Untangling the Spaghetti

Robert Johnson

Senior Content Strategist, Tahzoo

Boston DITA Users Group

December 14, 2022

About Bob Johnson

- Technical writer/content strategist for 25 years in various sectors
- Worked with component content and content management for more than 20 years
- Worked with DITA since 2006
- Managed several component content/DITA migrations and CCMS implementations
- Currently
  - Senior Content Strategist at Tahzoo
  - Co-facilitator, Boston DITA Users Group
- Contact information
  - Email: rlj@cliostechscribe.com
  - Twitter: @cliostechscribe

T.

How it started

```xml
<concept id="concept_acl_4zw_btb">
    <title>Customer support contact information</title>
    <shortdesc>Contact &lt;placeholder> when you need help with your device.</shortdesc>
    <conbody>
        <p></p>
        <note id="note_dc5_szw_btb" type="important">Periodic maintenance of your device is required
            and is part of your contract. Contact our customer support team to schedule your
            periodice maintenance.</note>
        <p>U.S. phones are staffed between 3 A.M. and 10 P.M. Pacific Time </p>
        <table frame="none" rowsep="1" colsep="1" id="table_x51_b1x_btb">
            <title>Contact information</title>
            <tgroup cols="2" align="left">
                <colspec colname="c1" colnum="1" colwidth="1*"/>
                <colspec colname="c2" colnum="2" colwidth="1*"/>
                <tbody>
                    <row audience="us">
                        <entry>
                            <p>Device Company, Inc.</p>
                            <p>118 Metacom Mile</p>
                            <p>Lakeville, MA 02347</p>
                            <p><b>Phone</b>: 774.555.1545</p>
                        </entry>
                        <entry></entry>
                    </row>
                    <row audience="eu">
                        <entry>
                            <p>Device Company, Inc.</p>
                            <p>118 Metacom Mile</p>
                            <p>Lakeville, MA 02347</p>
                            <p><b>Phone</b>: 774.555.1545</p>
                        </entry>
                        <entry>
                            <p>Device Company, NV</p>
                            <p>Broekweg 511b,</p>
                            <p> 6371 ND, Poffertwijk, Groningen</p>
                            <p>Netherlands</p>
                        </entry>
                    </row>
                </tbody>
            </tgroup>
        </table>
    </conbody>
</concept>
```

T.

Then it got a little complicated

```xml
<conbody>
    <p></p>
    <note id="note_dc5_szw_btb" type="important">Periodic maintenance of your device is required
        and is part of your contract. Contact our customer support team to schedule your
        periodice maintenance.</note>
    <p audience="us eu">U.S. phones are staffed between 3 A.M. and 10 P.M. Pacific Time </p>
    <p audience="jp">Phones are staffed between 9 A.M. and 7 P.M.</p>
    <table frame="none" rowsep="1" colsep="1" id="table_x51_b1x_btb">
        <title>Contact information</title>
        <tgroup cols="2" align="left">
            <colspec colname="c1" colnum="1" colwidth="1*"/>
            <colspec colname="c2" colnum="2" colwidth="1*"/>
            <tbody>
                <row audience="us">
                    <entry>
                        <p>Device Company, Inc.</p>
                        <p>118 Metacom Mile</p>
                        <p>Lakeville, MA 02347</p>
                        <p><b>Phone</b>: 774.555.1545</p>
                    </entry>
                    <entry></entry>
                </row>
                <row audience="eu">
                    <entry>
                        <p>Device Company, Inc.</p>
                        <p>118 Metacom Mile</p>
                        <p>Lakeville, MA 02347</p>
                        <p><b>Phone</b>: 774.555.1545</p>
                    </entry>
                    <entry>
                        <p>Device Company, NV</p>
                        <p>Broekweg 511b,</p>
                        <p> 6371 ND, Poffertwijk, Groningen</p>
                        <p>Netherlands</p>
                        <p><b>Pnone:</b> +31 0667484211</p>
                    </entry>
                </row>
                <row audience="jp">
                    <entry>
                        <p>70510 翼Knolls </p>
                        <p>188-7462.</p>
                        <p>南杏町, 大分県</p>
                        <p><b>Phone</b>: +81653315284</p>
                    </entry>
                    <entry></entry>
                </row>
            </tbody>
        </tgroup>
    </table>
</conbody>
```

T.

