QA based dialogue is pretty mature

Mature because it draws on IR and web search

Successful examples
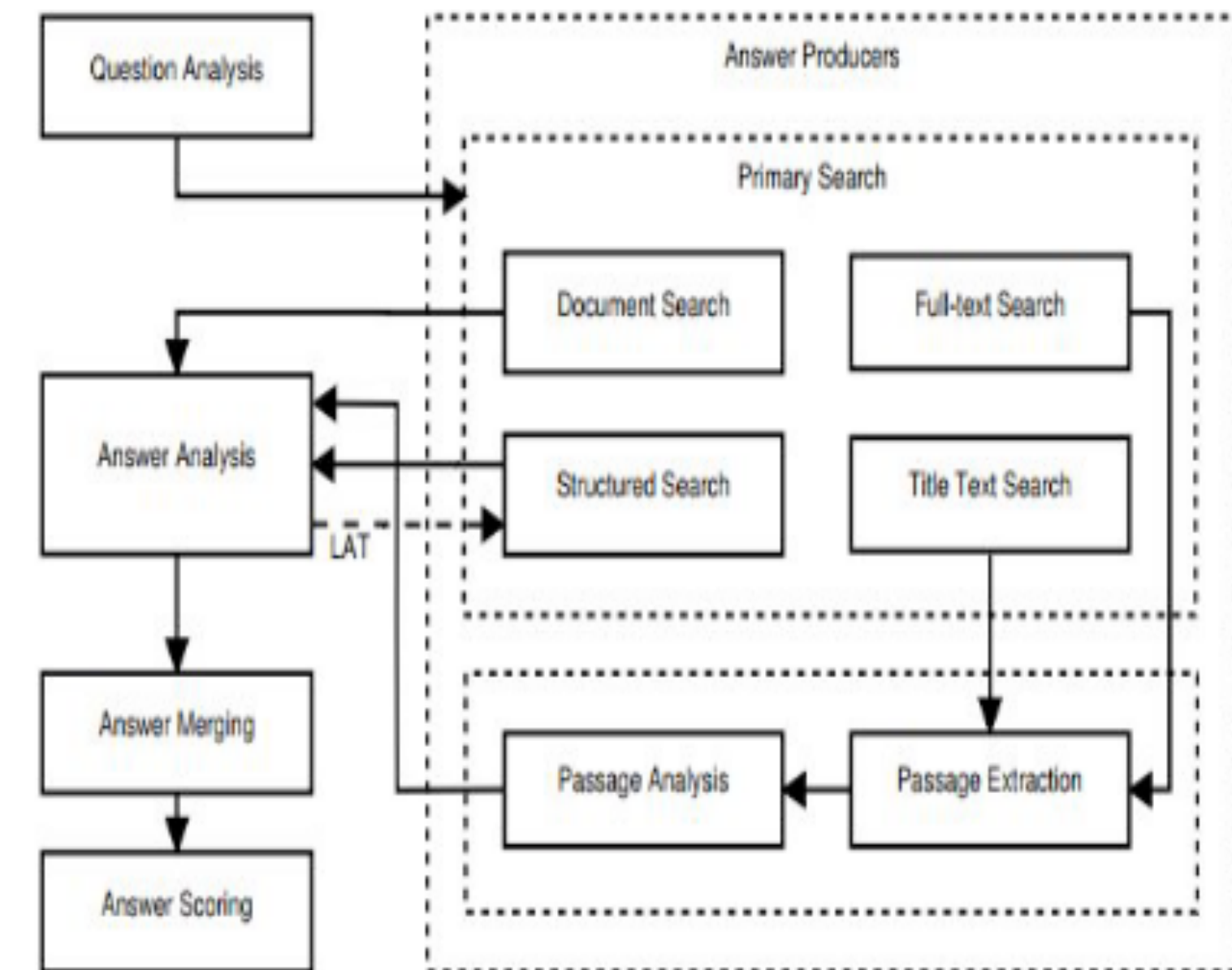   * IBM Watson
    * Google Quick Answers

Forms
    * Structured knowledge (structured query)
    * Free text knowledge (NLU)
    * Hybrid

Typical pipeline:
    * Question analysis
    * Answer (passage) production
    * Passage analysis
    * Answer scoring & merging

Knowledge bases

Natural language questions are mapped to a query language via syntactic parsing

Most knowledge bases uses relations between entities, stores *triples*

Triple:
      * Subject, predicate, object
      * Subject, property (relation), object
      * Entity, relation, entity

Popular KBs:
      * Freebase (deprecated)
      * Wikidata (new freebase)
      * DBPedia
      * YAGO