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Seminar

Speaker: **Dr. Samuel M. Epstein**
Director Research-Applied Data Mining AT&T Labs

Title: **Data and Analytic Framework Driven Solutions for Meaningful Business Decision Making**

Time: **3:20 – 4:20pm, Wednesday, May 1, 2013**

Place: **552 Hill Center**

Abstract

This presentation advocates problem solving approaches driven by empirically validated solution frameworks. An hypothesized analytical framework that is not grounded on supporting data will likely be of limited practical application. Similarly, when data analysis is not driven by a well-defined framework or business context, results from application of analytical techniques, however innovative, will not help solve real problems. The marriage of data analysis with solution frameworks supports the evolution of a learning environment for solving complex problems. Concurrent framework, data quality, and analytical methodology enhancement helps ensure remediation of empirically identified solution shortcomings, and the responsiveness of successive versions of improved solutions to problem dynamics. Business decision makers are confronted with the challenge of evaluating the recommendations of analysts in light of their benchmarks, thought processes and knowledge of areas for attention. A prerequisite for management adoption of analyst recommendations is a comfort level with the business considerations taken into account, the supporting framework, and the data underlying conclusions. The risk to continuing management support of analytical work and a data driven culture is management's conclusion that a problem is not amenable to a quantitative solution, dismissing the analytics as missing the mark because they fail to account for important business drivers, and proceeding to a decision based on intuition or other business realities and pressures.

Analysts seeking to provide meaningful decision support must fully comprehend the background underlying a complex and often multidimensional problem, and establish a solution framework that guides downstream analytical work. Establishment of a workable solution framework is interactive with understanding available data resources, nuances of data definitions, and validation –based on data—that the framework can support problem solving

objectives. Hurdles to be overcome by analysts include acquiring a working understanding of the context in which a solution may be applied, and the implications of the decisions to be made based on their analytics including the penalties to the decision maker of “wrong” decisions. The analyst bears the burden of proving why despite uncertainties, assumptions, and complexities, the solution provided meets “goodness” criteria and is worthy of acceptance. The analyst must also overcome a variety of technical/ methodological hurdles, and appropriate analytical methodologies must be devised and applied to reach conclusions. Hence, meaningful analytics reflect the confluence of robust solution frameworks, appropriately defined data of acceptable quality, and often clever design and application of custom analytical tools.

In this presentation, two examples are provided of data driven solution frameworks for solving complex problems. The first example deals with Capacity Planning for Mobility (Wireless) Telecommunications Service. The second example deals with Forecasting Local Access (last mile interconnection) Demand and Revenue. Additionally, a metadata framework is introduced with the objectives of encouraging discipline in framing analytical solutions, heightening sensitivity to data definitional issues and data reuse, and improving accessibility of analyses and supporting data. Although examples are telecommunications related, the problem solving approaches are applicable to all kinds of enterprises

***** Refreshments will be served at @2:50pm in Room 502 Hill Center *****