Then it turned into spaghetti

```
<conbody>
    <p audience="us eu">Cras eu risus placerat, sollicitudin nulla sed, consectetur dui.
        Curabitur maximus justo vel placerat gravida. Sed vitae erat in augue tristique lacinia
        in vitae lectus. In eu nisl lectus. In sit amet est non ligula vulputate pellentesque
        sed vitae mauris.</p>
    <p><ph audience="zh-CN ko">Lorem ipsum dolor sit amet, consectetur adipiscing elit.</ph><ph
        audience="ko"> Pellentesque tristique orci nisi, posuere suscipit velit varius
        eget.</ph> Curabitur vitae risus vulputate, ultrices dolor eu, tristique erat.<ph
        audience="jp">Quisque cursus ultrices augue, id fermentum mi sodales molestie. Sed
        malesuada nunc eget ipsum aliquam convallis.</ph></p>
    <note id="note_dc5_szw_btb" type="important">Periodic maintenance of your device is required
        and is part of your contract. Contact our customer support team to schedule your
        periodic maintenance.</note>
    <p>Vestibulum vitae erat a sem dapibus placerat at vel magna. <ph audience="us eu"
        >Vestibulum ac magna mollis, porta velit quis, auctor elit. <ph audience="us">Nulla
            vestibulum, felis sit amet ultricies varius, mi lacus egestas arcu, quis
            pulvinar ante mauris posuere libero.</ph></ph>
        <ph audience="zh-CN">Quisque cursus ultrices augue, id fermentum mi sodales molestie.
            Sed malesuada nunc eget ipsum aliquam convallis. Morbi ut lacus vitae augue bibendum
            auctor a vel lacus. Sed auctor gravida lacus id aliquet.</ph></p>
    <p>Duis ut turpis lobortis, cursus tellus at, consequat ipsum. libero metus eleifend tellus,
        in hendrerit orci est commodo risus. <ph audience="us eu">Nullam in dui a nunc volutpat
            hendrerit ut id purus. Ut feugiat mi a tortor tempus, quis scelerisque velit
            consequat. Praesent ac blandit velit. Aliquam rhoncus, ipsum quis egestas
            pellentesque, </ph>
        <ph audience="us zh-CN">Fusce eu risus elementum, molestie dolor quis, lacinia arcu.
            Quisque vel tortor sit amet diam luctus bibendum. Cras placerat ligula non erat
            malesuada, at tincidunt sapien elementum.</ph>
        <ph audience="jp">Vestibulum consectetur elit ut ultricies venenatis. Phasellus
            vulputate condimentum varius.</ph>
        <ph audience="jp ko zh-TW">Quisque pulvinar ipsum at leo vulputate, suscipit faucibus
            dolor gravida. <ph audience="jp ko">Integer libero nisl, ullamcorper ut risus sit
                amet, pulvinar imperdiet arcu. Suspendisse porta orci non imperdiet
                pretium.</ph></ph>
        <ph audience="sh-SG zh-CN">Integer gravida orci magna, vel egestas neque tincidunt
            vitae. Phasellus non vehicula turpis.</ph></p>
    <p audience="us eu zh_TW">U.S. phones are staffed between 3 A.M. and 10 P.M. Pacific Time </p>
    <p audience="jp">Phones are staffed between 9 A.M. and 7 P.M.</p>
    <p audience="ko">Phones are staffed between 8 A.M. and 8 P.M.</p>
    <p audience="zh-CN">Phones are staffed between 10 A.M. and 9 P.M.</p>
    <p audience="zh-sg">Phones are staffed between 9 A.M. and 5 P.M.</p>

...
```

Problems

- Complicated DITAVALs for profiling.
    - Combination of includes and excludes.
    - Difficult to keep track of how each phrase element will be handled .

- Challenging to author.
    - Difficult to keep track of which content will be published to what output.
    - Difficult for authors to visualize how they are supposed to mark up content.

A near miss

- Validation of deliverables revealed missing content.
    - Some content incorrectly marked up.
    - Some profiling was incorrect as well.
- This could potentially have turned into a serious regulatory problem.
    - You do not want problems with regulatory authorities!

T.

Untangling the spaghetti

- Identify what is common content, included in all instances.
  - Title
  - Short description
  - Some snippets of text
- Identify what is shared by multiple instances, but not all.
  - Snippets of text
- Identify what is specific to particular instances (markets).
  - Addresses/phone numbers
  - Snippets of text.
- Use content references (conrefs) to incorporate shared content.

