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BEYOND “JEOPARDY!”, WILL IBM-WATSON PUT INDUSTRY EXPERTS IN JEOPARDY?

Watson, a new powerful computer from IBM research has beaten renowned champions in the TV trivia game of “Jeopardy!”. Watson’s intelligent computing architecture has been designed for deep question answering in natural language. Answers come instantly when using massively parallel processors. Going forward, the challenge for Watson will be to glean domain knowledge from unstructured information and find precise answers to complex issues with the confidence of industry experts. Innovative opportunities will stem from the combined cognition of both humans AND machines.

1. **Unstructured data:** *Watson can parse the ambiguous context and complexities of natural language, and navigate relevant information from multiple sources to then formulate and score viable hypotheses.*

→ **Opportunity:** We applaud Watson’s ability to analyze a wealth of unstructured information in real-time and make semantic sense out of disparate concepts. In addition to perfecting its knowledge base, grammars, lexicon, and domain logic, Watson should find and internalize live information on the Web.

2. **Business insights:** *Besides helping specialists build confidence, bridge information gaps, and solve problems creatively, Watson’s potential for decision support should spark business transformations.*

→ **Opportunity:** Experts may continue to educate Watson with thoughtful inference rules, clues and cues. Straightforward facts, in the open-ended context of customer service, could boost productivity and avoid the consequences of misinterpretation or misleading answers from lackadaisical contact centers.

3. **Statistical machine learning:** *Watson’s architecture can combine simultaneously many algorithms that encapsulate human reasoning. Associating diverse content analytics will build cognitive power.*

→ **Opportunity:** We believe that levels of confidence should mirror the certainty and determination of industry experts. Watson will need more and better multidisciplinary learning. To tap its potential for business ingenuity and creativity, Watson should challenge its built-in rules and findings more rationally.

4. **Machine reasoning:** *In-memory inferences allow Watson to quickly combine and spot missing elements of information. About 93% of Watson’s findings with confidence of above 95% looked right.*

→ **Opportunity:** Choice of algorithms and weights for a particular challenge must mind natural constraints such as time, space, operating condition, events, and seasons. Watson should learn to validate hypotheses and referential knowledge against common sense and actual experience.

5. **Intuition:** *Watson should also listen to, and possibly sense, human interactions to avoid nonsensical answers. As brains possess other instinctive and acquired abilities, humans can anticipate outcomes.*

→ **Opportunity:** Financial firms may tap Watson’s architecture to analyze unstructured information and enrich the predictive power of customer and risk analytics. Instant learning from streaming sources such as social networks and collaboration platforms, coupled with intuitive logic, will open new frontiers.