Pricing Optimization

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PURDUE UNIVERSITY | The Data Mine

Background and Motivations

CliftonLarsonAllen (CLA) is a professional services firm that provides integrated wealth advisory, outsourcing, audit, tax, and consulting services. They work with clients globally and nationally across various industries. For this project, we analyzed one specific service.

SERVICES
- Assurance
- Tax
- Audit
- Consulting and Outsourcing
- Digital
- Wealth Advisory

Realization

Each employee has a rate for every hour they work, and the average for each service and industry is recorded. The percentage of how much of this rate Is charged is the realization. A 1% increase in realization increases the amount charged.

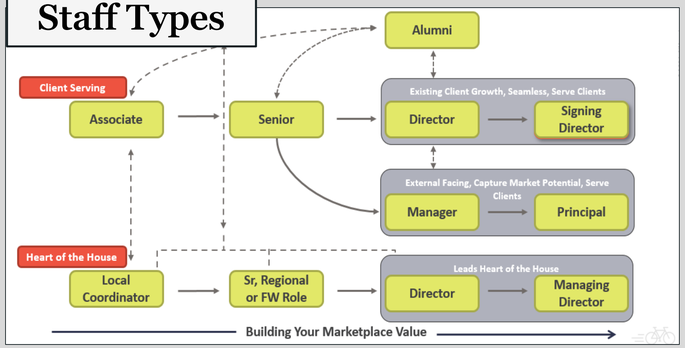
INDUSTRIES
- Agribusiness, Food, and Beverage
- Construction
- Education
- Financial Services and Private Capital
- Government
- Health Care
- Manufacturing, Transportation, and Logistics
- Nonprofits
- Professional Services
- Real Estate
- Retail and Hospitality
- Technology and Life Sciences
- Telecommunications

Problems

1. Understanding consistency of pricing at CLA and whether improvements can be made

2. Understanding consistency of pricing within industries and services at CLA and whether improvements can be made

Staff Types



Project Goal

Identifying potential pricing improvements to CLA's service lines, which results in a better experience for CLA clients

Research Methodologies

1 Picking One Region

We started by looking at a single service in one geographic area to create functions that would be applicable to all regions and all services.

2 First Model

We created a model that showed total net fees in terms of time

Challenge:
Only knew how to make simple models at first due to limited knowledge of tools

3 Bins

We placed data in like "bins" to predict pricing for each bin

4 Average Price

We estimated the average pricing for each CRL

5 Machine Learning Model

We used a ML model to predict rates for a 1% realization

Challenge:
Only knew how to make simple models at first due to limited knowledge of tools

6 Relationship between Pricing and Services

We figured out the relationship between pricing and how CLA can provide seamless services
i.e. integrating additional services to new and existing customers

Plots

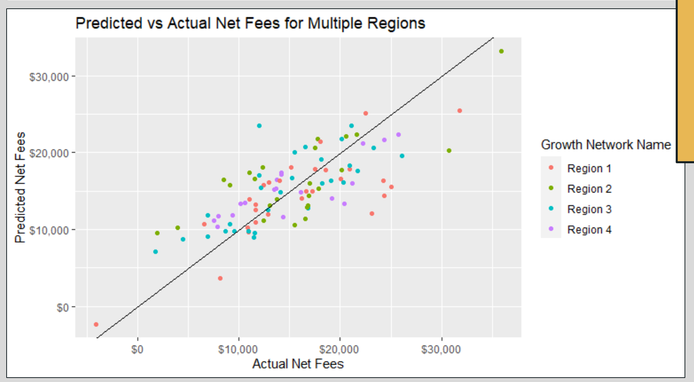
Total Net Fees in each geographic area
Total Net Fees for each Client Service Location in each geographic area
Effect of Staff Type on Engagement Net Fees
Client Relationship Leaders Differences in a specific service
Significant Variables for each region
Predictions vs Actual Net Fees for each geographic area

Conclusion and Future Goals

We need to better understand why some engagements have higher pricing and engagement complexity at CLA. For the future, we should gain a better understanding of pricing and engagement complexity at CLA and determine the relationship between pricing individual engagements and other offerings at CLA.

Example Plot

Disclaimer: The data is not real data from CLA



Each bin contains different Client Relationship Leaders (CRL). The random forest model generated colors each CRL differently.

Each bin is sorted by Service, Region, and Industry. The plot below is for Assurance for a region consisting of four locations over the past 18 months.

Example Plot

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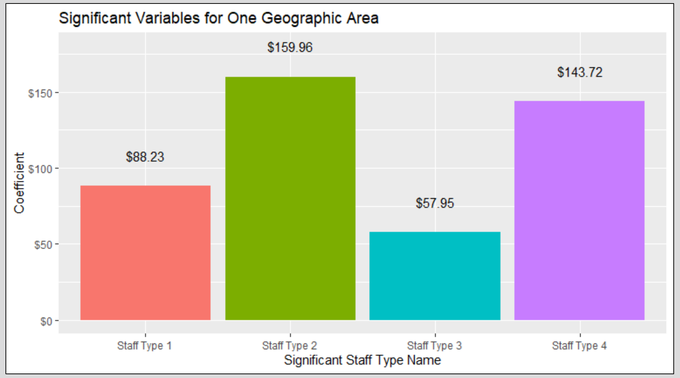

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