T.

Libraries for conref content

- Content references (conrefs) are simply Universal Resource Identifiers (URIs)
    - Point to file that contains re-use element, and to the re-use element itself.
- Unmanaged use of conrefs leads to a different spaghetti code problem!
- To avoid conref spaghetti code, good practice is to organize re-use elements into warehouses or libraries.
- Example libraries:
    - c_lib_us_concept_elements.dita
    - c_lib_eu_concept_elements.dita
    - c_lib_jp_concept_elements.dita
    - c_lib_us_eu_shared_concept_elements.dita
    - c_lib_us_CN_shared_concept_elements.dita
    - c_lib_CN_ko_shared_concept_elements.dita

T.

The role of keys in untangling the spaghetti

- Review: keys are an abstraction mechanism for addresses.

- Direct addressing: content reference in topic
    - <p conref="../libraries/c_lib_us_concept_elements.dita#concept_fs2_k5t_vsb/phone_hours">

- Key
    - Topic
        - <p conkeyref="contact_library/phone_hours">
    - Key definitions in Maps
        - US contact_library key
            - <keydef keys="contact_library" href="../c_lib_us_concept_elements.dita"/>
        - EU contact_library_key
            - <keydef keys="contact_library" href="../c_lib_eu_concept_elements.dita"/>
        - Japan contact library key
            - <keydef keys="contact_library" href="../c_lib_jp_concept_elements.dita"/>

T.

Two options to rebuild instances

- One customer contact information topic with common content
    - Conref in content for each market
    - This option is most effective if the re-use elements are the same across the different markets, only the specific values are different.
    - If you have overlapping profiled elements, this option is not as effective.
        - This option only simplifies profiling.
        - Be careful you don't recreate the spaghetti!
- Customer contact information topic for each market
    - Each market topic includes content specific to that market.
    - Common content is included by content reference.
    - Content shared by multiple markets is also included by content reference.
    - This is the best option for overlapping re-use.
        - Each individual topic conrefs the appropriate content.

Demo: US topic code

```xml
<concept id="concept_acl_4zw_btb">
    <title conkeyref="common_shared_content/title_vw4_mjs_2tb"/>
    <shortdesc conkeyref="common_shared_content/shortdesc_x4h_y3s_2tb"/>
    <conbody>
        <p conkeyref="us-eu_shared_keys/p_bjk_lbs_2tb"/>
        <note conkeyref="common_shared_content/note_dc5_szw_btb" id="note_srw_4ls_2tb"/>
        <p>Vestibulum vitae erat a sem dapibus placerat at vel magna. <ph
            conkeyref="us-eu_shared_keys/ph_ghf_jds_2tb"/>Nulla vestibulum, felis sit amet
            ultricies varius, mi lacus egestas arcu, quis pulvinar ante mauris posuere libero. </p>
        <p>Duis ut turpis lobortis, cursus tellus at, consequat ipsum. libero metus eleifend tellus,
            in hendrerit orci est commodo risus. <ph conkeyref="us-eu_shared_keys/ph_gvd_m2s_2tb"/>
            <ph conkeyref="us_zh-CN_shared_content/ph_ewg_djz_2tb"/></p>
        <p conkeyref="us-eu_shared_keys/p_x5w_lbs_2tb"/>
        <table frame="none" rowsep="1" colsep="1" id="table_x51_b1x_btb">
            <title>Contact information</title>
            <tgroup cols="2" align="left">
                <colspec colname="c1" colnum="1" colwidth="1*"/>
                <colspec colname="c2" colnum="2" colwidth="1*"/>
                <tbody>
                    <row audience="us">
                        <entry>
                            <p>Device Company, Inc.</p>
                            <p>118 Metacom Mile</p>
                            <p>Lakeville, MA 02347</p>
                            <p><b>Phone</b>: 774.555.1545</p>
                        </entry>
                        <entry></entry>
                    </row>
                </tbody>
            </tgroup>
        </table>
    </conbody>
</concept>
```

T.

