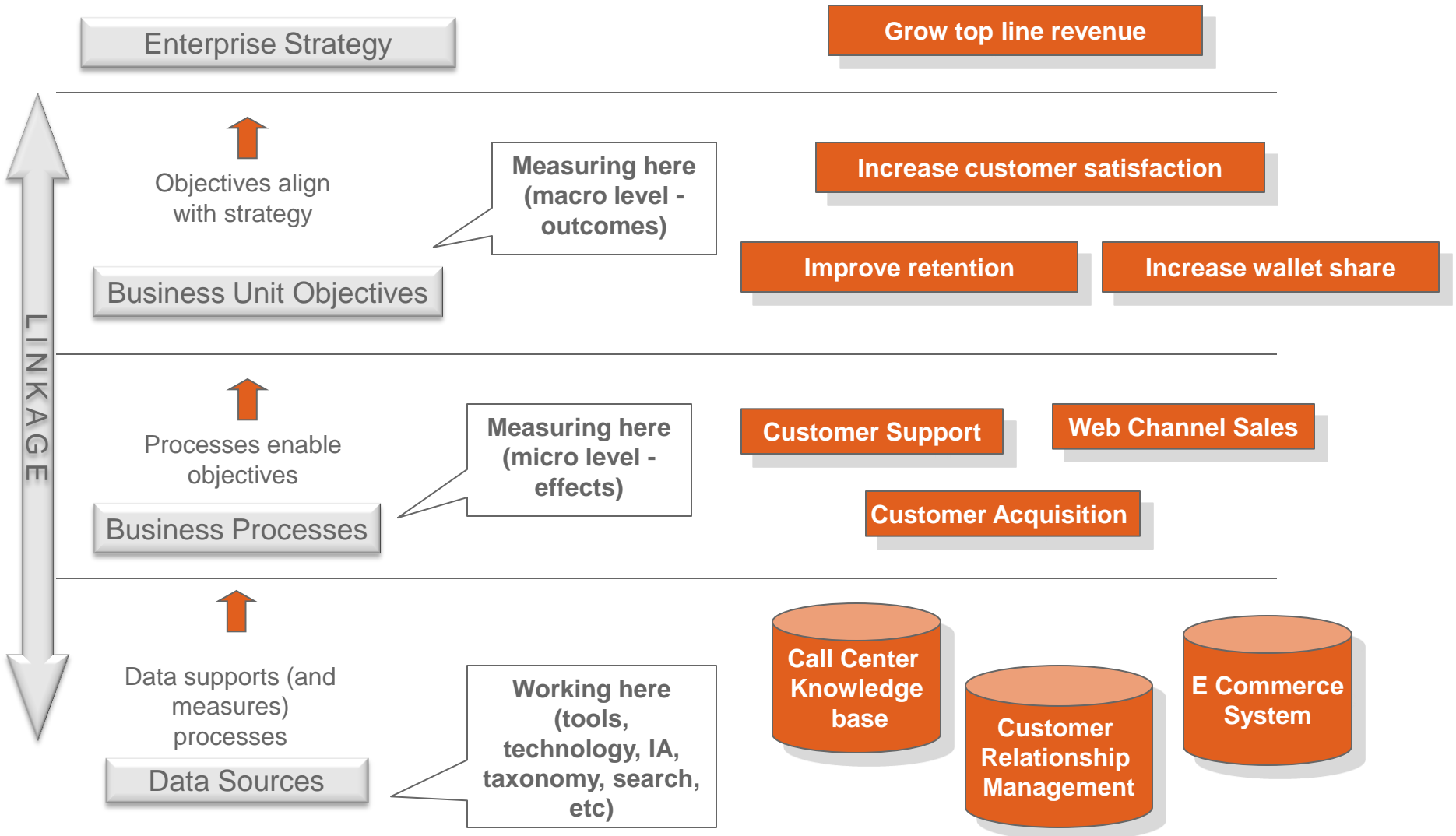
What is the difference between a data architect, a taxonomist and an information architect?

- Data architects are concerned with *structured* data and technical aspects of applications and database design
- Taxonomists are concerned with *unstructured* content semantics and the meaning of terms
- Information architects consider how structured data elements, unstructured content meaning and user intent combine to form the user experience

An integrated approach is required in order to leverage the strengths of each of these areas. Focusing on one without understanding the impact on the others will be suboptimal

Alignment | Enterprise Strategy with Enterprise Information Architecture

CEO: “Show me how will this project increase our revenue.”



Another Poll

What do you see as the benefits of enterprise information architecture to your organization? (select all that apply)

- Improved search and findability
- Better business intelligence
- More effective application inter-operability
- Greater innovation and agility

The Role of Enterprise Information Architecture in Content Engineering

June 5, 2013

Agenda

- ▶ The Marketing Imperative
 - 1 to 1 relationships
 - Greater accountability
 - The technology landscape
- ▶ The Content Challenge
 - Why now
- ▶ Content Engineering
 - The geeky underbelly of Enterprise IA
- ▶ An Example from the Trenches

About Kanban

- ▶ Kanban is a boutique technology consultancy focused on the integration and optimization of content-centric and marketing technologies.
- ▶ Founded in 2006
- ▶ HQ in NYC
- ▶ Serving
 - Consumer electronics
 - Manufacturing
 - Telecom
 - Higher education
 - Retail
 - Media & publishing

