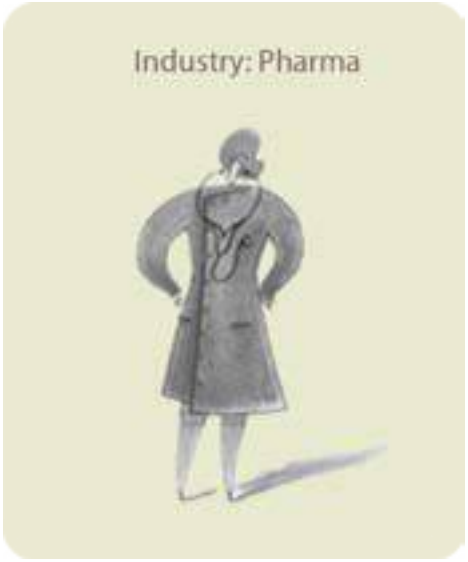
TeraCrunch™

CASE STUDY

Optimizing and predicting operational performance in a large law firm using TeraCrunch's advanced Operational Analytics suite.

Overview

A multi-billion dollar legal firm with offices across the country has an IT department that supports their critical infrastructure. Downtime or delay can result in thousands of lost billable hours. They asked TeraCrunch to identify actionable patterns from their IT help desk ticketing system data that would contribute to optimal resource allocation, scheduling, training and other organizational optimization decisions surrounding demand for, and successful provision of, IT services.



ABOUT THE CLIENT

- One of the 100 largest law firms in the US with offices in many states
- About 500 attorneys with thousands of corporate clients
- Highly placed in many annual industry rankings

THE CHALLENGE AND THE STRATEGIC ISSUES

1. Business Challenges

Law firms live and die by the billable hour. Legal work is also often time sensitive and court deadlines must be met. But in the digital era, attorneys need IT infrastructure to accomplish their daily jobs. IT support is mission critical and cannot afford to be unfocused or sluggish.

2. Strategic Issues

Our client needed to further hone and focus their IT operations so that the firm could deliver for their clients. They understood that an up-to-date, interactive, predictive analytics solution would allow them to anticipate problems and respond to them more quickly.

Predictive Time & Resource Management Needs

Anticipate patterns of demand for each type of digital & human resource and service. Map process flows and identify points for optimization.

Optimizing Resource Planning & Allocation

Identify bottlenecks in provision of services and plan resource allocation to maximize uptime and reduce time-to-completion of outstanding IT requests.

METHODOLOGY AND TOOLS

TeraCrunch extracted structured and unstructured (natural language) data for all Help Desk tickets in the client's system, as well as automating regular data refreshes to update our analytic models.

TOOLS

TeraCrunch customized three analytics products from our Socratez Insightz suite to cater to the needs of the client.

Text Analytics

Much of the useful information within a ticketing system is in the free text fields describing problems and solutions. Our text analytics identifies and hierarchically categorizes the most important information and structures it for predictive analytics.

1. Analysis and parsing of descriptions through machine learning.
2. Meaningfully clustering those incidents as related problems and solutions.
3. Extracting the important dimensions of procedures and their results.

Problem & Solution Segmentation

Each problem the Help Desk is confronted with has characteristic difficulties, requires a solution that effectively addresses those issues, and needs to be addressed by a technician with the requisite skill set. Our analytics isolate those defining properties and matches them accordingly.

1. Dependent segmentation of problem and solution characteristics.
2. Identification of the most successful solution for each problem type.
3. Conditional evaluation of personnel for each problem type.
4. Analysis of optimal escalation sequence for solution.

Predictive Trend Analysis

Segmented problems and solutions are optimally paired to maximize success and minimize labor and other resource expenditures. Ongoing data collection & interactive analytics allow for continuing process optimization. Pooled ticket outcomes are used for resource planning and assignment.

1. Matching similar problems with likely optimal solutions through machine learning.
2. Identification of the most successful solution for each problem type.
3. Adaptive pooling of problems, solutions and escalation paths for accurate resource planning.

THE APPROACH

TeraCrunch worked with the client to improve operational efficiency and effectiveness, reduce time to solution, and minimize information technology downtime, in four stages.

Stage 1: Ingesting, Transforming and Structuring Data
TeraCrunch connected with the client's help desk ticketing system to extract regular updates of both structured and unstructured data. We combined those data with organizational structure, IT infrastructure and geographical distribution. Then we employed our Socratez Text Analytics suite to extract meaning from the free response fields and structure it for predictive analytics. Our platform is also flexible enough that the firm is expanding our use from IT to their other support departments.

Stage 2: Segmenting Problems and Solutions for Performance Analytics
Problems were groups according to their functional similarities. Solutions were also grouped by type and then evaluated and ranked on several effectiveness metrics. They were also evaluated conditionally so that optimal problem, solution and escalation sets could be further analyzed and predicted.

Stage 3: Optimizing Resource Allocation, Organizational Process & Predicting Demand
Machine learning techniques are used to score performance on key ticket metrics. Predictive longitudinal models anticipate demand and allow management to better plan staffing and resource needs, as well as monitor organizational bottlenecks.

Stage 4: Automating Reports and Insights
Analytic results are presented in an interactive dashboard allowing prediction filtering based on time, location, type of problem, and other characteristics. Positive and negative outliers are identified and distinguishing characteristics are called out in tabular and graphical displays suitable for departmental resource and demand planning and for executive reporting.

IMPACT ON THE BUSINESS

TeraCrunch solution uncovered surprising patterns in the firms demand for IT services. It allowed the department to pinpoint areas for improvement and is now a regular tool in their operations monitoring and planning. The client has gained a clearer understanding of their internal IT needs and a way to manage and monitor the provision of better optimized services — resulting in faster time to deliver and greater overall uptime.