The neglected role of Knowledge in Enterprise Conversational Systems

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Business Conversations are Complex

“We communicate only what isn’t already covered by shared experience”
Conversational systems in Financial Services

100M+ client requests
10M+ subscribers
Great for checking credit score, payment
dues, account balance
Why our approach to conversational system design is all wrong?

I want to transfer some funds to another account but I did not receive the one-time password.

**CURRENT**

- Did not recognize context
- One time password
- recognized transaction
- recognized negation
- trigger workflow -> **transaction dispute**

**IDEAL**

- concepts/context
- **Account & OTP**
- concerned feature
- **transfer issue (OTP)**
- action needed
- **resolve issue on OTP**
- response
- step by step process, call to resolve
Why our approach to conversational system design is all wrong?

Can you suggest a credit card with higher cash back than my travel rewards card?

CURRENT
- confused travel rewards card with available rewards
- credit cards + rewards → trigger workflow to find the rewards in my account

IDEAL
- concepts/context: credit cards, Travel rewards card
- concerned feature: cash back
- action needed: suggest by comparison
- response: filter those with higher values
Conversational systems are imagined as purely inductive..

There is no representation of knowledge of products, services or issues;

There are no ways to connect 2 or more topics;

There is no established mechanism to reason about actions such as comparison, recommendation, issue resolution

**KNOWLEDGE** as it stands **DOES NOT PLAY A SIGNIFICANT role in conversational systems**
The major 4 platforms follow a similar script

Heavily scripted, intent focused and can’t handle complex scenarios

KNOWLEDGE as it stands DOES NOT PLAY A SIGNIFICANT role in conversational systems
State of Enterprise Knowledge Management Systems

Existing Knowledge Management systems are revolving around Document Management

- Each document has multiple versions
- Searching for information in the document is not intuitive
- Difficult to assimilate information from various formats
- It is difficult to keep one state of truth in an enterprise

Enterprises generate 100s of documents daily. Most content is redundant and unstructured
Two Worlds that don’t Talk to Each Other

Existing Knowledge Management systems are revolving around Document Management

Dysfunctional Engagement

Functional Knowledge

Confluence
Adobe
SharePoint
servicenow

Oracle

Dysfunctional Knowledge / Cognition

Functional Engagement
Designing Cognitive Enterprises

Knowledge created and enriched by conversational interfaces

Powerful Ingestion (Pdf, Doc, FAQ, URLs)

Human in the loop

Real time Conversational Engagement
Customer Case: Large US Independent Broker-Dealer

- Improve reliability and accuracy of responses
- Reduce customer call volumes
- Provide 24/7 customer service option
- Reduce training and turnover costs

**Challenges**

- **15,000 documents** in various formats and versions
- Could not **verify the credibility** of majority of the data
- Most of the Service professionals are **new** and **untrained**
- Needed to provide **different responses** to different **user** groups
Customer Case: Large US Independent Broker-Dealer

Adobe

Chatbot
Response in Context
Website

Knowledge Graph
- Account Management
  - work
- Cash Management
- wires
- Settlement
- sample topics
- Trading

SME’s in-the-loop to fill in the gaps

Real time analytics on the Knowledge graph

Private and Confidential Information