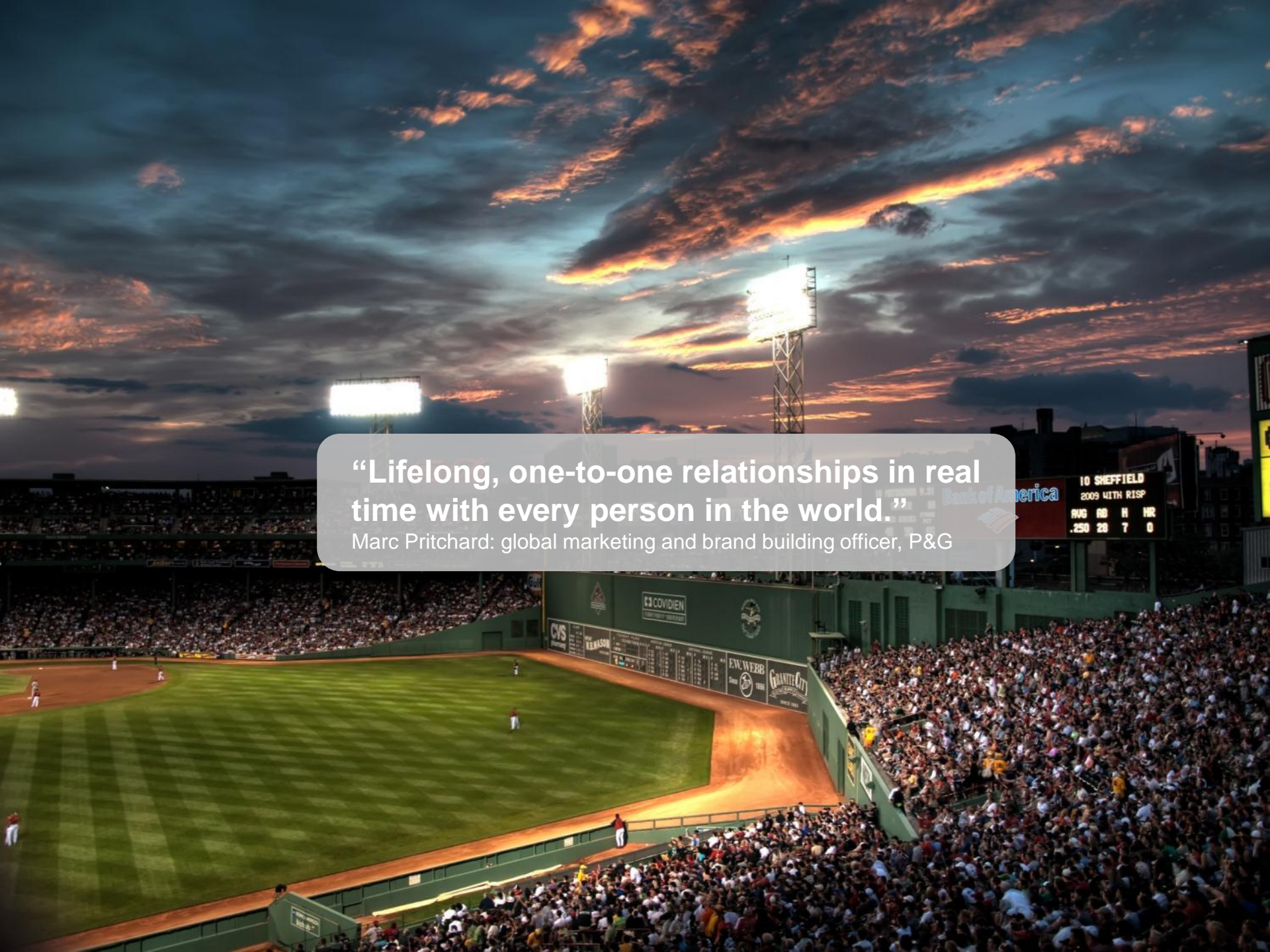


Philip Wisniewski, EVP, Client Development

- ▶ Nearly 20 years of content-centric technology experience working with Marketing, IT, LoB, Customer Service and KM specialists and stakeholders.
- ▶ Involved with award-winning projects across a diverse set of disciplines:
 - Global intranets
 - eCommerce
 - Web content management
 - Enterprise document management
 - Customer service applications
 - Content marketing
 - Marketing technology optimization/integration
- ▶ At Kanban, Philip applies a mix of strategy, client development, and service delivery, to identify and foster value-based client relationships and deliver business impact through content-centric technology initiatives.

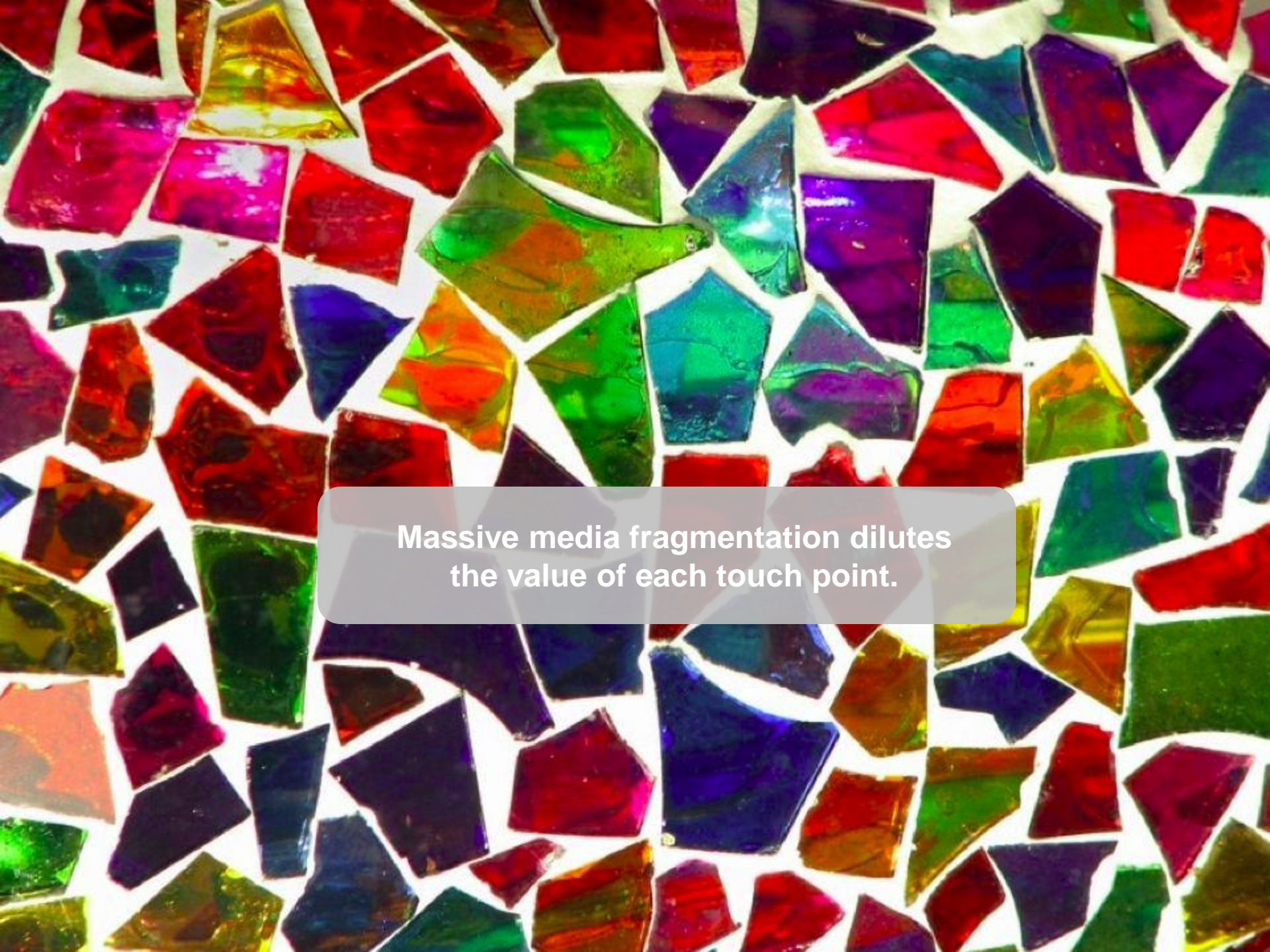


M a r k e t i n g



“Lifelong, one-to-one relationships in real time with every person in the world.”

Marc Pritchard: global marketing and brand building officer, P&G



Massive media fragmentation dilutes
the value of each touch point.



Content is the new marketing currency.

