

CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

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**DISTRIBUTOR PRICE OPTIMIZATION
USING MARKET SEGMENTATION**

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(Data Mining MS Thesis Presentation)

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Abstract: By the nature of the business, a distributor inherits complex price structures. In general, most distributors adopt a cost-plus methodology for setting the price of a product. Coupling the price methodology with product promotions and price discounts creates a more complex price structure. This results in a loss of revenue for the distributor by selling a product at the wrong price to the customer.

This thesis demonstrates a pricing methodology based on the unique combination of a customer and a product. These suggested prices were generated by a price engine which at its core is made up of the key attributes shown to be statistically significant to price. CHAID decision tree algorithm was used to identify and segment the important variables. Historical transactional data along with pertinent customer-product information were used to create the models. The significant variables were then used to create a hierarchical tree structure which forms the basis of a price engine.

For generating a suggested price, a price engine only requires the customer and product unique identifiers as input. The salesperson taking the order is able to use the suggested price from the price engine as a guide. This process has the benefit of properly segmenting a customer dynamically over time. If a customer increases or decreases its spending pattern over a specified period, the price engine automatically adjusts to the change.

In contrast to the cost-plus methodology, a price engine creates many segments for each product and each segment corresponds to a distinct price level. As a result, the distributor can gain additional profits by closely adhering to the suggested price. The price engine generated in this thesis has shown to increase revenue anywhere from one to six percent overall.

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