“Problem”
Traditional Information Systems & Watson

**TRADITIONAL IS**
- Organized system: collection, organization, storage and communication of information.
- Relies heavily on requirements gathering
- Relies on organized / structured data

**WATSON**
- Cognitive System: Combines Traditional IS + Natural Language Processing + QA
- Lacks clear requirements
- Analyzes inputs to determine output
- Is able to search and make sense of unstructured data

Both depend on data warehouse from which to draw their outputs
Potential Capabilities

- **Oncology**: Evidence-based treatment options (health-care)
- **Discovery Advisor**: Data + cognitive insights (business, government)
- **Assistant/Explorer**: Cognitive computing + enterprise search
- **Engagement Advisor**: Machine learning + self service (everyday decision making)

"The development of full artificial intelligence could spell the end of the human race."

- Stephen Hawking
Watson’s Decisions to Win

Watson had to decide if the questions were ones that it could answer:

◇ Does it understand the intention of the question?
◇ Jeopardy intentionally includes puns and cultural context into its questions. Watson needs to be able to analyze the speech.
◇ How much to wager on doubles: what was the probability of answering right based only on the difficulty level of the question and the category?
REQUIREMENTS
GATHERING

BUSINESS
REQUIREMENT

Surpass human
cognitive capabilities

USER
REQUIREMENTS

Goal: accept
unformatted
questions and
present answers.

SYSTEM
REQUIREMENTS

Gather information
and function
accurately
Watson’s Performance Metrics

- Watson would develop multiple answers for each question posed.
- The answer with the highest confidence score would be the presented answer.
- A level of 50% or more was used to determine whether or not the answer would be presented.
- Past Jeopardy! Champions relied on accurately answering questions.
Sources