54055

S. HILARI
OPERA

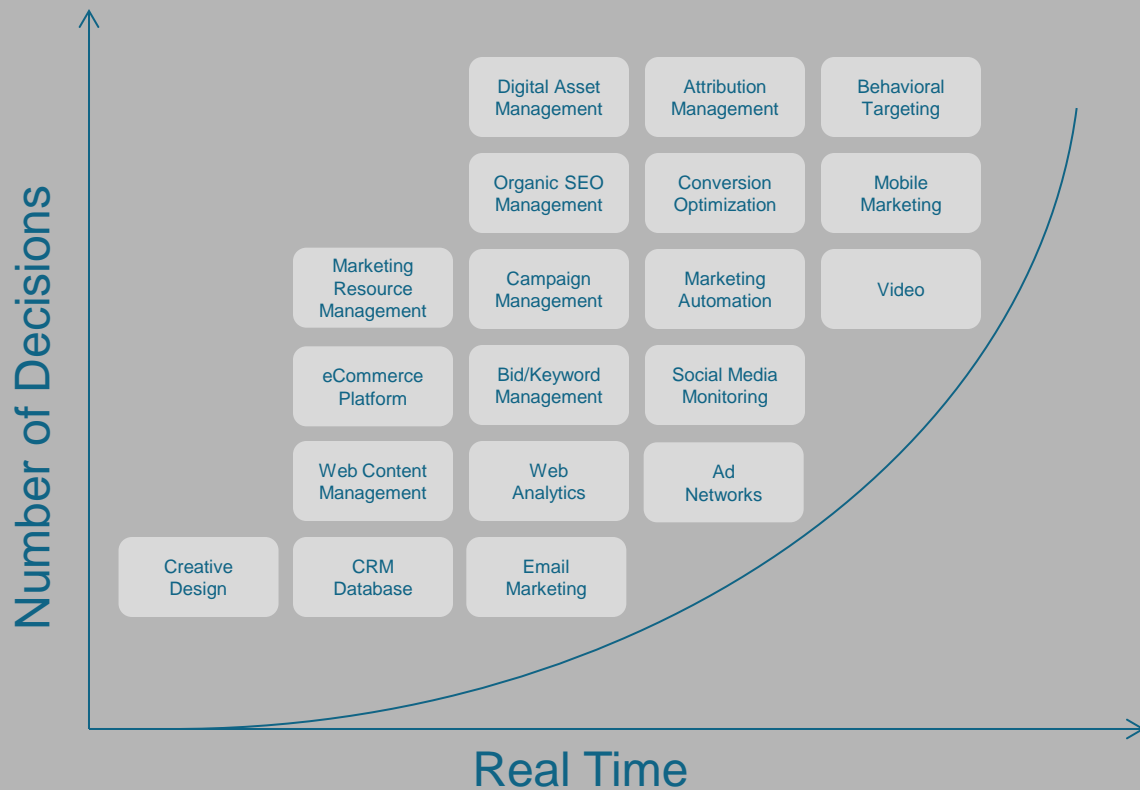
S. OPTATI AFRICANI
EPISCOPI
DE
SCHISM. DONAT

LIBRI VII.


S. PROSPERI
OPERA

S. MARTINI
OPERA

INCOGNITUM
IN
PSALMIS



Source: Scott Brinker

A man with glasses and a checkered shirt is working on a computer system. He is using a multimeter to test a component on the desk. The computer tower is open, showing internal components like the hard drive and power supply. A monitor to the right displays a software interface. The desk is cluttered with various cables and a green cloth.

31% of marketing organization now have a marketing technologists on staff.

Source: Gartner 2012



**Visionaries
Content = Currency
Lack key skills**

They need you!

