INNOMINDS BACKGROUND- A BIRD'S EVE VIEW:

Innomind's long and impressive journey has evolved from initially being focused on small sized client engagements to staff augmentation; to being solution- driven and creating Gartner Magic Quadrant products and now being a strategic player. This has resulted in strong Product Engineering expertise and your client engagement models seem to sync with client product life cycles. Your expertise therefore now extends to enterprise technology and business applications to design- driven development framework etc.

On Big Data, Innomind's seem to have a collective experience in providing ideas, solution accelerators for data collection as well as batch and real time processing engines as well building frameworks for reporting, warehousing and data mining. Your professional services include providing deep technology consulting. Your data scientists have been researching and building analytics solutions in various risk and credit operations as well. It appeared that the skill expertise within your organization extends to various tools encompassing Data collection using Plume, Data transformation using Informatica, Data processing using Hive; data storage using Cassandra and finally using mining tools like Mondrian, Hadoop Mapreduce and beyond.

OPPORTUNITY TRANSLATION- BANKING AND FINANCIAL SERVICES

Within big banks, their Big Data Forum managing Big Data Analytics platform constantly faces a challenge to:

- Provide businesses with capabilities to extract insights from large scale poly-structured data sets and thus improve competitive advantage
- Enable businesses answer questions that in the past, were beyond reach with traditional technologies' compute and I/O limits.
- Reduce data intensive TCO with Hadoop on commodity platforms

Their scope therefore is to:

- Define hardware and software platform and coordinate deployment.
- Define architectural blueprint and deployment frameworks.

Their challenge is to:

- Get right participation from business SME's to identify relevant use cases and to effectively apply the same use case to multiple tools to derive like for like analysis.
- Adapt to evolving open source product that is rapidly developing within the market.
- Great scarcity in identifying Data Scientists. At the same time experience in analytics and Hadoop is necessary and is a scarce skill set.
- Potentially difficulty to effectively derive meaning and handle right interpretation from diverse data sets.
- Ensure that these emerging technologies can meet respective large bank Information Security requirements.

In light of the above, the analytic tool/capability and investment strategy gets defined accordingly:

CAPABILITY LANDSCAPE:

- **End user analyst empowerment tools** primarily supporting descriptive and diagnostic analytics. Primarily banks seem to look at Datameer, Platfora, Qlikview, MicroStrategy, Karmasphere as potential vendors and their investment strategy would revolve around one or two of them at the most. Their focus is largely designed to enable end user analysts to drill-down and create dashboards and visualizations on Hadoop or BI Plus packages.
- **Statistical packages**. These largely involve tools used by sophisticated analysts that contain mathematical procedures and routines optimized for Hadoop; typically command-line driven (e.g., SAS 4GL, R, SPSS) and I presume some "Data Scientist tools". I presume they use this largely for Descriptive, Diagnostic and Predictive analytics. Banks seem to look at SAS, Revolution Analytics (R) or IBM BigInsights SystemML.
- **Production model development or deployment** wherein application toolkits used to design production-ready models and apps using Hadoop as its data backbone and providing a end-user friendly developer platform mainly for Application Development & Automating Model Deployment

NEXT STEPS:

1. Establish a working session to know how we can address some of the below mentioned capabilities within the core team involving Canary's/Innomind's and Ravi Iyer .
2. To understand how we could map Innomind's Product Engineering capabilities to BFS needs and link it to past experience in addressing the below capabilities. This is important as we need to see synergy and be able to articulate effectively.

Some off-the-cuff points include:

- Capability to address architecture needs as in
    - Application Architecture.
    - Technical standardization.
    - Data Access from Hadoop.
    - Integration with HDFS, Hive, HBase, etc.
    - Tech Stack: Support matrix, Required third-party tools etc.
    - Deployment Architecture
    - Integration: Ability to import/export/upload data. Supported formats for import/export.
- Product tool functionality
    - Supported algorithms and packages.
      - Analytics capabilities.
      - Data Analysis – interactivity while accessing data, ability to slice/dice & explore Big Data, drill down into underlying reports etc.
- Visualization

- o Creating interactive visualization using object drag and drop.
  - Visual drill down and pivot functionalities of the product.
  - Support of in-memory aggregation.
- Security
  - o Authentication and Authorization
    - SSO Integration
    - Encryption
    - Entitlements
    - Security Administration
    - Information Security

Please feel free to reach me with any questions

Regards

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