

Matching analytics techniques to accounting questions

Accounting data analytics type and sample techniques	Financial	Managerial	Audit	Tax
<p>Descriptive: What happened? What is happening?</p> <p>Sample techniques: Counts, sums, bar charts, maximums, minimums, etc.</p>	<ul style="list-style-type: none"> What is the balance of inventory on hand? What are the descriptive performance statistics (for example, means, medians, maximums, and minimums) for the retail industry? What were the return on asset, asset turnover, and return on sales ratios last year? 	<ul style="list-style-type: none"> What percentage of United Airlines' flights departed on time this past month? What was the revenue growth for each division? Which product is the most profitable for the company? 	<ul style="list-style-type: none"> How long have the existing accounts receivable (amounts that our customers owe us) been outstanding? Which sales come from a related party (preexisting business relationship or common interest) those that transactions? 	<ul style="list-style-type: none"> How much did the company pay in federal taxes last year? What effective tax rate did we pay? How big is the difference between taxable income and net income?
<p>Diagnostic: Why did it happen? What are the causes of past results? Why are the results different than expected? Can we explain why it happened?</p> <p>Sample techniques: Variance analysis, outlier detection, drill-down analysis</p>	<ul style="list-style-type: none"> Why did SG&A (sales, general, and administrative) expenses decrease as compared to the industry? 	<ul style="list-style-type: none"> Why is revenue up on the West Coast but down in the Midwest? How can the computation of price variance and labor rate variance help determine the root causes of the operational results? Why did the collectability of receivables (amount our customers owe to us) fall in the current quarter (as compared to the past)? 	<ul style="list-style-type: none"> Which large transactions were approved by management and which were not approved by management and why? Were checks recorded out of sequence? 	<ul style="list-style-type: none"> Why did the average effective tax rate change? Why did overall income tax increase even though net income did not? Why is the difference between taxable income and net income getting bigger?
<p>Predictive: Will it happen in the future? What is the</p>	<ul style="list-style-type: none"> Can we forecast future 	<ul style="list-style-type: none"> Do we extend credit or not to 	<ul style="list-style-type: none"> Can we predict whether the 	<ul style="list-style-type: none"> Can the IRS use predictive

<p>probability something will happen? Can we forecast what will happen?</p> <p>Sample techniques: Classification, regression, time-series analysis</p>	<p>revenues/cash flows/earnings with reasonable accuracy?</p> <ul style="list-style-type: none"> What is the chance the company will go bankrupt? 	<p>customers based on customer characteristics, such as credit score, payment history, and existing debt?</p> <ul style="list-style-type: none"> What forecast of future sales should be used to set the budget? 	<p>financial statements might contain errors?</p> <ul style="list-style-type: none"> Should we accept this company as an audit client? 	<p>techniques to find those who are evading taxes?</p> <ul style="list-style-type: none"> Can the company predict whether the IRS will audit us or not?
<p>Prescriptive: What should we do, based on what we expect will happen? How do we optimize our performance based on potential constraints?</p> <p>Sample techniques: What-if analysis, goal-seek analysis, sensitivity analysis, optimization</p>	<ul style="list-style-type: none"> Will Novartis be more profitable if the FDA approves its new pharmaceutical product? 	<ul style="list-style-type: none"> Should the company lease or buy its headquarters office building? Should the company make its products or outsource to other producers? What level of sales will allow us to break even? How can revenues be maximized (or costs be minimized) if there is a trade war with another country? 	<ul style="list-style-type: none"> How will audit work scheduling change if we acquire a Korean company as a client? If an auditing company has all Dec. 31 year-end audit clients, how will it organize its audit work in the new year? 	<ul style="list-style-type: none"> Should the company move operations from the United States to Ireland to minimize taxes? How will our taxes change after the next U.S. Congress legislative session?
<p>Adaptive/Autonomous: How does the system adapt to changes? How can we continuously run analytic solutions?</p> <p>Sample techniques: Artificial intelligence, artificial neural networks, data mining, machine learning, natural language processing</p>	<ul style="list-style-type: none"> What is the proper accounting treatment per GAAP based on a legal contract? Which sales are fraudulent via real-time identification and alerts? 	<ul style="list-style-type: none"> How can costs be reduced via predictive maintenance for equipment and other fixed assets? How can market signals be used to automatically adjust demand planning? 	<ul style="list-style-type: none"> During an interview did the client lie about transactions? Which transactions are high risk and should be investigated? 	<ul style="list-style-type: none"> When is the best time to sell a stock/bond investment to minimize taxes (before tax law changes go into effect?) with the stock/bond automatically sold?

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