HELLO
my name is

CONTENT

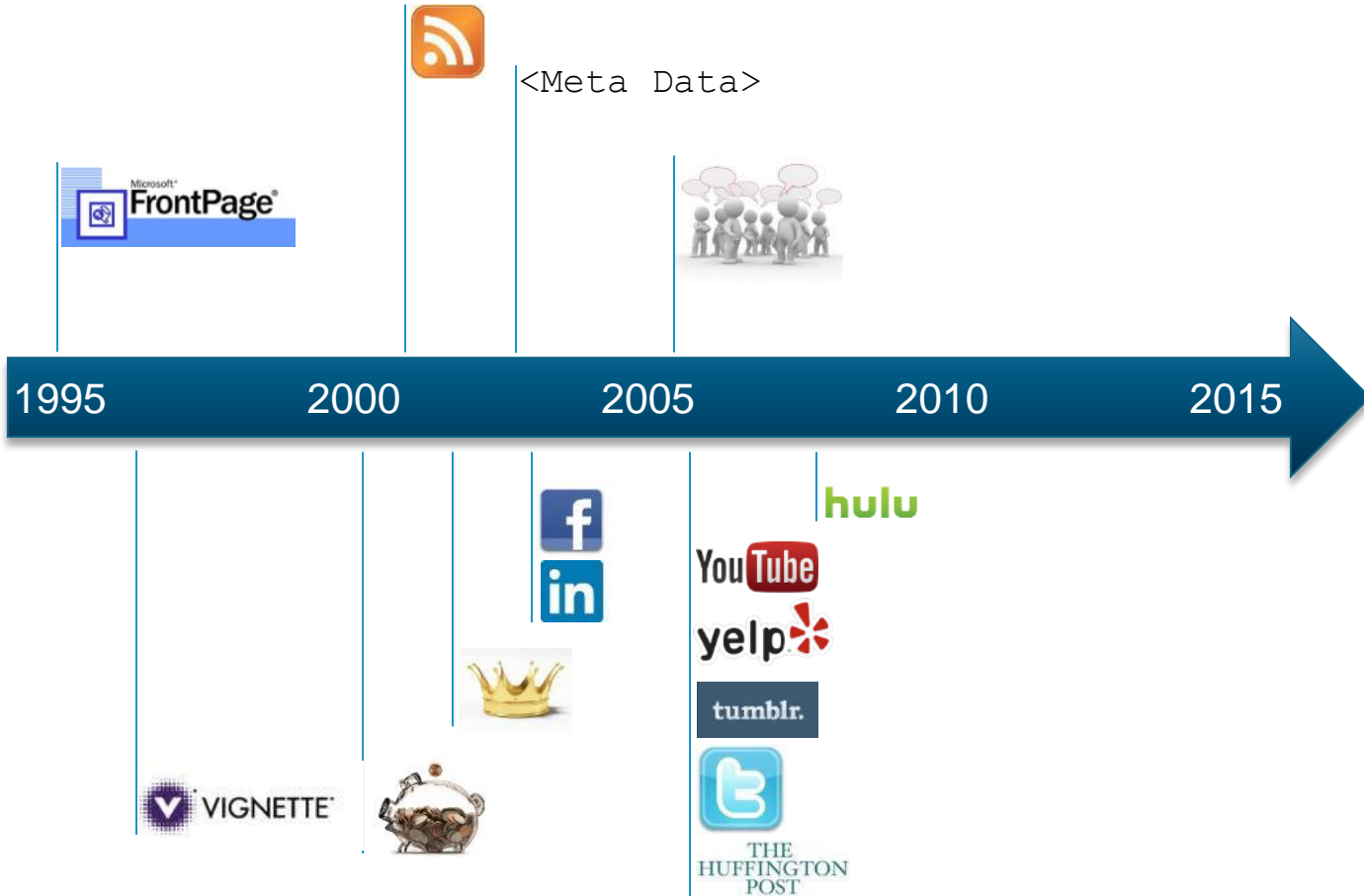
Content Management



Present and Manage

Content Management

SEO/ Search / Content Strategy



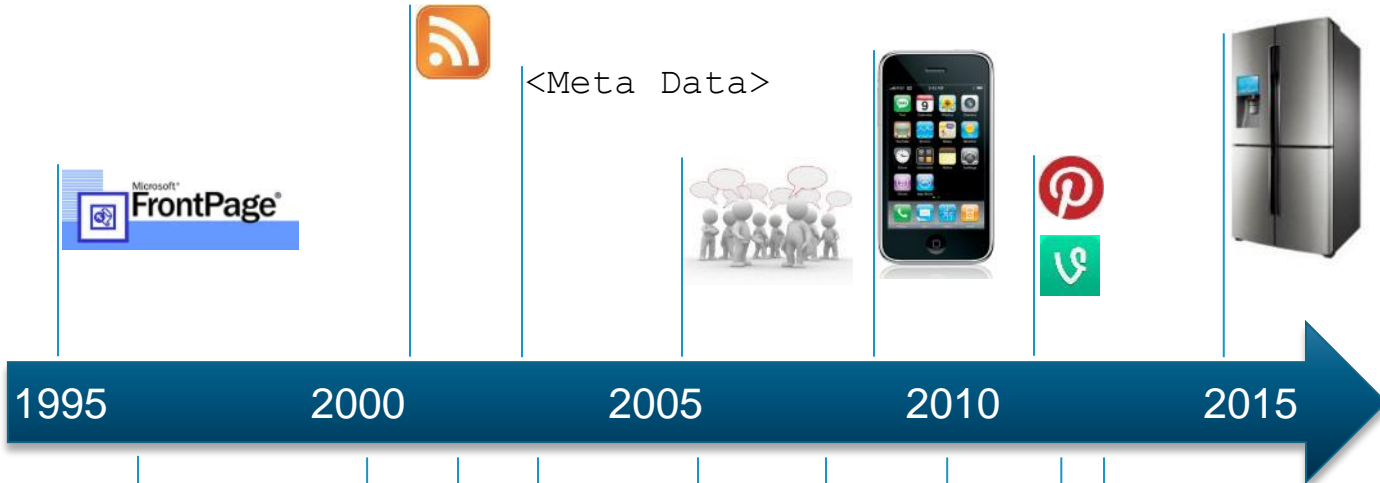
Present and Manage

Attract and Engage

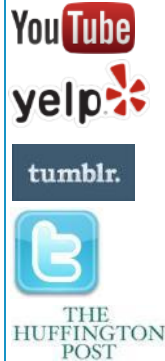
Content Management

SEO/ Search / Content Strategy

Content Engineering



<Meta Data>



hulu

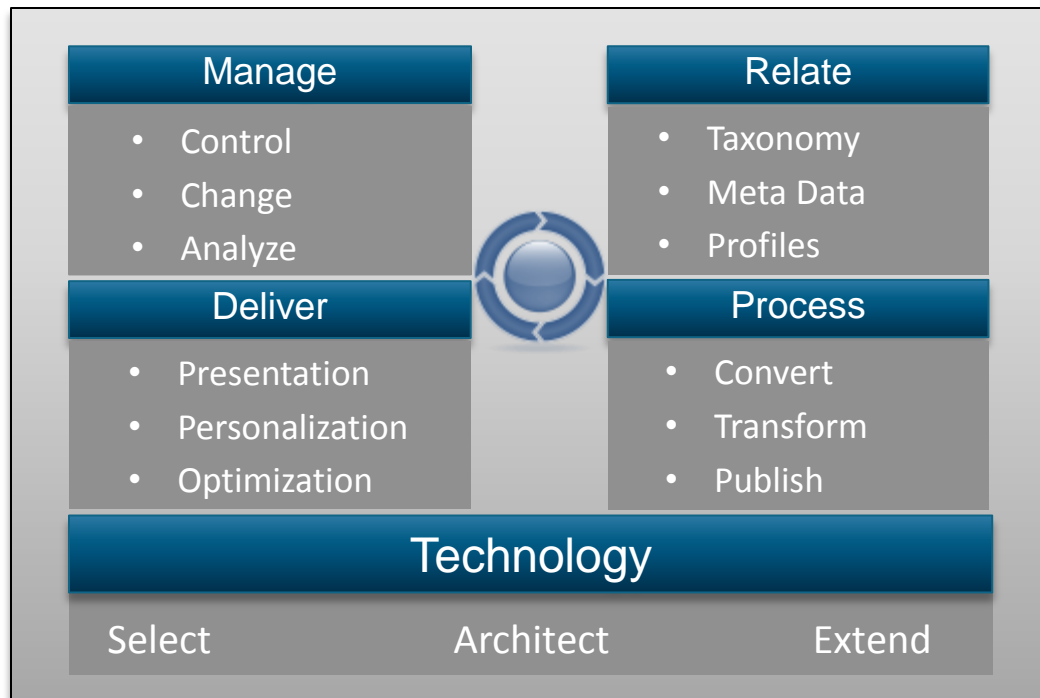


Present and Manage

Attract and Engage

1:1 Conversation

What is content engineering?



Content Engineering requires a consistent view of data across applications, devices, systems, processes, and people

