AI Chatbots: Just another channel?

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Unify your content flows

Photo by Andy Kelly on Unsplash
Noz Urbina, Founder

- Content strategist and modeller
  - 17 years experience in structured content solutions with focus on adaptive and omnichannel strategies

- Author
  - “Content Strategy: Connecting the dots between business, brand, and benefits” (thecontentstrategybook.com)

- Lecturer
  - Content Strategy programme at the University of Applied Sciences, Graz, Austria
Our Mission

We help organisations have the kind of relationships with people that people have with each other.
So Noz, tell me about Chatbots

Types & Terms

The Content Connection

Architectures & implementation

Conclusion: Just another channel?
So Noz, what’s a chatbot?

Key concepts

- Conversational UI
- Intent
- Parameter (aka “Slot”) 
- Entity
- Payload
- Context
- Prompt
- Grammar
- Modality
- Cliff
- NLP
- AI types
Conversational interfaces

- Chatbots
- Personal assistants
- Voice control UIs
- Hybrids

Interaction “Modalities”

See also: Cheryl Platz, Senior Designer, worked on Amazon Echo & Microsoft Cortana
www.cherylplatz.com
Conversational interfaces

User asks/enters:
“What’s the temperature?”

Bot says:
“The temperature right now in Valencia is 23”

Intent = {Get Weather} within Grammar of known commands

Parameter Slot {city}, Slot type = city Entity

Slot {temp}, Slot type = “temperature in C”

Voice modality

Text modality

Payload

Prompt

Context (assumed from GPS)

Human

Machine
Conversational interfaces

User asks/enters: "What’s the temperature?"

Bot says: "The temperature right now in Valencia is 23"

• Between request and response, the bot either recognises a specific command from a pre-defined “Grammar” or uses Natural Language Processing (NLP) to parse the input to determine the Intent
Conversational interfaces

User asks/enters:  
“What’s the temperature?”

Bot says:  
“The temperature right now in Valencia is 23”

- A Grammar can have alternate phrasings, e.g. the “Get Weather” intent could accept both “What is the weather like” and “What’s the temperature”, **without using NLP**
Conversational interfaces

User asks/enters:  Bot says:

“What’s the temperature?”  “The temperature right now in Valencia is 23”

• When a bot is unable to answer within its current modality and is forced to make the user switch, this is referred to as a “cliff”
AI: not all chatbots have it.

Machine learning is where NLP and algorithms allow an AI to be trained and improve in a semi-guided way. One of the techniques includes “Decision tree learning”, which isn’t the same as a simple, static, decision tree.

A (static) decision tree is one where all interactions scripted and must fall into certain sequences. The logical equivalent of a touch-tone phone interface, but driven by words. The system doesn’t learn, it’s just re-coded.
Take-aways

• Chatbot responses are based on their ability to recognise specific, supported intents
  – Using NLP allows you to go beyond a limited grammar and accept a wider range of questions
  – Decision trees are a simple way to get started
    • Every task in your user task analysis could be an intent within your grammar

Special thanks to Rashmi Ramaswamy of Innovatia and her experience with Dialogflow (was API.AI)
SO NOZ, WHAT DOES THAT MEAN FOR CONTENT?
Determine a wallet number
You can retrieve a BankingSafe wallet number when the customer does not remember what it is.

When a customer comes into the branch to request their BankingSafe wallet but does not know the wallet, you can look it up and process the request.

1. Confirm that your customer actually holds a wallet with us by checking their account for the monthly storage fee.
2. If the monthly storage fee is not listed, use reports to check your customer's account for a wallet.
   1. From Fullserve, select At a Glance and the account.
   2. Select Account Details > Statistics and the account name.
   3. Select Report Type > Commission Only. You can also check Supplementary Account Information Report.
   4. Select Next. The customer's wallets currently deposited at the BankingSafe Store display. 1 Safe Custody indicates one wallet.
3. If no wallet can be located, call the BankingSafe Access Line.
User asks: “What is Omnichannel?”

Context: Seeking concept, glossary or reference

Intent: GetTermDef

Omnichannel

An omnichannel content strategy seeks to:

- Contextualise content for value-added interactions across the entire consumer journey, taking into account all channels, deliverables, and touch-points
- Help the brand speak with one voice, no matter how, when or with whom the conversation is happening
- Use channels in concert to mutually reinforce each other, making the whole greater than the sum of its parts.