Demo: Keys for US document

Common keys:

```
<map>
    <title>common_keys</title>
    <keydef keys="common_shared_content" href="c_lib_common_shared_content.dita"/>
</map>
```

US/EU keys:

```
<map>
    <title>US/EU keys</title>
    <keydef keys="us-eu_shared_keys" href="c_lib_us_eu_shared_concept_library.dita"/>
</map>
```

US/zh-CN keys:

```
<map>
    <title>US/zh-CN keys</title>
    <keydef keys="us_zh-CN_shared_content" href="c_lib_zh-CN_shared_concept_library.dita"/>
</map>
```

T.

Demo: US map

```xml
<map>
    <title>device_user_guide</title>
    <mapref href="us_zh-CN_keys.ditamap"/>
    <mapref href="common_keys.ditamap" format="ditamap"/>
    <mapref href="us_eu_keys.ditamap" format="ditamap"/>
    <topicref href="contact_support_contact_information_us.dita"/>
</map>
```

Demo: US topic: resolved

concept › title ›

Customer support contact information ‹title

shortdesc ›

Short Description: Contact Device Company customer support when you need help with your device. ‹shortdesc

conbody › p ›

Cras eu risus placerat, sollicitudin nulla sed, consectetur dui. Curabitur maximus justo vel placerat gravida. Sed vitae erat in augue tristique lacinia in vitae lectus. In eu nisl lectus. In sit amet est non ligula vulputate pellentesque sed vitae mauris. ‹p

note ›

⚠ **Important:** Periodic maintenance of your device is required and is part of your contract. Contact our customer support team to schedule your periodice maintenance. ‹note

p › Vestibulum vitae erat a sem dapibus placerat at vel magna. ph › Vestibulum ac magna mollis, porta velit quis, auctor elit. ‹ph Nulla vestibulum, felis sit amet ultricies varius, mi lacus egestas arcu, quis pulvinar ante mauris posuere libero. ‹p

p › Duis ut turpis lobortis, cursus tellus at, consequat ipsum. libero metus eleifend tellus, in hendrerit orci est commodo risus. ph › Nullam in dui a nunc volutpat hendrerit ut id purus. Ut feugiat mi a tortor tempus, quis scelerisque velit consequat. Praesent ac blandit velit. Aliquam rhoncus, ipsum quis egestas pellentesque, ‹ph ph › Fusce eu risus elementum, molestie dolor quis, lacinia arcu. Quisque vel tortor sit amet diam luctus bibendum. Cras placerat ligula non erat malesuada, at tincidunt sapien elementum. ‹ph ‹p

p ›

U.S. phones are staffed between 3 A.M. and 10 P.M. Pacific Time. ‹p

T.

Demo: EU topic code

```
<concept id="concept_acl_4zw_btb">
  <title conkeyref="common_shared_content/title_vw4_mjs_2tb"/>
  <shortdesc conkeyref="common_shared_content/shortdesc_x4h_y3s_2tb"/>
  <conbody>
    <p conkeyref="us-eu_shared_keys/p_bjk_lbs_2tb"/>
    <note id="note_dc5_szw_btb" type="important">Periodic maintenance of your device is required
      and is part of your contract. Contact our customer support team to schedule your
      periodice maintenance.</note>
    <p>Vestibulum vitae erat a sem dapibus placerat at vel magna.<ph
      conkeyref="us-eu_shared_keys/ph_ghf_jds_2tb"/></p>
    <p>Duis ut turpis lobortis, cursus tellus at, consequat ipsum. libero metus eleifend tellus,
      in hendrerit orci est commodo risus. <ph conkeyref="us-eu_shared_keys/ph_gvd_m2s_2tb"/>
    <ph audience="us zh-CN">Fusce eu risus elementum, molestie dolor quis, lacinia arcu.
      Quisque vel tortor sit amet diam luctus bibendum. Cras placerat ligula non erat
      malesuada, at tincidunt sapien elementum.</ph>
    </p>
    <p conkeyref="us-eu_shared_keys/p_x5w_lbs_2tb"/>
    <table frame="none" rowsep="1" colsep="1" id="table_x51_b1x_btb">
      <title>Contact information</title>
      <tgroup cols="2" align="left">
        <colspec colname="c1" colnum="1" colwidth="1*"/>
        <colspec colname="c2" colnum="2" colwidth="1*"/>
        <tbody>
          <row>
            <entry>
              <p>Device Company, Inc.</p>
              <p>118 Metacom Mile</p>
              <p>Lakeville, MA 02347</p>
              <p><b>Phone</b>: 774.555.1545</p>
            </entry>
            <entry>
              <p>Device Company, NV</p>
              <p>Broekweg 511b,</p>
              <p>6371 ND, Poffertwijk, Groningen</p>
              <p>Netherlands</p>
              <p><b>Pnone:</b> +31 0667484211</p>
            </entry>
          </row>
        </tbody>
      </tgroup>
    </table>
  </conbody>
```

T.