An Example from the Trenches



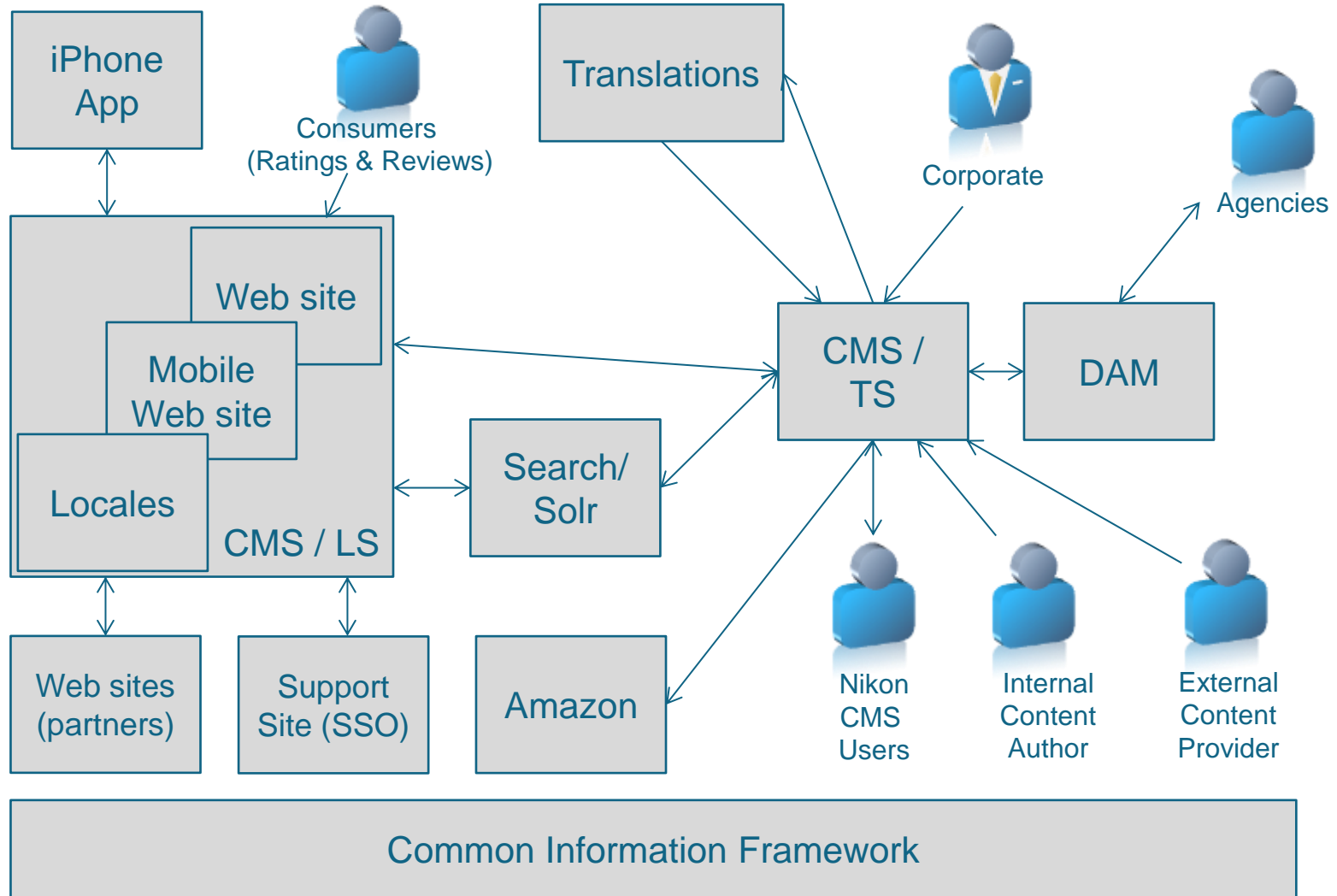
The Challenge



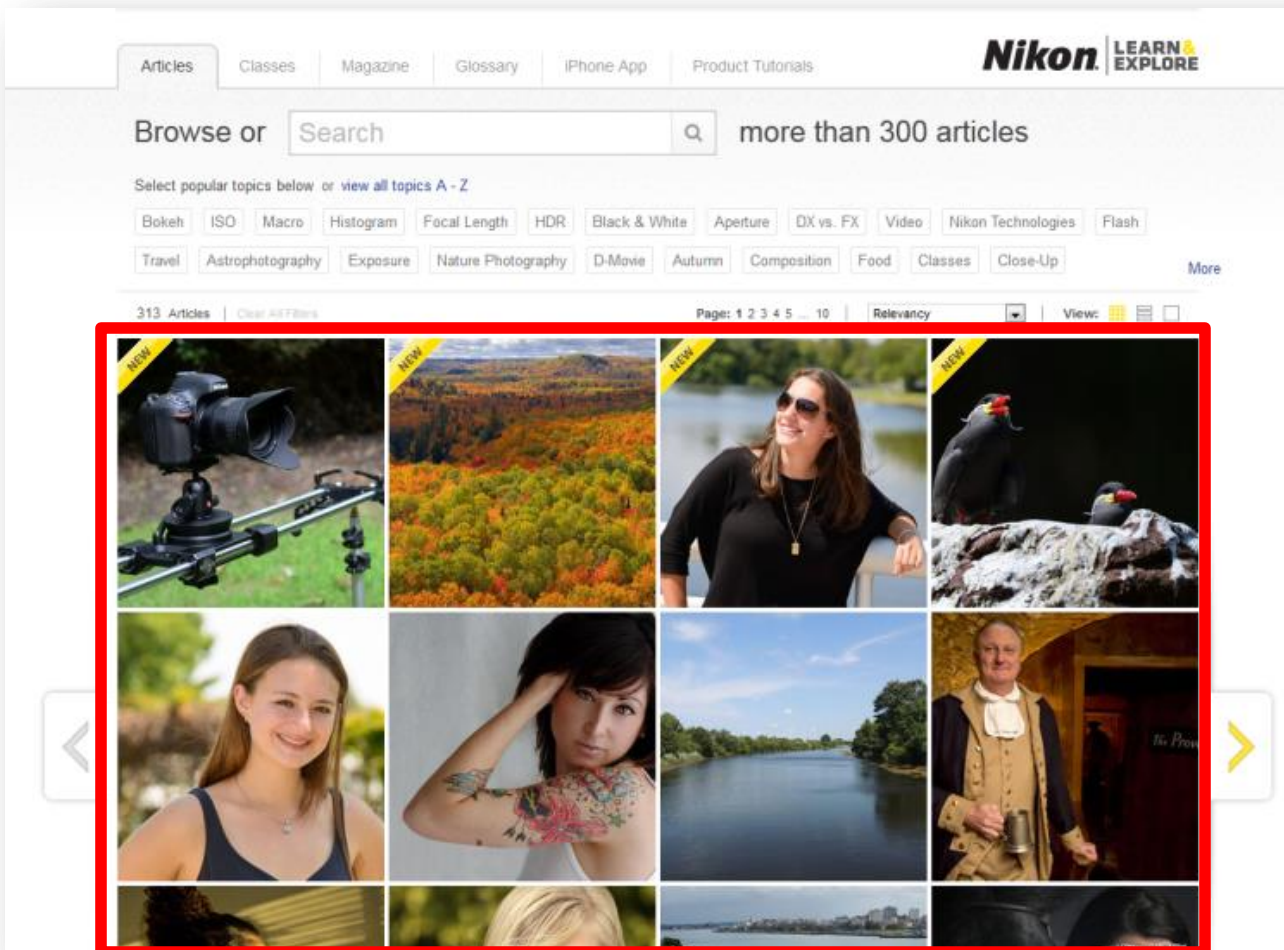
Complicating Factors

- ▶ External content sources and partners
- ▶ Multiple content outlets and platforms
- ▶ Legacy CMS & DAM
- ▶ Content had to be findable
- ▶ Experience had to be visually driven
- ▶ Required common vocabularies, consistent cross system metadata and an integration framework to allow multiple systems to communicate with one another

Technology



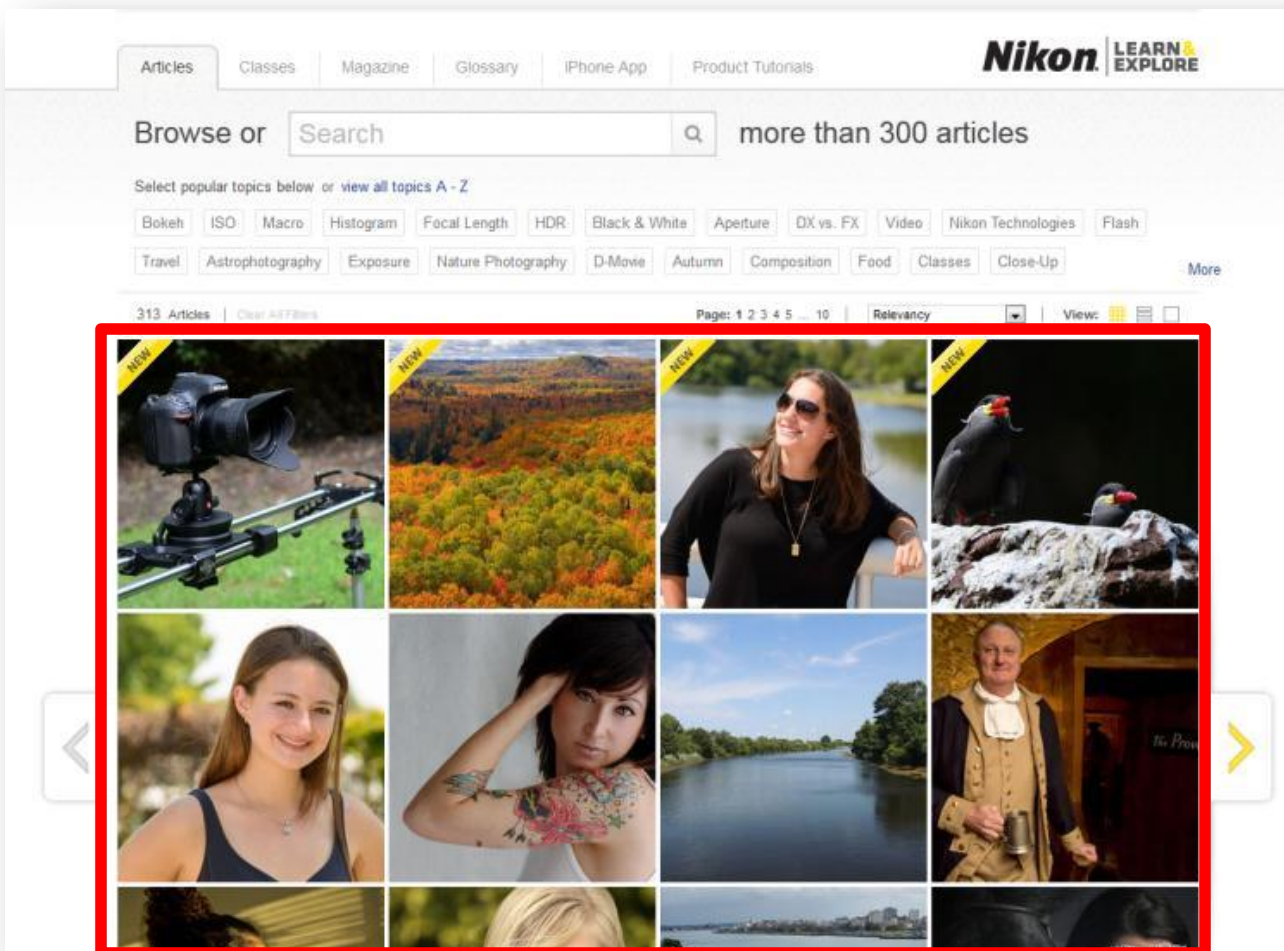
The Solution - Rich Experience



“We really wanted to do something different with the experience of interacting and exploring deep, branded content...”