This use of channels in mutually-supporting combination, as opposed to parallel, is what sets it apart from other multichannel approaches.
SO NOZ, HOW DOES CONVERSATIONAL UI FIT IN WITH MY OTHER CHANNELS?
Challenges

How does separation in content processes and platforms challenge today’s enterprises?

Marketing is getting pushed outside its comfort zone

Marketing today includes sales enablement and providing support for value-added conversations across the entirety of the customer lifecycle. Clients and evaluators are savvy and use all avenues at their disposal, including technical content. James Mathewson, Head of Search Strategies for IBM.com, says, “60% of prospects used what would usually be called ‘post-sales documentation’ material as part of their sales cycle.”

Prospects are self-serving information across the business

If marketing doesn't address the entire customer lifecycle, crossing the presales/postsales divide, then revenue opportunities will be missed and customer experience will suffer. Content of all types on all channels impacts relationships in ways we don't always anticipate.

The Harvard Business Review reported as far back as 2012 that a *Corporate Executive Board study of more than 1,400 B2B customers found that those customers completed, on an average, nearly 60% of a typical purchasing decision—reseaching solutions, ranking options, setting requirements, benchmarking pricing, and so on—before even having a conversation with a supplier.* In another study, up to 70 percent of the B2B buying decision is made based on information the buyer accesses before speaking with the sellers’ representatives. (Intercom: The Magazine of the Society for Technical Communication, May 2013 edition, page 34.)

If techcomm and marcomm content aren’t strategically aligned to support this self-research, this process remains sub-optimal.

If the content evaluators don’t find the answers they need, they are left with more opportunities to “revert to Google” or otherwise disengage, increasing the probability of re-engaging with competitive offers.
Challenges

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What’s hurting us?

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Our siloed departments are damaging customer experience

Silos between marketing and technical communication teams represent traditional separations of leadership, decision-making, funding, and strategy inside the enterprise rather than customer needs or the reality of multichannel experiences. Departmental silos are the number one killer of great customer experiences.

Fragmented systems slow us down and make us underperform

Organizations sprout management systems like mushrooms, and there’s rarely resource or time available to plan, design and build adequate integrations. Traditionally, marketing content management has really meant website content management (WCMS), with a litter of point-solutions for things like social and email which may or may not be integrated. CRM data is also often
Adaptive content is a content strategy technique designed to support meaningful, personalized interactions across all channels. It is content that is conceived, planned and developed around the customers: their context, their mood, their goals. This definition isn't device- (or even technology-) specific. Dec 24, 2014

The 5Ws of Adaptive Content: A New Look at Making Content...
www.intelligentcontentconference.com/5-ws-adaptive-content/

Adaptive Content: The Way to Your Customer's Heart
contentmarketinginstitute.com/2016/02/adaptive-content-customers/
Feb 11, 2016 - Adaptive content is a content strategy technique designed to support meaningful, personalized interactions across all channels. It is content that is conceived, planned, and developed around the customers: their context, their mood, their goals...
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Adaptive Content: The Omni-Channel Technique You Need to...
contentmarketinginstitute.com/2014/09/adaptive-content-omni-channel-technique/
Sep 19, 2014 - Adaptive content is a content strategy technique designed to support meaningful, personalized interactions across all channels. The urgency of...
The 5 Ws of Adaptive Content: A New Look at Making Content Contextually Appropriate

By Noz Urbina (@nozurbina)

Adaptive content is a content strategy technique designed to support meaningful, personalized interactions across all channels. It is content that is conceived, planned and developed around the customers: their context, their mood, their goals. This definition isn’t device- (or even technology-) specific. Adaptive content can cover all content, on all channels.

The urgency of supporting personalization that considers multiple channels is apparent from stats like this:

- 94% of businesses say personalization is key to success (Source)
Alexa, what is adaptive content?

According to “IntelligentContent.Com”, Adaptive content is a content strategy technique designed to support meaningful, personalized interactions across all channels.
Hi, I’m your virtual assistant. How can I help you?

What is adaptive content?

According to “IntelligentContent.Com”: “Adaptive content is a content strategy technique designed to support meaningful, personalized interactions across all channels.” (source)
Multi-page Medical Letters & Manual rewrites into FAQs

Quick answers (a few lines) Overview (FAQ, a few paras) Medical Letters (learning)
The PROCLAIM Study (Senan, 2015)

PROCLAIM was a multicenter, randomized, Phase 3 study comparing treatment with concurrent pemetrexed/cisplatin/thoracic radiation therapy followed by consolidation pemetrexed with concurrent etoposide/cisplatin/thoracic radiation therapy followed by consolidation with an investigator’s choice of platinum-based chemotherapy doublet (excluding pemetrexed) in patients with unresectable Stage IIIA/B non-squamous NSCLC. Figure 1 presents a schema of the study design.

