Supporting the Information-enabled Enterprise
Re-engineering for Better Flow with Microcontent

Rob Hanna, Precision Content @CSA 2019
Rob Hanna

Co-Founder and Chief Information Architect at Precision Content

2014 STC Fellow

Voted into the Top 25 Global Content Experience Influencers for 2017

Helping our clients empower their people through better content, processes, and technology

Twitter: @singlesourceror
Session agenda

Information-enablement through intelligent microcontent

In this session, you will learn about
  ◦ microcontent principles
  ◦ Enterprise Content Metamodel, and
  ◦ microcontent structures.
What is information enablement?

The key for highly-competitive, Exponential Organizations (ExO)¹ is to reach a level of information enablement that allows them to disrupt their industries.

It is information-enablement that will drive these organizations to improve the flow of information across all areas of their business to leverage advances in artificial intelligence and omnichannel delivery – reaching all corners of their enterprise.

*This flow will necessitate the distillation of its high-value content into constituent components of microcontent that can transcend traditional content silos.*

¹ *Exponential Organizations*, by Salim Ismail, Michael S. Malone, et al. 2014
Brief history of content
What goes around ...
... comes around

CONTENT 1.0
One-to-One

CONTENT 2.0
One-to-Many

CONTENT 3.0
Many-to-Many

CONTENT 4.0
Reach Many to Many + Machines IoT
Complexity of content grows bigger
Units of content get smaller
Volume of content grows exponentially

80% of this is Dark Data ...
Inaccessible ROT
• R – redundant
• O – obsolete, or
• T – trivial
Will Artificial Intelligence be the Answer?

How will AI make sense of our content when we can barely make sense of it ourselves?

Cover: Special Edition of TIME Magazine
Editor: Nancy Gibbs, 2017
Available on newsstands
Robots writing fake news

In mid-February 2019, researchers at the OpenAI project unveiled an AI-driven deep learning application that can make up stories that could pass for human-authored content.

The OpenAI team says their system
  ◦ sets a record for performance on Winograd schemas
  ◦ achieves near-human performance on the Children’s Book Test, and
  ◦ generates its own text, including highly convincing news articles and Amazon reviews.

“Due to our concerns about malicious applications of the technology, we are not releasing the trained model”, OpenAI blogged.

While many of the apparent short-comings of the demo appeared to be minor for an early demonstration of the technology, one stood out above the others – it could not research stories on its own – it had no capacity to determine what was real.

¹An AI helped us write this article, Kelsey Piper, Feb 14, 2019
Companies that can leverage AI to increase the speed and precision of the flow of information are ushering in the next industrial revolution.

Wes O’Donnell - Managing Editor, InCyberDefense - August 15, 2019
Microcontent

Is content that is
• about one primary idea, fact, or concept
• easily scannable
• labelled for clear identification and meaning, and
• *appropriately written* and formatted for use anywhere and any time it is needed.

It’s not microcontent just because it’s small
Microcontent as a medium for exchange

Microcontent is not strictly an input nor an output format. Instead, microcontent is a medium for exchanging information across different platforms and formats.

Units of microcontent need to contain
◦ piece of standalone content, and
◦ metadata records.

Content and metadata need to be automatically extracted at publishing time.
Content as a Service (CaaS)

Content as a service is a service-oriented model where the service provider hosts collections of content in the cloud and delivers the content on demand to the service consumer via web services.

This serves as a centralized repository where content has been optimized for delivery against any number of source formats. The content and associated metadata are extracted and normalized so that other services can more readily consume that content on demand.

CaaS is more commonplace in content marketing where content is served via subscription.

The CaaS model is well suited meet the needs of
- mobile apps
- omnichannel publishing, and
- conversational UIs.
Four Principles of Intelligent Microcontent

1. **Focus**
   Limit microcontent to a single answer to a question

2. **Function**
   Classify microcontent to identify intended user response

3. **Structure**
   Use predictable patterns and language

4. **Context**
   Make microcontent easily relatable to other content
Focus

Microcontent must be about only one thing
Unpacking information

As professional writers, we tend to want to pack information into small spaces. Does this have an impact on machines and humans wanting to unpack that information?
Topic architecture

Consider what happens if we focus on writing at the block-level within topics.

The short description supports the title of the topic as a block.