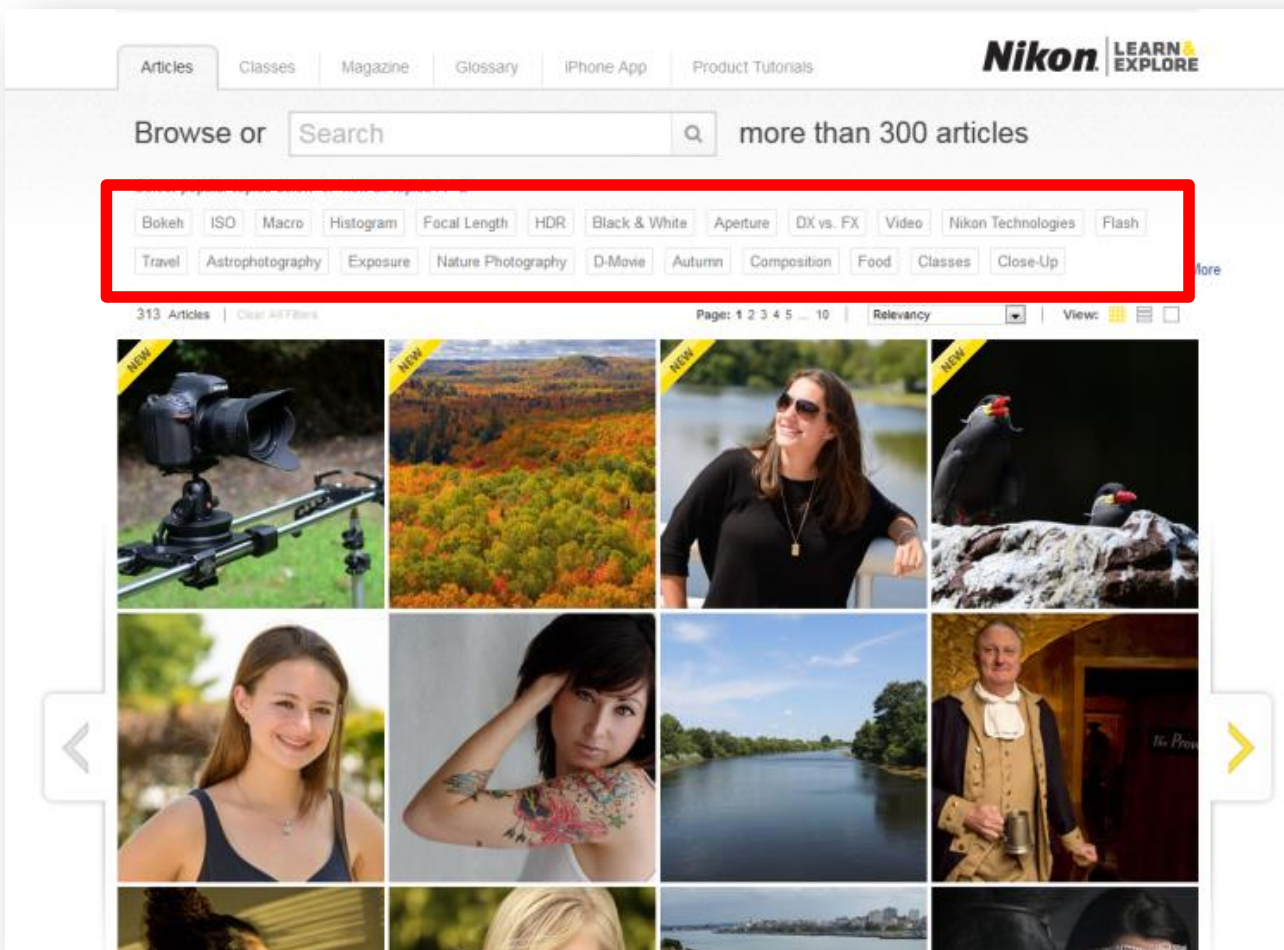
David Dentry
Sr. General Manager
Customer Experience
Nikon Inc.

The Solution - Specialized Delivery



- ▶ Specialized file cache mechanism speeds page rendering
- ▶ Custom deployment process speed performance when syndicating content across servers
- ▶ Use of HTML 5 History API to generate SEO-optimized content
- ▶ This also allows search engines to serve up pre-filtered results based on the search engine query.

The Solution - Navigation and Filtering



- ▶ SEO and business derived queries
- ▶ Multi-language syntax-aware query processing
- ▶ “MLT” queries within Apache Solr processed content relationships
- ▶ Right-sized presentation of results with truncating techniques

A user can programmatically create the “pills”

The screenshot shows a content management system interface. At the top, there are tabs for 'Content', 'Workflow', 'Administration', 'Site Map', 'Tech Specs', and 'Deployments'. Below the tabs is a menu bar with 'File', 'Edit', 'View', 'Actions', 'SitePublisher', and 'GlobalLink'. A search bar and several utility icons (Search, Compare, Get Latest, Import, Edit, Preview, Submit) are also present. The main area is divided into two panes. The left pane shows a tree view of the site structure, with 'main_wa' selected. Under 'main_wa', there are folders for 'data' and 'IMG'. The 'IMG' folder is selected. The right pane shows a table of files in the 'IMG' folder. The table has columns for 'Name', 'Code', 'Product Name', 'Modified By', and 'Modified'. The file 'Animals.xml' is selected.

Name	Code	Product Name	Modified By	Modified
advanced.xml			SYSTEM	7/25/12 11:3...ag
adventure-sports.xml			SYSTEM	9/18/12 2:48...ag
aerial.xml			SYSTEM	9/18/12 2:48...ag
Air2Air-Workshops.xml			SYSTEM	9/18/12 2:48...ag
airshows.xml			SYSTEM	9/18/12 2:48...ag
Alan_Thornton.xml			SYSTEM	9/18/12 2:48...ag
Alfie_Goodrich.xml			SYSTEM	9/18/12 2:48...ag
Alison_Lyons.xml			SYSTEM	9/18/12 2:48...ag
Ami_Vitale.xml			SYSTEM	9/18/12 2:48...ag
AmyN_Nasser.xml			SYSTEM	9/18/12 2:48...ag
Andrew_Kornylak.xml			SYSTEM	9/18/12 2:48...ag
<input checked="" type="checkbox"/> Animals.xml			SYSTEM	7/25/12 11:3...ag
Ann-Cutting.xml			SYSTEM	7/25/12 11:3...ag
Ann_Cutting.xml			SYSTEM	7/25/12 11:3...ag
Ann_Elliott_Cutting.xml			SYSTEM	9/18/12 2:48...ag
aperture.xml			SYSTEM	9/18/12 2:48...ag
Apple-Pill.xml			Karen Peters...	7/25/12 11:3...ag
architecture.xml			SYSTEM	9/18/12 2:48...ag
Arthur_Meyerson.xml			SYSTEM	9/18/12 2:48...ag
astrophotography.xml			SYSTEM	9/18/12 2:48...ag
Aurora-Multimedia-Work...			SYSTEM	7/25/12 11:3...ag
autofocus.xml			SYSTEM	9/18/12 2:48...ag

A user can programmatically create the “pills”

The screenshot displays a web application interface with a navigation menu at the top containing 'Content', 'Workflow', 'Administration', 'Site Map', 'Tech Specs', and 'Deployments'. Below this is a standard menu bar with 'File', 'Edit', 'View', 'Actions', 'SitePublisher', and 'GlobalLink'. A search bar and utility icons (Search, Compare, Get Latest, Import, Edit, Preview, Submit) are also present. The main content area shows a file explorer on the left with a tree view containing 'Homepage', 'HtmlContent', 'InteractiveHero', and 'Jobs'. The central pane displays 'All Files: IMG' with a table header including 'Name', 'Code', 'Product Name', 'Modified By', and 'Modified'. A file named 'advanced.xml' is visible. On the right, a 'Query Results for Animals (57)' panel lists 57 items, including 'Santa Fe Photographic Workshops', 'Zoo and Wildlife Photography', and 'Thomas D. Mangelsen Understands the Behavior of the Animals he Photographs'. The bottom section is titled 'Edit LnE.Query' and contains a form for 'Animals.xml'. This form includes a 'Run Query' section with buttons for 'See Query Results for Proofing' and 'See Query Results for Prod'. Below are input fields for 'Title *' (containing 'Animals'), 'Content Type', 'Content Categories', 'Must-Have Text' (containing 'animal, pet, wildlife, wild animal'), 'Nice-To-Have Text', 'Photographer', and 'Author'. Each field has a help icon and a 'Select...' button.