**Before**

**THE PROCLAIM STUDY (SENA, 2015)**

PROCLAIM was a multicenter, randomized, Phase 3 study. The PROCLAIM study compared treatment with concurrent pemetrexed/cisplatin/thoracic radiation therapy followed by consolidation pemetrexed with concurrent etoposide/cisplatin/thoracic radiation therapy followed by consolidation with an investigator’s choice of platinum-based chemotherapy doublet (excluding pemetrexed) in patients with unresectable Stage IIIA/B non-squamous NSCLC. Figure 1 presents a schema of the study design.

**After**

**THE PROCLAIM STUDY (SENA, 2015)**

PROCLAIM was a multicenter, randomized, Phase 3 study comparing treatment with concurrent pemetrexed and etoposide radiation therapies in patients with unresectable Stage IIIA/B non-squamous NSCLC.

**Methods**

PROCLAIM was a multicenter, randomized, Phase 3 study that compared these treatments in sequence:

1. concurrent pemetrexed/cisplatin/thoracic radiation therapy
2. consolidation pemetrexed with concurrent etoposide/cisplatin/thoracic radiation therapy, and
3. consolidation with an investigator’s choice of platinum-based chemotherapy doublet (excluding pemetrexed).

Patients had unresectable Stage IIIA/B non-squamous NSCLC.

**Patients**

Patients had unresectable Stage IIIA/B non-squamous NSCLC.

Figure 1 presents a schema of the study design.

**Figure 1. PROCLAIM Study Design (Senan, 2015)**

**Abbreviations:** AUC = area under the curve; Cis = cisplatin; CR = complete response; D = day; fn = fraction; Gy = gray; iv = intravenous; NSCLC = non-small cell lung cancer; PAC = paclitaxel; PR = partial response; PS = performance status; q = every; R = randomization; RECIST = Response Evaluation Criteria in Solid Tumors; SD = stable disease; TRT = thoracic radiation therapy; Vin = vinorelbine; wks = weeks.


* Stratified for: ECOG PS (0 vs 1); PET scan staging (yes vs no); gender; and disease stage (IIIA vs IIIB).

* Patients in Arm A were supplemented with folic acid, vitamin B12, and dexanmethasone per local regulatory guidelines.
Perspectives on mark-up

**Pure structural mark-up:** Just the shape of the container for content

**Information type:** Containers describe universal base types of information

**Highly semantic:** Explicit meaning in the mark-up

---

### Section
- Title
- Para
- List
- Para

### Reference
- Title
- Section / Para
- Section / List
- Section / Para

### Overview
- Tagline
- Shortdesc
- Features
- CTA

### Study
- Title
- Shortdesc
- Methods
- Patient characteristics
Choose the right mix

Reference
@otherprops= "overview"

Reference
@otherprops= "study"

Tagline
Shortdesc
Section / List
@otherprops= "Features"
CTA

Title
Shortdesc
Section / List
@otherprops= "Methods"
Patient characteristics
Take-aways

• Chatbots will increase the need for specialisation OR judicious use of attributes added to our mark-up

• DITA-specific
  – If you’re not already carefully using short description and even abstract, start
  – Good news: If you’re in DITA, you’re (probably) much closer than you were before DITA
  – Bad news: Specialising is expensive and has some risks. Proceed with caution.
SO NOZ, WHAT DOES AN IDEAL CHATBOT INFRASTRUCTURE LOOK LIKE?
Platform

Journey Map Management

Component Authoring

Component Management

Serve & Transform

Consistency & quality

Mine & target

(DITA XML)

Measure

Ontology/Taxonomy Management

Analytics

Generic content

Everyone

Multichannel delivery

Personalised content

Scenario A

Scenario B

Scenario C

Scenario D

Language & style checking

Ontology/Taxonomy Management

Analytics

Mine & target

(DITA XML)

Measure

Consistency & quality

Ontology/Taxonomy Management

Measure

Language & style checking

Ontology/Taxonomy Management

Analytics

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(DITA XML)

Measure

Consistency & quality

Ontology/Taxonomy Management

Analytics

Mine & target

(DITA XML)

Measure
SO NOZ, WHAT DO I NEED TO DO TO PREPARE?
Top task analysis

Todo:
1. Build a comprehensive list of user tasks
2. Choose which you’ll support with bots

