From Conversational to Cognitive Interfaces

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My 2 year old daughter @ 3:00 am this morning

Why Conversations are Interesting

Zarah: Mom, I am hungry

Mom: Would you like to have cereal?

Zarah: Yes, with milk
Beneath the Conversation

She is hungry at 3 am because she is jet lagged as we just travelled from Singapore.

Mom: Would you like to have some cereals?

Milk, cereals, baby food available, satisfies hunger, → offer milk & cereal or baby food

Offer milk & cereal, offer baby food, Zarah likes cereals → offer cereals

Deductive Reasoning

Personalisation

Conversational Context
Business Conversations are Complex

“We communicate only what isn’t already covered by shared experience”
How Conversations are Addressed Today?

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

These Platforms Emerged from the Deep learning Legacy
Towards a Conversational KMS

Knowledge created and enriched by conversational interfaces

Dialog management

User journey scripting

Intent mapping

Shared context

Reasoning

Deduction

Personalization

Strategizing

Knowledge
State of Enterprise Knowledge Management Systems

Existing Knowledge Management systems are revolving around Document Management

- Enterprises generate **100s** of documents **daily**. Most content is **redundant** and **unstructured**

- 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**
Two Worlds that don’t Talk to Each Other

Existing Knowledge Management systems are revolving around Document Management

Functional Knowledge

Dysfunctional Engagement

Functional Engagement

Dysfunctional Knowledge / Cognition
Designing Cognitive Enterprises

Knowledge created and enriched by conversational interfaces

- Powerful Ingestion (Pdf, Doc, FAQ, URLs)
- Human in the loop
- Real time Conversational Engagement
- Knowledge Centered
  - Learning
  - Prediction
  - Reasoning
Where we are in this Journey & the Future

Using knowledge to communicate with customers

Cognitive Interface
- Auto maintain consistency
- Seamless integration with KMS
- Powerful feedback loop to identify gaps
- Machine learning

Knowledge Management Systems
- Deductive Knowledge
- Ingest Documents
- Consistent Information
- Customised Extraction

Conversational Engine
Key Elements: Ability to Expand Knowledge

Enhance intent understanding through reasoning and learning

**Cognitive Reasoning** (deductive learning)
- Inference driven and relies on an existing model of the world
- Helps to incorporate customer context, user profile in intent understanding

**Deep Learning** (inductive learning)
- Example/data driven learning
- Compliments existing model of knowledge
- Great for scaling and incremental learning

Key Features of a Cognitive Interface

- Synthesise response to user questions
- Execute in-chat transactions
- Situate conversations in a context
- Handle failures elegantly
- Recommendation based on user criteria
- Respond to predictive situations
A Cognitive Interface Platform
Integrated Approach for Knowledge Management

Making full use of data in your enterprise

SYSTEMS OF RECORD
- CRM
- ERP
- ITSM

SYSTEMS OF CONTENT
- KMS
- SharePoint
- Portal

SYSTEMS OF ENGAGEMENT
- Chat
- Call center
- Web
Where we are in this Journey & Future
Towards a self evolving Knowledge Management System

- Auto maintain consistency
- Seamless integration with KMS
- Powerful feedback loop to identify gaps
- Machine learning

Deductive Knowledge
Ingest Documents
Consistent Information
Customised Extraction
Bots are Powerful, yet Conceived as Powerless

Currently viewed as point solutions

- Deployed as **point solutions** for specific purposes
- **Lack of integration** with external systems - existing KMS, CRM, etc.
- Big players are accelerating that notion, as oversimplification helps them scale faster.
- **Lack of knowledge** in big cloud players systems as it is more focused on workflows.
The State of Truth

Establishing the state of truth in an enterprise is challenging

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- It is difficult to keep **one state of truth in an enterprise**
An Ideal Knowledge Management System

Content + Engagement = Knowledge

- Accessible Information
- Simple and Easy to use
- Customisable
- Adaptable, Accept multiple formats
- Linked to other systems