Every block is an information type supporting the topic.
## Difference between topics and blocks

<table>
<thead>
<tr>
<th>TOPICS</th>
<th>BLOCKS (MICROCONTENT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All content is authored, reviewed, and approved as a topic</td>
<td>All content exists inside blocks contained within topics</td>
</tr>
<tr>
<td>Topics represent individual files that are versioned and uniquely identified</td>
<td>Blocks are virtual as part of a topic or referenced by a topic</td>
</tr>
<tr>
<td>Topics consist of one or more blocks</td>
<td>Blocks exist in one or more topics</td>
</tr>
<tr>
<td>Topics represent a unit of work</td>
<td>Blocks are a medium for interchange</td>
</tr>
<tr>
<td>Topics can be reduced to a block</td>
<td>Blocks can be expanded to a topic</td>
</tr>
<tr>
<td>Topics are suitable for publishing to print and online as pages</td>
<td>Blocks are suitable for publishing to chatbots and automated assistants as responses</td>
</tr>
</tbody>
</table>
Function

Microcontent must be categorized to identify user intent
Information is what information does
Making a Cup of tea

What is the ... **Intended Reader Response?**

- **1st Person, past tense**
  ... to engage you in a story about tea.

- **3rd Person, present tense**
  ... to describe to you how tea is made.

- **2nd Person, present tense**
  ... to instruct you on how to make tea.
Precision Content information types

**Reference**
- DESCRIBES things the reader needs to KNOW

**Task**
- INSTRUCTS the reader on how to PERFORM steps to get things done

**Concept**
- EXPLAINS things the reader needs to COMPREHEND

**Process**
- ILLUSTRATES things the reader needs to UNDERSTAND about how things work, and

**Principle**
- ADVISES the reader about what they need TO DO or NOT DO and WHEN.
# Information Typing Informs Intent

<table>
<thead>
<tr>
<th>Concept</th>
<th>Example</th>
<th>What is a...?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Definition</td>
<td>What is important about...?</td>
</tr>
<tr>
<td></td>
<td>Contrast</td>
<td>What’s the difference between...?</td>
</tr>
<tr>
<td>Task</td>
<td>Steps</td>
<td>How do I...?</td>
</tr>
<tr>
<td></td>
<td>Resolution</td>
<td>What is the outcome of...?</td>
</tr>
<tr>
<td>Reference</td>
<td>Result</td>
<td>What is this about?</td>
</tr>
<tr>
<td></td>
<td>Outcome</td>
<td>What does it do?</td>
</tr>
<tr>
<td></td>
<td>Purpose</td>
<td>What are the facts of...?</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>Process</td>
<td>Stages</td>
<td>Why am I performing this task?</td>
</tr>
<tr>
<td></td>
<td>When/Then</td>
<td>Who performs this task?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>How does this work?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What happens when...?</td>
</tr>
<tr>
<td>Principle</td>
<td>Applicability</td>
<td>What must I do if...?</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>What must I not do if...?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>When must I...?</td>
</tr>
</tbody>
</table>
Structure

Microcontent must use predictable patterns and language
Excerpt from a medical journal...

pN3 description only closely mirrors descriptions for pN3a + pN3b + pN3c

Use of footnotes confusing

“Clinically detected” and “Not clinically detected” are not exact opposites, and

Inconsistent enumeration of lymph nodes

pN3 Metastases in ten or more axillary lymph nodes; or in infraclavicular (level III axillary) lymph nodes; or in clinically detected*** ipsilateral internal mammary lymph nodes in the presence of one or more positive level I, II axillary lymph nodes; or in more than three axillary lymph nodes and in internal mammary lymph nodes with micrometastases or macrometastases detected by sentinel lymph node biopsy but not clinically detected***; or in ipsilateral supraclavicular lymph nodes

pN3a Metastases in ten or more axillary lymph nodes (at least one tumor deposit greater than 2.0 mm), or metastases to the infraclavicular (level III axillary) lymph nodes

pN3b Metastases in clinically detected*** ipsilateral internal mammary lymph nodes in the presence of one or more positive axillary lymph nodes; or in more than three axillary lymph nodes and in internal mammary lymph nodes with micrometastases or macrometastases detected by sentinel lymph node biopsy but not clinically detected***

pN3c Metastases in ipsilateral supraclavicular lymph nodes

Notes:

*** Not clinically detected as defined as not detected by imaging studies (excluding lymphoschintigraphy) or not detected by clinical examination.

