



**DESIGN AND MODELING OF
INFORMATION AND EXPERIENCES**

**Supporting Two-way Customer
Interaction with Synergistic Text Analytics
and Taxonomy and Metadata Strategies**

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Today's Journey In a Nutshell

- **Content Delivery Challenges and the Promise of Text Analytics**
- **Supporting Text Analytics with a Technical Content Infrastructure to Enable Adaptive and Responsive Design**
 - The components of a Technical Content Infrastructure
 - Using Text Analytics to Maintain that Infrastructure
 - Using the Infrastructure to Act on Text Analytics Insights via Design Responsiveness
- **Text Analytics & Technical Content Infrastructure Synergies**

Developing an Interaction Design with a supporting infrastructure is key to turning customer insight into actionable design responses.

Overview: Carol Hert and Factor



- 30+ years as an information professional
- A librarian, information science professor, metadata management software consultant, and now, taxonomist and consultant with Factor.
- Focus on metadata and taxonomy design as well as associated management processes

About Factor

*Based in Seattle, Factor provides a range of **assessment, design, and implementation services for digital experience and information infrastructure projects**. Factor clients include retail, media, technology, healthcare, and manufacturing companies. Typical projects include a strategy roadmap, information model design of taxonomy and metadata, and corresponding user experience design.*

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Partial List of Factor Clients