Content | Workflow | Administration | Site Map | Tech Specs | Deployments

File Edit View Actions SitePublisher GlobalLink

Search | Compare | Get Latest | Import | Edit | Preview | Submit

< US: main_wa //ksdevts1/default/main/US/WORKAREA/main_wa/templatedata/en_US/LnE.Query/data/IMG Go

All Files: IMG

Name	Code	Product Name	Modified By	Modified
advanced.xml				

Query Results for Animals (57)

- Santa Fe Photographic Workshops
- Zoo and Wildlife Photography
- Thomas D. Mangelsen Understands the Behavior of the Animals he Photographs
- Taking Better Photographs of the American West
- Taking Better Pictures of Animals at the Zoo
- Capturing Cats in Pictures
- Pet Mode
- John Shaw: A Photographer's Vision Simplified
- Shooting Wirelessly with Nikon Digital Cameras and Wi-Fi Adapters
- Galapagos Encounters: Playing by Different Rules
- How-To Take Great Photos at the Aquarium
- The Power and Beauty of Bears and Other Animals
- Photographing the Elusive Alaskan Marmot
- Session Two: Color, Light, Technology
- Nikon School: Session One
- Preservation and Protection of Wildlife Through Photography
- Taking Photographs of Alligators and Other Swamp Life
- Tips for Photographing Birds
- The Challenge of Bird Photography
- Taking Better Photographs on the Water
- Moose Peterson: Light Lessons
- Carol Freeman - Photographing Endangered Species
- Think: About Your Subject Before You Begin Shooting
- Top Ten Trek Tips from the Trail with Mark Alberhasky
- Skill Set
- Subject Tracking
- Moose Peterson: How to Photograph Winter Landscapes
- Quick Stop
- The Long Reacher

Edit LnE.Query Help

Animals.xml Save Save As Form Settings Preview Generate

Collapse All Items

Run Query

See Query Results for Proofing See Query Results for Prod

Title * Animals

Content Type Select Content Type...

Content Categories Select Related Categories...

Must-Have Text animal, pet, wildlife, wild animal

Nice-To-Have Text

Photographer

Photographer Browse

Author

A user can programmatically create the “pills”

```
<beans xmlns="http://www.springframework.org/schema/beans" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.springframework.org/schema/beans http://www.springframework.org/schema/beans.xsd http://www.springframework.org/schema/util http://www.springframework.org/schema/util.xsd">

    <bean id="LnE-FieldDefinitionList" class="com.nikon.solr.config.FieldDefinitionList">
        <property name="defaultDataAccessType" value="Property" />
        <property name="fieldDefinitions">
            <set>

                <!-- ARCHIVE_D -->
                <bean class="com.nikon.solr.config.FieldDefinition">
                    <property name="solrFieldName" value="archive" />
                    <property name="solrFieldType" value="Date" />
                    <property name="propertyName" value="archiveDate" />
                </bean>

                <!-- AUTHORS_M_S -->
                <bean class="com.nikon.solr.config.FieldDefinition">
                    <property name="solrFieldName" value="authors" />
                    <property name="solrFieldType" value="MultiString" />
                    <property name="propertyName" value="articleAuthors.number" />
                </bean>

                <!-- CATEGORY_M_S -->
                <bean class="com.nikon.solr.config.FieldDefinition">
                    <property name="solrFieldName" value="category" />
                    <property name="solrFieldType" value="MultiString" />
                    <property name="propertyName" value="categoriesExpanded" />
                </bean>

                <!-- CLASSIFICATION_S -->
                <bean class="com.nikon.solr.config.FieldDefinition">
                    <property name="solrFieldName" value="classification" />
                    <property name="solrFieldType" value="String" />
                </bean>
            </set>
        </property>
    </bean>


```

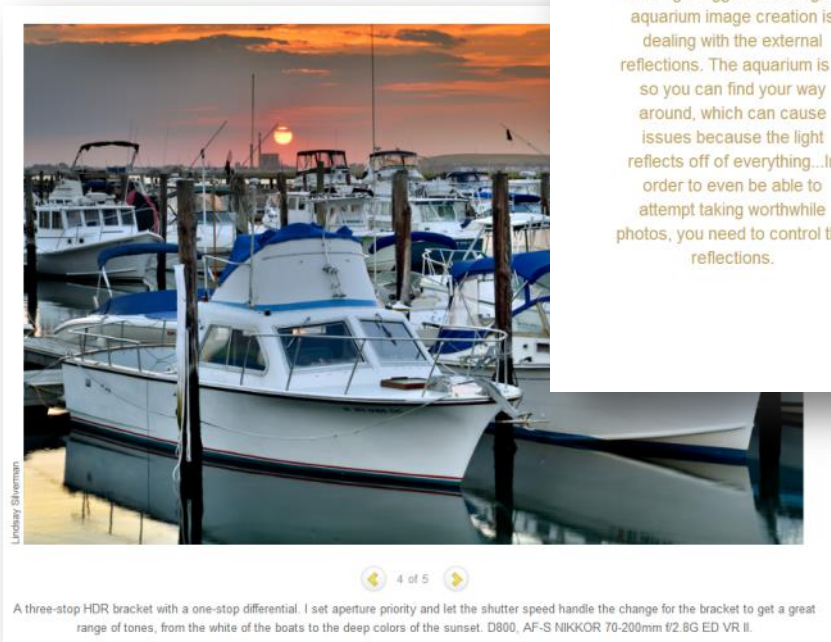
- The Long Reacher

A user can programmatically create the “pills”