How to Conduct a Top Task Analysis
Jeff Sauro
http://www.measuringu.com/blog/top-tasks.php

What Really Matters: Focusing on Top Tasks
Gerry McGovern
http://www.measuringu.com/blog/top-tasks.php
Customer journey mapping

Map complex, multi-touchpoint experience to content

Align across silos around CX

Derive actionable insights & content standard improvements
Stage by stage analysis of what questions users may ask when achieving objectives.
Build or refine taxonomy

• The more you can detect about user context*, the faster you’ll be able to target the right answers

* Context = the sum total of all the user’s situational parameters
Taxonomy refinements are useful as filters on other channels too.
Domain Modelling
(ontology / knowledge graphing-lite)

Wine, Content, and Domain Models — Michael Andrews
Knowledge Graphing

• Knowledge graphs support cognitive reasoning systems, making it easier for bots to find the right content

See also:
Rainbird Cognitive Reasoning Demos
& Pool Party Semantic Management Suite

Google for:
OWL2 & SKOS standards
Improve your structures

Before

**DOSE REDUCTION RECOMMENDATIONS**

Dose adjustments at the start of a subsequent cycle should be based on maximum non-hematologic toxicity from the preceding cycle of therapy. Treatment may be delayed to allow sufficient time for recovery. Upon recovery, patients should be retreated using the guidelines in Table 5, which are suitable for using pemetrexed as a single agent or in combination with cisplatin. If patients develop a rash of at least Grade 3, treatment should be withheld until resolution to less than or equal to the patient’s pre-therapy value. Treatment should be resumed according to the guidelines in Table 5. Pemetrexed therapy should be discontinued if a patient experiences any Grade 3 or 4 rash after 2 dose reductions (Alimta Package Insert, 2013).

**Table 5. Dose Modification for Pemetrexed (Single Agent or in Combination) and Cisplatin (Alimta Package Insert, 2013)**

<table>
<thead>
<tr>
<th>Grade 3 or 4 rash*</th>
<th>Dose of Pemetrexed (mg/m²)</th>
<th>Dose of Cisplatin (mg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>75% of previous dose</td>
<td>75% of previous dose</td>
<td></td>
</tr>
</tbody>
</table>

* National Cancer Institute Common Toxicity Criteria.

Adding additional structure makes your content more future-proof; even if you can’t leverage it in applications today

After

**Dose reduction recommendations (Alimta Package Insert, 2013)**

Apply dosage reductions recommendations to Pemetrexed or both Pemetrexed and Cisplatin in equal proportions when used in combination.

1. Retreat the patient following recovery from the previous cycle of treatment.

<table>
<thead>
<tr>
<th>If the patient experienced a rash in the previous cycle that was ...</th>
<th>Then retreat the patient using ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than grade 3</td>
<td>same dose from the previous cycle.</td>
</tr>
<tr>
<td>grade 3 or 4</td>
<td>75% dose from the previous cycle.</td>
</tr>
</tbody>
</table>

2. If the patient develops a grade 3 or 4 rash during treatment in this cycle then withhold treatment until the patient recovers to at least their pre-therapy value.

<table>
<thead>
<tr>
<th>If the patient experiences a grade 3 or 4 rash during treatment ...</th>
<th>Then ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 or 2 times</td>
<td>• reduce the patient dose to 75% of the previous dose, and • resume treatment.</td>
</tr>
<tr>
<td>3 times</td>
<td>discontinue use.</td>
</tr>
</tbody>
</table>

* National Cancer Institute Common Toxicity Criteria.
General implementation tips

• A textual chatbot should consider voice restrictions, and then be expanded as needed

• All reusable content style guidelines apply
  – Voice, style and terminology consistency is vital
  – No positional language (“See below”, “In the figure to the left…”)
  – Avoid “soft dependencies”, (“As you read in chapter 2”)

• All usual innovation rules apply
  – Set realistic expectations, then meet them
  – Test first internally, then in a friendly small group of externals, then if all goes well, widely
SO NOZ, ARE CHATBOTS JUST ANOTHER CHANNEL?
Take-aways

• Yes, they should be!
  – But most organisations won’t have their content properly written
  – DITA is much closer, but most will not have used it to it’s full potential
  – Basic decision-trees with every task as an intent aren’t scalable, we need to be able to publish knowledge maps to chatbot systems

“Bots will teach us about ourselves because, in building them, we will learn more about what it really means to be human.”
- Dennis Yang
Thank you / Q & A

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