sears

PEARSON



Crate&Barrel



UW Medicine

Microsoft



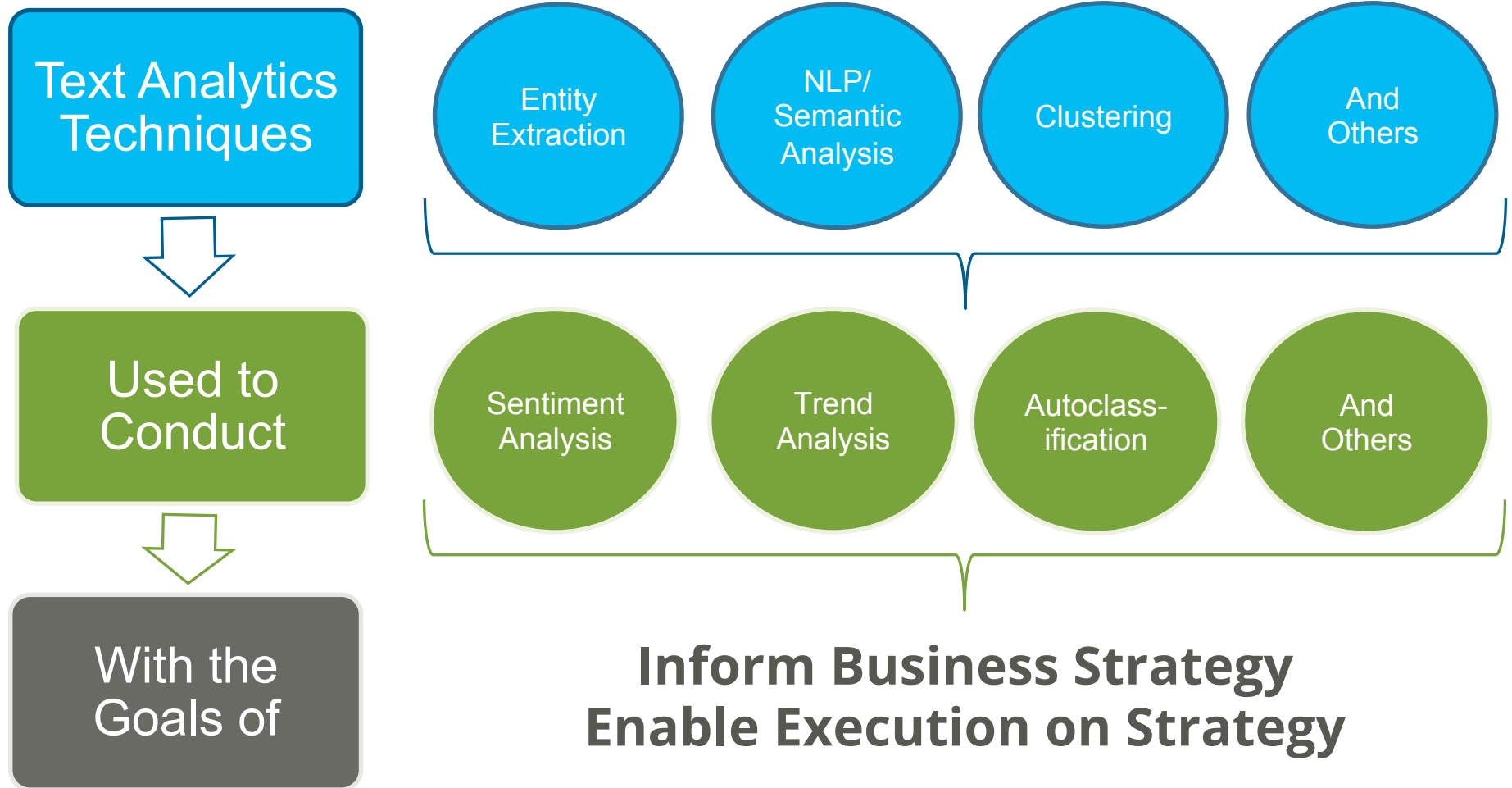
GroupHealth



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Text Analytics. A Big Tent Definition



Content Delivery Challenges and the Promise of Text Analytics

Customer Engagement Today



Healthcare



e-Commerce



Entertainment

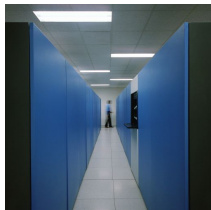


Social and
Professional
Networking



Multi-channel
Multi-platform
2- Way Digital Experiences
That Generate

Big Data about that
Customer's Experience



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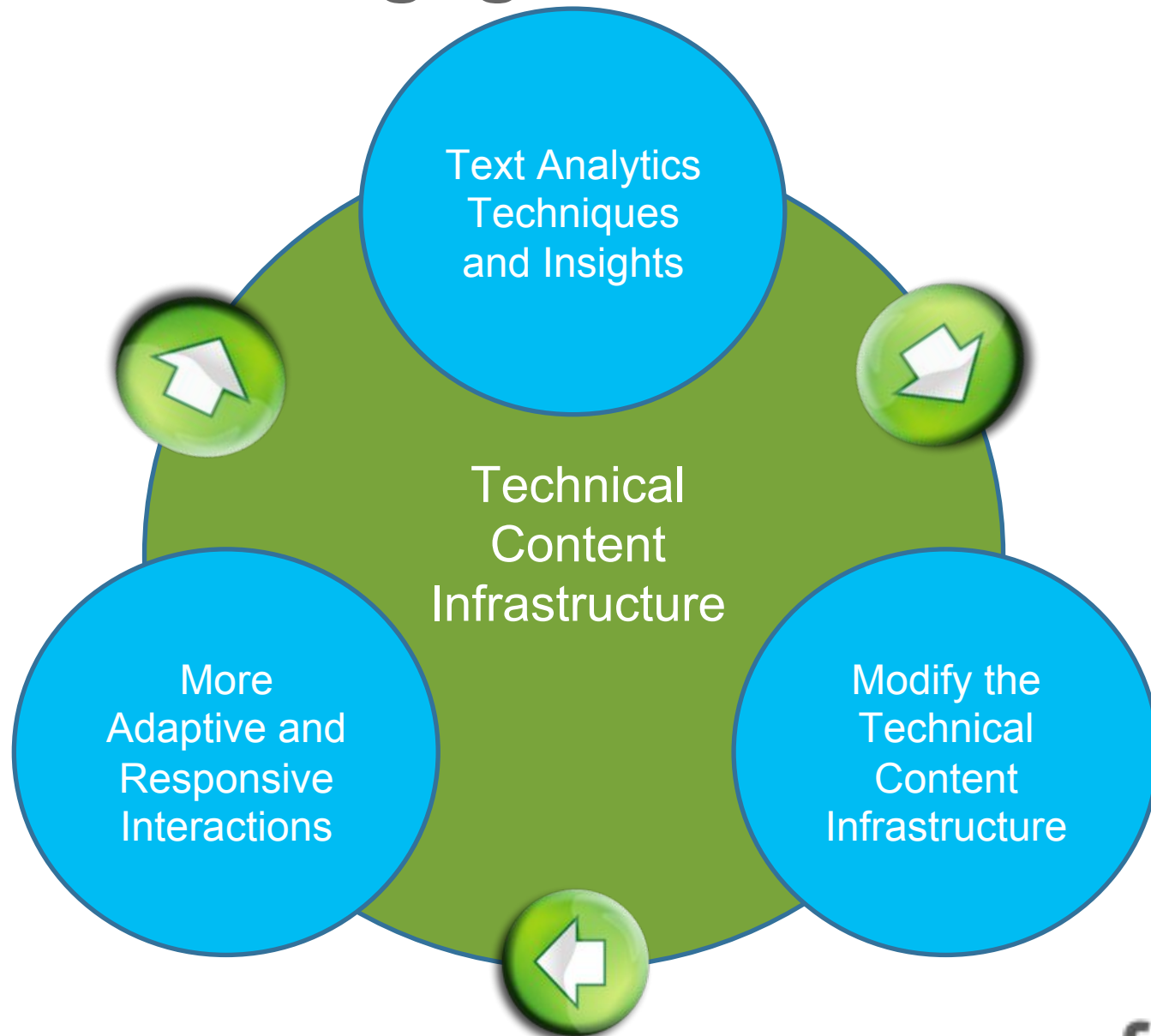
Trends in Customer Engagement