Demo: Keys for EU document

Common keys:

```
<map>
   <title>common_keys</title>
   <keydef keys="common_shared_content" href="c_lib_common_shared_content.dita"/>
</map>
```

US/EU keys:

```
<map>
   <title>US/EU keys</title>
   <keydef keys="us-eu_shared_keys" href="c_lib_us_eu_shared_concept_library.dita"/>
</map>
```

T.

Demo: EU map

```
<map>
    <title>device_user_guide</title>
    <mapref href="common_keys.ditamap" format="ditamap"/>
    <mapref href="us_eu_keys.ditamap" format="ditamap"/>
    <topicref href="contact_support_contact_information_eu.dita"/>
</map>
```

Demo: EU topic resolved

Demo: Japan topic code

```xml
<concept id="concept_acl_4zw_btb">
    <title conkeyref="common_shared_content/title_vw4_mjs_2tb"/>
    <shortdesc conkeyref="common_shared_content/shortdesc_x4h_y3s_2tb"/>
    <conbody>
        <note conkeyref="common_shared_content/note_dc5_szw_btb" id="note_xwl_5qg_ftb"/>
        <p>Vestibulum vitae erat a sem dapibus placerat at vel magna. </p>
        <p>Duis ut turpis lobortis, cursus tellus at, consequat ipsum. libero metus eleifend tellus,
            in hendrerit orci est commodo risus. Vestibulum consectetur elit ut ultricies venenatis.
            Phasellus vulputate condimentum varius. <ph
                conkeyref="jp-ko-zh-TW_shared_library/ph_dcp_grg_ftb"/><ph
                conkeyref="jp-ko_shared_library/ph_at2_krg_ftb"/>
        </p>
        <table frame="none" rowsep="1" colsep="1" id="table_x51_b1x_btb">
            <title>Contact information</title>
            <tgroup cols="2" align="left">
                <colspec colname="c1" colnum="1" colwidth="1*"/>
                <colspec colname="c2" colnum="2" colwidth="1*"/>
                <tbody>
                    <row audience="jp">
                        <entry>
                            <p>Device Company G.K.</p>
                            <p>70510 翼Knolls </p>
                            <p>188-7462, </p>
                            <p>南杏町, 大分県</p>
                            <p><b>Phone</b>: +81653315284</p>
                        </entry>
                        <entry></entry>
                    </row>
                </tbody>
            </tgroup>
        </table>
    </conbody>
</concept>
```

Demo: Keys for Japan document

Common keys:

```xml
<map>
    <title>common_keys</title>
    <keydef keys="common_shared_content" href="c_lib_common_shared_content.dita"/>
</map>
```

Japan keys:

```xml
<map>
    <title>Japan keys</title>
    <keydef keys="jp-ko-zh-TW_shared_library" href="c_lib_jp_ko__zh-TW_shared_concept_library.dita"/>
    <keydef keys="jp-ko_shared_library" href="c_lib_jp_ko_shared_concept_library.dita"/>
</map>
```

T.

Demo: Japan map

```
<map>
    <title>device_user_guide</title>
    <mapref href="common_keys.ditamap" format="ditamap"/>
    <mapref href="jp_keys.ditamap" format="ditamap"/>
    <topicref href="contact_support_contact_information_jp.dita"/>
</map>
```

Demo: Japan topic resolved

Lessons learned

- Plan your re-use strategy before you begin implementing DITA.
    - Audit your content.
    - Identify content that exists in multiple places and can be re-used.
    - Plan your re-use strategy.
    - When to use profiling versus when to use content references.
- Plan and strategize when you encounter a problem!
    - A quick and dirty solution to an immediate problem can easily turn into a bigger problem down the road.
    - Planning up front avoids potential disasters later!

T.

Thank you!

Contact information

Bob Johnson

- Email: rlj@cliostechscribe.com
- Twitter: @cliostechscribe

T.