Introduction and contents
During our session, the IBM Watson Commercialization team will discuss leveraging the open-domain question and answer technology (DeepQA) that was proved on Jeopardy! for applications within the Financial Services industry. IBM will present an overview of this innovative technology and outline Financial Services use cases and related content requirements.

Context
Due to changing market conditions, Financial Services firms are recognizing and focusing on the need to leverage the wealth of available information to drive value creation (e.g. detect and capitalize on alpha signals) and cost reduction (e.g. manage market and operational risk). Attempts to drive business value and gain a competitive advantage, however, have been marginalized due to the staggering volumes of data, increasing growth of new information sources and challenges associated with unstructured data.

Data is exploding – in volume, variety and velocity. As both structured and unstructured information continue to grow at astronomical rates, firms are struggling to gain deeper insights from this data. The multiple types of data (e.g. rules and regulations, news, internet content, company and research reports, etc.) and the sheer volume of data and update rates make it humanly impossible to consume, analyze and act on the breadth and depth of information available.

Computers have mastered mathematical and scientific computations of structured data but natural language introduces complexities (i.e. implicit meaning, highly contextual, ambiguous, often imprecise) that make it difficult for computers to process and analyze unstructured data. It is necessary to understand and put the information in context (e.g. the meaning and usage of the term “haircut” within the Financial Services industry) in order to successfully leverage unstructured data for business applications.

Our Approach
IBM Watson is an artificial intelligence computer system capable of answering questions posed in natural language which was developed by IBM Research based on a DeepQA project started approximately 4 years earlier (2007) and proved on Jeopardy! a few months ago. Three key technologies that are fundamental to IBM Watson/DeepQA are natural language processing, machine learning, and hypothesis generation that can be leveraged to drive business value.

Natural Language Processing
On Jeopardy!, IBM Watson/DeepQA demonstrated the technology of open domain and automatic question and answering by successfully answering questions covering a broad domain of topics and containing highly complex language (i.e. wide variety of grammatical structures and expressions) with high precision and application of both accurate confidence and speed in responding. The use and analysis of information as it naturally exists in order to compute answers and confidence while referencing evidence sources has motivated Financial Services firms to investigate the business application of IBM Watson/DeepQA.

Machine Learning
A second feature of IBM Watson/DeepQA that has widespread appeal is machine learning capability. This technology leverages two types of learning: 1) upfront training via existing content and known questions and answer pairs and 2) tuning of learning models via feedback loops—Watson learns dynamically and can develop and adjust.

Hypothesis Generation
IBM Watson decomposes questions that are posed in natural language to understand what is being asked and then proceeds with hypothesis generation to formulate candidate answers which put back in the context of the question become hypotheses. IBM Watson then analyzes the corpus of available information such as research, news, etc. to search for hypothesis evidence—the logic to support the multiple possible answers. It simultaneously looks for positive and negative evidence to determine if it can support one of the hypotheses or answers as being truer than the others and it scores the answers based on annotators (sets of attributes or features such as popularity). IBM Watson then synthesizes the information to compute final confidence and produces a set of best answers with ranking and supporting evidence. It is also possible to engage in an iterative loop similar to human interactive dialogue such that IBM Watson prompts for additional information that would refine/improve its answers and confidence.

The attached link provides an approximately 20 minute overview of this innovative technology (http://www.youtube.com/watch?v=3G2H3DZ8rNc).
Your Views
During this session, the IBM Watson Commercialization Team would like to explore your perceptions of this new technology and how you could leverage it to drive business value for your firm.

Business: Leveraging IBM Watson/DeepQA Capabilities
• What types of data sources have the greatest value to your firm? How much of this data is unstructured (e.g. text, research, news, etc.)? How much of the potentially useful data that exists is used in making decisions? What unstructured text/content would you like to use but currently do not?

• What do you perceive as the largest opportunities to leverage unstructured information more effectively to gain insights? What challenges are you currently encountering with utilizing unstructured data? What are the pain points in your existing qualitative data work flow?

• What business divisions in your firm deal with natural language/human asked questions? Where does the resulting answer/set of answers, ranking of answers, and/or supporting evidence drive value creation?

• In your firm’s business work flow, where would an expert advisor or assistant that produces a set of best answers with ranking and supporting evidence improve and/or drive consistency in performance? How would an IBM Watson solution improve the performance of your analysts, strategists and sales teams?

• Do you have process automation projects underway? How strategic is the level of automation of a process to the business?

• Do you have challenges with retention of top performers and institutional knowledge of clients which IBM Watson could address?

• Is your firm focused on improving brand image via innovation?

• How valuable would it be for your firm to be able to leverage IBM Watson technology? How would implementing an IBM Watson solution become a part of or enhance your regular daily work flow activities in the future? How would the implementation of an IBM Watson solution impact your strategy by line of business and assistant in achieving your business goals?

Technology and Operations: Leveraging IBM Watson/DeepQA Capabilities
• What types of data sources have the greatest value to your firm? How much of this data is unstructured (e.g. text, research, news, etc.)? What unstructured text/content would you like to use but currently do not?

• How are you using unstructured information today and leveraging it with the business e.g. sources, analytic solutions, tools, etc.

• What challenges are you currently encountering with utilizing unstructured data? What are the pain points in your existing qualitative data work flow?

• Do you have process automation projects underway? How strategic is the level of automation of a process to the business?

• Given the increasing growth of data and importance of the ability to manage and leverage data to drive business value, what related technical capabilities would be of greatest value to your organization?

• How important is innovation and information management as part of your investment strategy across your organization?

• How do you think an IBM Watson/DeepQA solution would help you to support the business?

• How valuable would it be for your firm to be able to leverage IBM Watson technology? How would implementing an IBM Watson solution become a part of or enhance your regular daily work flow activities in the future? How would the implementation of an IBM Watson solution impact your technology strategy and assistant in achieving your technology goals?