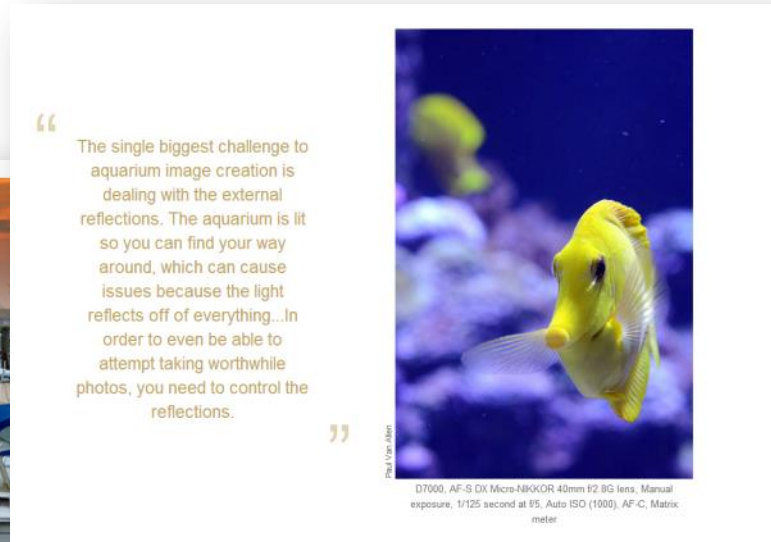
The screenshot shows a web application interface for searching content. The search results are displayed in a list format. The first result is for 'Animals the Photographs' by Jody Dole. The interface includes a search bar, filter sections for 'Must-Have Text' and 'Nice-To-Have Text', and a list of search results with details like image, title, and publication date.

```
    "responseHeader": {
      "status": 0,
      "QTime": 1,
      "params": {
        "explainOther": "",
        "indent": "on",
        "hl.fl": "",
        "wt": "json",
        "rows": "10",
        "version": "2.2",
        "fl": "*",
        "start": "0",
        "q": "*",
        "fq": "doc_type_s:lne-item"
      }
    },
    "response": {
      "numFound": 954,
      "start": 0,
      "maxScore": 1.0,
      "docs": [
        {
          "image_rectangle_s": {
            "width": "167",
            "height": "130",
            "url": "/en_INC/IMG/g699v9af"
          },
          "number_s": "g699v9af",
          "url_s": "/Learn-And-Explore/Article/g699v9af/jody-dole-photographs-objects-the",
          "title_text_s": "Jody Dole Photographs Objects that Catch His Eye",
          "created_d": "2010-03-04T21:04:08Z",
          "hidden_b": false,
          "show_in_grid_b": true,
          "pub_d": "2010-03-04T21:06:00Z",
          "number_id_s": "g699v9af-en_INC",
          "title_en_INC": "Jody Dole Photographs Objects that Catch His Eye",
          "text_en_INC": "Jody Dole Photographs Objects that Catch His Eye\n\nSee how com
Studio\n\n\n\nJody Dole is a Nikon Legend Behind the Lens. Sticks. Stones. Shells. Bor
a client hires him to photograph. All end up in Jody Dole s viewfinder. His commercial
commercial. Jody s personal work, which is often used in self-promotion material, ste
that launched his career. An art school graduate working in advertising and film produ
rented a barn in Amagansett, Long Island, and photographed every day for nearly eight
hand-painted backgrounds and used ScotchChrome 1000, a grainy film that he pushed four
the 1989 edition of Graphis Annual. American Photography Annual gave him ten pages. Ar
distiller s vodka and said, \nWhy don t you experiment and see what you can come up wi
like to repeat himself. He s constantly experimenting, not only with new subjects but
manipulation. For instance, Jody was into digital photography before there were digita
to apply imagination and make changes. When Nikon introduced its first digital SLR, th
of my career,\n" Jody says, \nhas been a client saying, Here, take this bowling ball e
way of picturing them, that made them appealing.\n" It s this challenge to his skill ar
City, where he had a home and a studio for 19 years, to a town on the coast of Connect
harbor, the boats... There s a certain level of purity in New England design that I y
or fixing a shutter, there s a certain art to the way people do things here.\n" His rec
the boat. But Jody s curiosity led him to read about boats, study boats and learn abo
work right away,\n" Jody says. Then boat manufacturers started seeing his photos on the
a manufacturer.\n\nUltimately, the subject doesn t matter. \nI never limit myself-I m
do here. \nMaybe the subject has a fascinating design or a great shape, great color or
the subject s beauty is at first entirely in the eye of the beholder, imagined in a pl
tumbleweed...in a studio...against a white seamless background? \nThat s a story, that
great to photograph, but not out here. I wanted to get it back to New York. \nI called
it over. I was a little embarrassed, but I brought it in, and the guy there laughed,
high north desert past Flagstaff, and we picked up other stuff I thought I could use f
time, and I brought out these bones, rocks and clumps of dirt and grass that I wanted
tumbleweed to New York. \n To see more of Jody s work visit his website. Jody Dole ha
          "rating_on_s": "true",
          "image_square_s": {
            "width": "237",
            "height": "237",
            "url": "/en_INC/IMG/g699v9af"
          },
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          "classification_s": "NONE",
          "show_under_grid_b": true,
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            "height": "498",
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          }
        }
      ]
    }
  }
}
```

The Solution - Article Layout



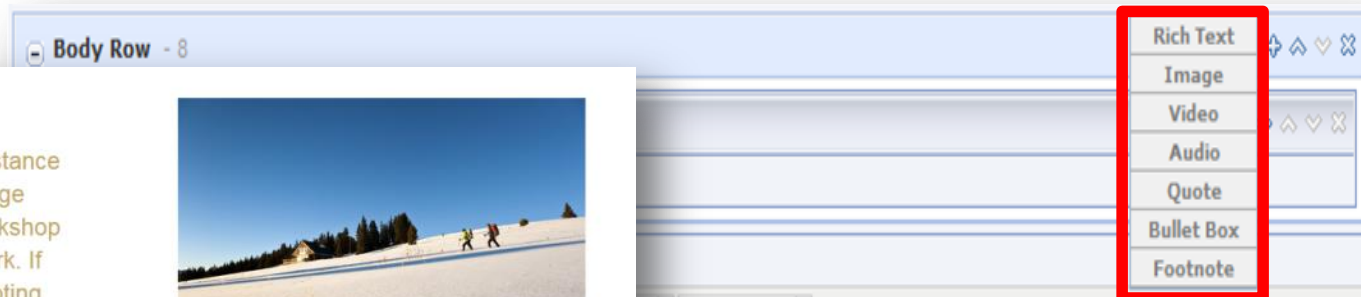
Single Column Layout with Image Carousel



Two Column Layout with Pull Quote

- ▶ Editorial-inspired content authoring of diverse content types (despite legacy system limitations)
- ▶ Authoring focused on content componentization, reuse and tagging.
- ▶ Embedded watermark for digital rights management
- ▶ Multiple layout combinations allow for creativity without sacrificing usability or brand experience

Flexibility and Control



“

Establishing, medium distance and close-up still-image storytelling from our Workshop columnist, Michael Clark. If Michael had been shooting video instead of stills, would he have kept shooting as he circled around and moved in?



Michael Clark

”

1 of 3

changes, our response changes—and we made it change simply with light. We’re talking about color psychology and the way humans respond to light; the warmer the light, the warmer the feeling.”

For those of us more likely shooting outdoors, there’s this example: “I’m photographing a bison in the snow. If I want him to look as cold as he was when I took the photo, I’ll change the camera’s white balance to the colder side—B1 or B2 [B for a blue tone to the light]. If I want him to look warm and fuzzy, I’ll set the white balance to A3 or even A4 [A for an amber tone to the light].”



© Moose Peterson
D3X, PC-E NIKKOR 24mm F3.5D ED, 1/10 second, f22, ISO 100, aperture metering

Then comes the challenge: to take that initial reaction and turn it into an image that grabs the attention of others. How we deal with light will determine

Moose believes that when people really begin to think about light and how to use it in their images, their photography changes, and the emotional reaction people have to their photography changes, too.

Even the way they expose their images will change. Many people base their exposures on the histogram—the graph of the tones in a photograph—but to Moose’s way of thinking there’s something more important than the histogram’s judgment of a “correct” exposure. “People primarily have an emotional reaction to a photograph,” he says, “and to me exposure equals emotion. I expose based on the emotional response I’m feeling as I take the photograph; it’s that emotion I want to deliver to the viewer.”



© Moose Peterson

- Full HD 1080p video at 50/60 and 24/25/30p.
- Built-in two-shot HDR capability.
- 3.2-inch ultra-high-resolution 1,229K-dot LCD monitor.
- Exposure compensation in +/-5 EV in increments of 1/3 or 1/2 EV.
- Exposure bracketing in 1/3, 1/2, 2/3, 1, 2, or 3 EV stops.
- Shutter speeds of 1/8000 second to 30 seconds in 1/3 or 1/2 EV, plus bulb.
- Scene modes include candlelight, child, close-up, dusk/dawn, landscape, night landscape, night portrait, pet portrait, sports and sunset.
- Picture controls include monochrome, vivid, neutral, portrait, plus customizable settings.
- Dust-reduction image sensor cleaning system.
- Durable magnesium alloy body with moisture and dust resistance.

“

I expose based on the emotional response I’m feeling as I take the photograph; it’s that emotion I want to deliver to the viewer

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Lessons Learned

Without a core information architecture, a solution like this would not be possible.

Technology integration and how content is managed, related, processed and delivered through these systems and tools is critical.

Controlled vocabularies and meta-data models will keep both authors and audiences happier.

Extreme flexibility is not always your friend – controls must be in place to prevent maintain efficiency and effectiveness.

Thank you!



Wrap up and Questions



**Please fill out the survey that should be in
your inbox.**

Let us know what topics you are interested in and how we can
improve the series. Email your suggestions to
sharon@earley.com

To learn more about Earley & Associates' services contact Chris
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Thank You

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