- Growing customer expectations that their digital experience is interactive and adaptive to their needs
- Growing use of Text Analytics for organizing and applying historical customer data to new customer interactions
- Competitive need by business and application vendors to be able to differentiate themselves by being more interactive, and more responsive to their customers

Today's journey is driven by the question:

What type of infrastructure do we need in order to use Text Analytics for adaptive digital experiences?

Customer Engagement Process



Utilizing Text Analytics within a Technical Content Infrastructure to Enable Adaptive and Responsive Design

Three Aspects to Examine

- Defining Technical Content Strategy, Technical Content Infrastructure and its Components
- Using Text Analytics to inform, monitor and maintain the Technical Content Infrastructure
- Using the Infrastructure to act quickly on the insights from Text Analytics to modify the User Experience/ Design.

Defining Technical Content Infrastructure

Technical Content Strategy

The many elements of Content Strategy can be divided into two general areas, ***Editorial Content Strategy*** and ***Technical Content Strategy***.

Content Strategy	
Editorial	Technical
Message and Voice	Taxonomy / Metadata Design
User Experience	DAM / CMS Strategy
Content Creation	Search Implementation
Content Approval / Release	Systems Integration
Search Strategy	Performance Optimization

Technical Content Strategy is the practice of coordinating the systems, metadata, taxonomies, integrations, channels, reports, etc. needed to support digital content initiatives

Multi-Channel Content Delivery

Create

Capture

Deliver

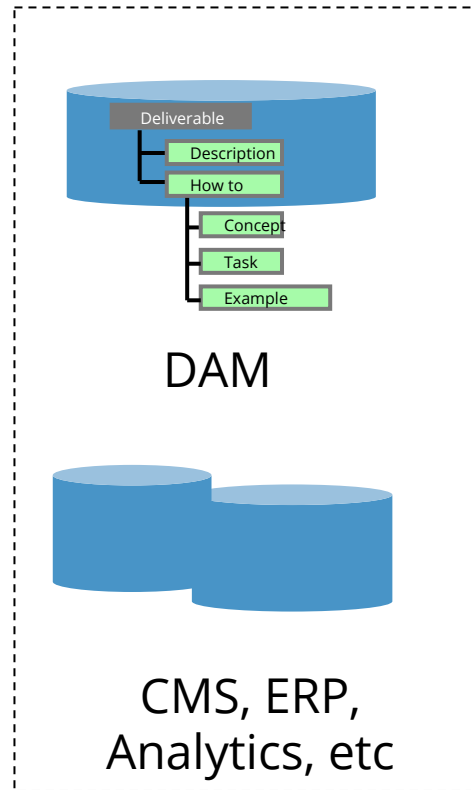
Capture

Creation

Approval

Revision

Etc.



