The Business Case for a Knowledge Engineer

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From Data to Knowledge

- Drive efficiency by optmizing various business variables like pricing, product mix, etc.
- Allow limited, but cost-free business expermentation. Analytical models are difficult to builld and verify, but allow reasonable answers to what-if's questions from business leaders without changing current policies and procedures.
- Provide the knowledge necessary for strategic sales. Analytical tools can be developed to help salespeople target new customers and drive growth with existing customers. Non-obvious stratgies might be uncovered, such as targeting specific equipment types in certain markets.

Ad hoc and IT Handoff

- The specificity of the job results in sharpened skills and domain knowledge necessary to understand and execute complicated ad hoc knowledge requests.
- Ownership of the question and the answer provide a single touch point for the resulting "semi-automated" process
- Any processes handed off to I.T. have been kept in the "language of IT" from the beginning of the project, resulting in greatly decreased hand-over and implementation times

Analysis, Modeling, and Simulation

- In the last thirty years, computer science, statistics, and related fields have made huge strides in various techniques for generating intellgence that can be leveraged for: strategic decision making, tactical monitoring, and new product/market identification and evaluation.
- Analysis, Modeling, and Simulation of various market conditions and processes including the quotation process, fleet dismantling, new product introduction, and macro market conditions.

Forecasting, Regression, and Clustering

- Forecasting, regression, and machine learning to predict the value of various business variables including inquries, sales, repairs, and credit default.
- Clustering, comparisons, and link analysis to discover relationships between part types, aircraft types, vendor types, seasonality, market segments, and other business dimensions

Leverage External GE Expertise

- Looking across GE for best practices, data sources, and tools can provide some easy wins
- Further examination of currently used external assets, including GECAS models and GRC deliverables, could provide extra value not currently being utilized

Crowdsourcing - Both Internal and External

- Seeking input across all AMS functions for large analytical projects would insure any output and deliverables are not unncessarily lopsided. In addition, new ideas for analytical projects could be uncovered.
- Use external services to provide insight into anonymized data.

Business/Domain

Like any knowledge-based job (including I.T. and Finance), a great deal of internal business and domain knowledge would be required to effectively perform job duties. However, a more important consideration would be the ability of a candidate to leverage the domain expertise extant in the Inventory Management department and across the company.

Computational and Mathematical Modeling

A large part of the position will involve creating, evaluating, applying, and updating mathematical models that would form the basis of large analytics and projects. In addition, application of computational modeling skills would be needed to complete most analytical projects involving "modern" simulation and machine learning techniques.

Software Engineering/Data Compliance

All projects deliverables from this position must maintain compliance and be readily handed over to I.T. if they are deemed business critical. As a result, standard software engineering and project management skills should be utilized to mainatain quality and reduce drag on hand-offs.

A Few Sample Projects

Please see the business case for more detail

Ad Hoc Analytical Queries Develop system to allow analytical exploration and deep dives without impacting ICS transational processing or "stealing" I.T. time.

Portfolio Optimization Using parameterized inputs (from expert what-if's, forecasting, inventory, skyline, etc) determine product mix and it's effect on forecasted sales versus an optimized product mix. What are delta's and what are the smallest changes to current planning with largest effect?

"Lever" Modeling Combination of models and simulation to allow exploration of "levers we can pull", including price elasticity, inventory levels, marketing (including controlled inventory listing on ILS)