**** “Clinically detected” is defined as detected by imaging studies (excluding lymphoschintigraphy) or by clinical examination and having characteristics highly suspicious for malignancy or a presumed pathologic macrometastasis based on fine needle aspiration biopsy with cytologic examination.
After restructuring ...

44.2% reduction in word count
20% reduction in passive voice
18.4% increase in Flesch Reading Ease score
30% increase in white space
Elimination of footnotes, and
Addition of labels and visual elements

Metastases

The following table is used by clinicians to classify metastases found in regional lymph nodes.

<table>
<thead>
<tr>
<th>Node level...</th>
<th>Which includes...</th>
<th>Describes metastases found in...</th>
</tr>
</thead>
<tbody>
<tr>
<td>pN3</td>
<td>pN3a</td>
<td>10 or more axillary lymph nodes where at least one deposit is greater than 2.0 mm. any number of infraclavicular (level III axillary) lymph nodes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>any number of ipsilateral internal mammary lymph nodes detected by clinical exam fine needle aspiration biopsy, or imaging study, and any number of level I or II axillary lymph nodes.</td>
</tr>
<tr>
<td>pN3b</td>
<td></td>
<td>any number of ipsilateral internal mammary lymph nodes where micrometastases or macrometastases are detected by sentinel lymph node biopsy, and 4 or more level I or II axillary lymph nodes.</td>
</tr>
<tr>
<td>pN3c</td>
<td>Any number of ipsilateral supraclavicular lymph nodes.</td>
<td></td>
</tr>
</tbody>
</table>
What’s behind the content

With specially-designed XML markup, machines can now easily parse this content into any number of types of healthcare applications.

Content is human- and machine-ready!

Specialized DITA XML identifies the specific values laid out in the previous table:

```xml
<cs-tmn-categories>
  <cs-tmn-category>pN3</cs-tmn-category>
  <cs-tmn-subcat>pN3a</cs-tmn-subcat>
    <cs-tmn-criteria>10 or more axillary lymph nodes where at least one deposit is greater than 2.0mm</cs-tmn-criteria>
    <cs-tmn-criteria>any number of infraclavicular (level III axillary) lymph nodes.</cs-tmn-criteria>
  <cs-tmn-subcat>pN3b</cs-tmn-subcat>
    <cs-tmn-criteria>any number of ipsilateral internal mammary lymph nodes detected by ...</cs-tmn-criteria>
</cs-tmn-categories>
```
Context

Microcontent must be easily relatable to other content
Context from the source
Our content ecosystem

Content objects exist in an ecosystem where changes to one type of content prompt changes to other related content.
Microcontent publishing
WittyParrot stores content and metadata in containers called Wits.

Content can authored or loaded from Office documents or DITA content using our WittyDITA plug-in.

These Wits become searchable and servable across many channels such as:
- Chatbots
- Microsites
- Office 365
- Dynamics
- SalesForce, and more.
Render as a microsite
A diagram is a specific type of graphic reference that shows the parts of something in the context of the whole item.

This figure illustrates the parts of a tree.

The four most common elements in the Earth's mass are:
1. iron
2. oxygen
3. silicon
4. magnesium

In this list, the items are placed in descending order by mass.
CONSTRUCTING PARAGRAPHS

- Paragraphs should always pertain to the same main agent.
- Sentences in a paragraph should be held together by providing a link or reference to the sentences that came before.
- Avoid long paragraphs containing more than 7 sentences. A single sentence can be presented as a paragraph.
- Do not use bulleted lists to present paragraphs.
Our journey towards microcontent is simply the next step in the evolution of intelligent content needed to support omnichannel delivery.
Microcontent will change how we work with information

Create and publish microcontent to your enterprise to improve usability and precision of your content, and future-proof your content for what lies ahead.

See your high-value microcontent published by Sales and marketing, Learning and development, and Technical publications.

The technology is coming. It won’t slow down, and it won’t solve this on its own.
We can either learn how to write for both bots and humans or miss out on a transformational opportunity for our profession.

DO YOU SPEAK ROBOT?

The robots are coming
Questions?

Rob Hanna
Chief Information Architect
rob@precisioncontent.com

Precision Content
www.precisioncontent.com
@singlesourceror

Ask me about ...

- Information Architecture
- Content Strategy
- Content Transformation
- Skills Training
- Publishing Technologies

@PCASinc