Technical Content Strategy provides a Content Lifecycle Roadmap for Building the Technical Content Infrastructure

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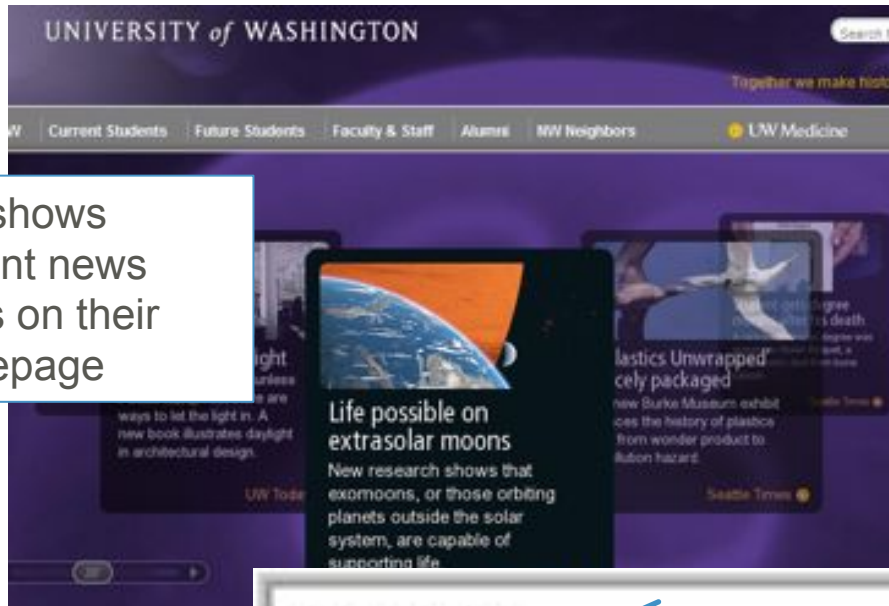
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Content Infrastructure Components

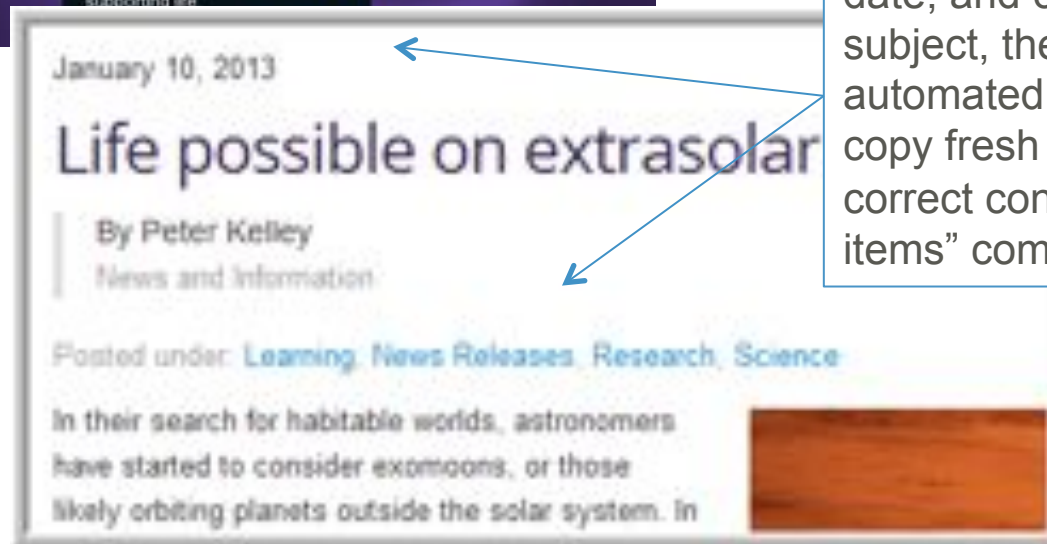
- **Content Vehicles and Content Attributes (Metadata)**
 - Can be used to programmatically identify content for the experience, support search and navigation, and be used to populate the online experience.
- **Metadata rules**
 - These rules further specify the identified content vehicles and attributes to establish the criteria by which content supports the user experience.
- **Workflows**
 - A sustainable content strategy requires that it can be maintained and modified.
- **Taxonomies to dynamically control content presentation to empower:**
 - Personalization,
 - Integration of structured and unstructured information sources,
 - Content reuse across platforms and devices,
 - Customized content for specific audiences and purposes,
 - Content syndication and assembly based on user and interest profiles.

The Infrastructure in Use, An Example

UW shows current news items on their homepage



Using Tags on the content for date, and content type/ subject, they can use automated ways to keep the copy fresh and populate the correct content to the “news items” component

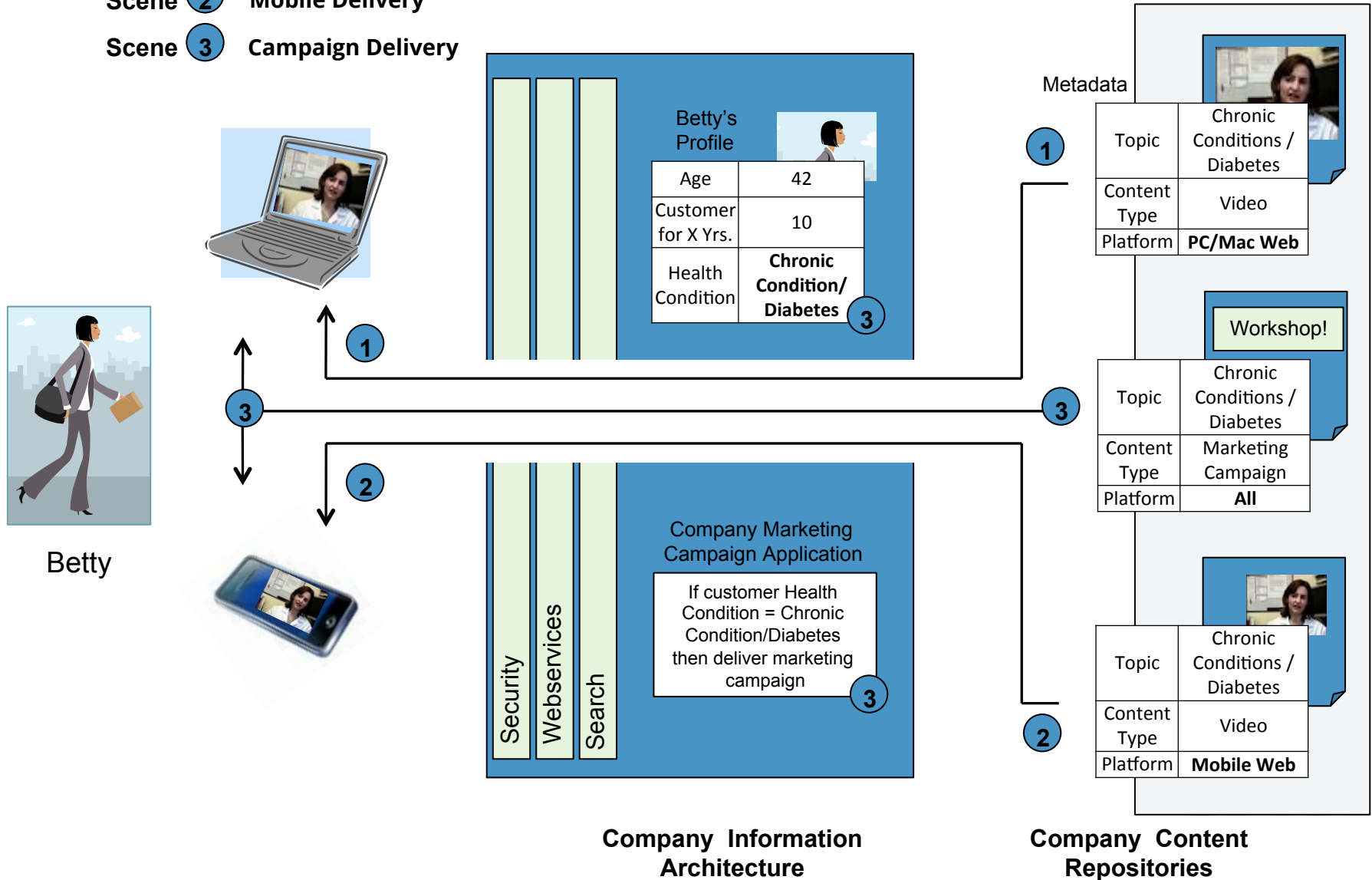


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The Infrastructure in Use, An Example

- Scene ① PC Delivery
- Scene ② Mobile Delivery
- Scene ③ Campaign Delivery



How Does Text Analytics Relate to Our Infrastructure?

- Text Analytics provides insights that inform the maintenance of the Technical Content Infrastructure
- Text Analytics provides insights to guide Design modifications, using the Technical Content Infrastructure as the conduit.

Text Analytics and the Technical Content Infrastructure: Informing the Infrastructure

Using Text Analytics to Inform the Infrastructure

- Modifying Taxonomies using Trend Analysis, NLP, Entity Extraction
- Trend Analysis: Modifying business rules to push appropriate and timely content
- Using clustering to inform taxonomy used for auto-classification (and vice versa)

Text Analytics Supports Taxonomies

For Interaction Design, Taxonomies Enable Consistent Tagging of Content and also Support Search and Navigation

To Do So, Taxonomies Must Provide:

- Comprehensive expression of the domain
- Awareness of alternative terminology for concepts and entities
- Ongoing incorporation of new concepts to represent



Entity
Extraction

NLP/
Semantic
Analysis

Trend
Analysis

Entities are hard to identify and maintain with human effort: Entity Extraction assures that our named entity taxonomies correctly identify important entities, new relationships, and that new entities are quickly identified and added to taxonomies

Semantic Analysis provides ability to understand conceptual connections critical for enhancing search with synonyms & enabling advanced semantic search. These connections can be modeled in taxonomy

Trend Analysis of Content and Customer Inputs allows identification of new concepts that are potentially important to reflect as concepts in the taxonomy

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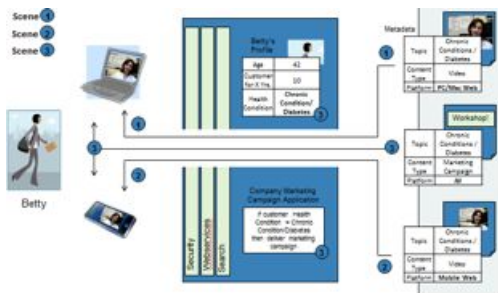
Trend Analysis for Metadata/ Business Rule Modification

- Business Rules Act on Metadata to Provide Content to The Interaction
- Results of Trend Analysis Can Indicate Changes to The Business Rules



Example 1: Providing the “Hottest” topics to the News Section

New Trends Captured -> Taxonomy Reflects Trends -> Business Rule Changed to Include New Trend Term -> News Section populated with Content representing that Trend



Example 2: Providing the Relevant Content Across Platforms to Meet User Information Needs: Users Expressing need for Information on Emerging Medical Condition and preferred delivery approach

New Trends Captured From Social Media -> Taxonomy Reflects Trends -> Business Rule Changed to Include Content Type for delivery approach, topic, and platform -> Customers can now access that experience

Clustering for the Content Infrastructure

- Clustering can indicate concepts for taxonomies and point to different approaches to organizing concepts within the taxonomies
- Clustering can point to new metadata elements relevant to the content
 - Design guidance would be needed to review whether these metadata elements could support design goals.
- Clustering (and training of clustering) is often shown to be enhanced with a taxonomic backbone.

Text Analytics and the Technical Content Infrastructure: Executing on the Adaptive Design

Using Text Analytics Insights to Execute on the Adaptive Design

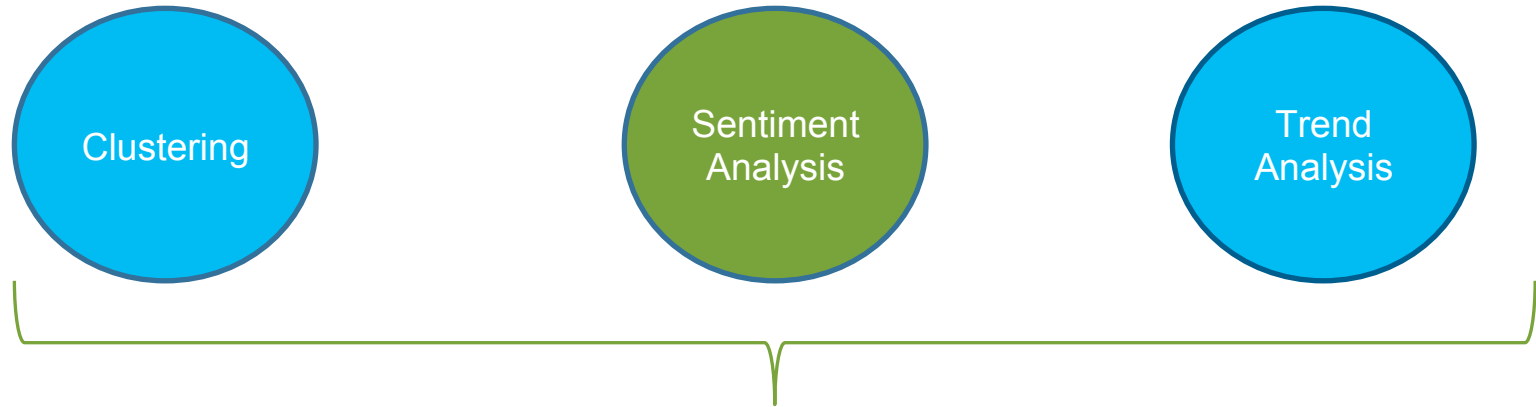
- Delivering on the Design
- Design Change

Content Provision Aspects of Interaction Design

Getting the right content to the right audiences on the right platforms at the right time is job 1

- Use Clustering and Auto-classification Techniques to quickly tag content to be delivered according to the technical content infrastructure.
- Metadata, taxonomies, and business rules informed by Text Analytics enable content selection and delivery to components of the interaction

Text Analytics Informs Design Change



Clustering can indicate logical divisions that might be reflected in the navigation structure or facets to use in search design

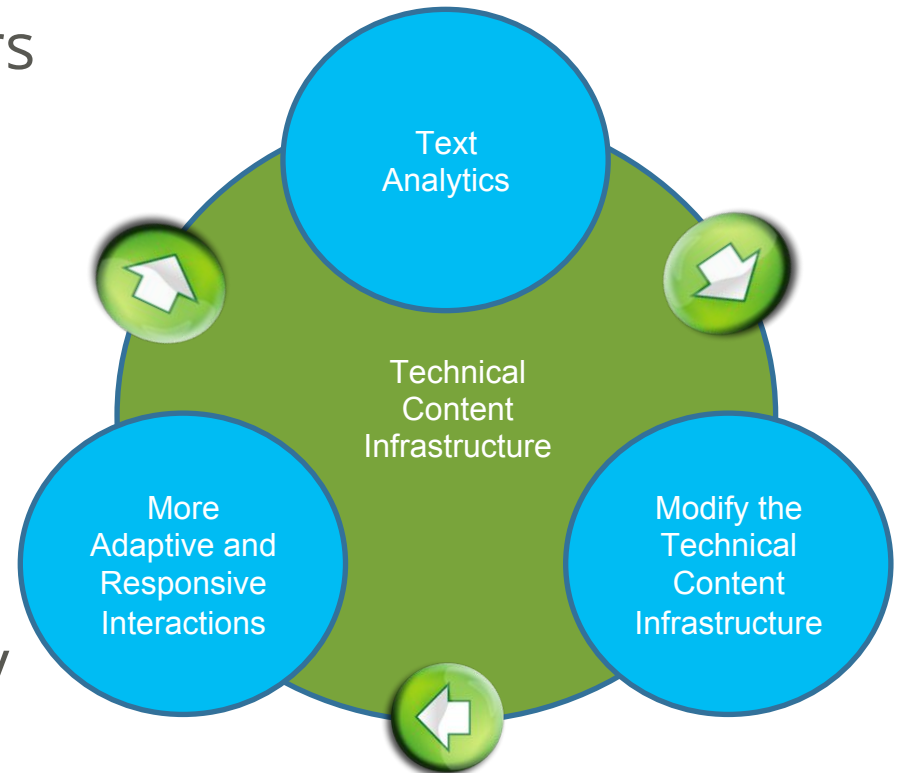
Sentiment and Trend Analysis can indicate “hot” and “cold” areas of the design/content, indicate new aspects to reflect in design.

Using related infrastructure can enable designers to quickly assess how to support those aspects with revised content, change in design

Putting it All Together

Putting it all together: BENEFITS

- Increased nimbleness in responding to customers
- Customer expectations for responsive, adaptable designs are met
- Text Analytics insights become more efficiently actionable via the infrastructure



Where We Have Been Today

- **Text Analytics Increasingly a Key Component of An Organization's Customer Responsiveness Capability**
- **A Technical Content Infrastructure Will Enable Effective and Efficient Responsiveness**
- **The Synergistic Interaction of Text Analytics and the Infrastructure**

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THANK YOU!
QUESTIONS?

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