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## Case Study

### Decision Strategies, Inc., Uses TreeAge Pro to Help Corporate Clients Optimize Important Decisions

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Gary Bush  
Managing Director  
Decision Strategies, Inc.  
Atlanta, GA

#### Profile

Decision Strategies, Inc. (DSI), with offices in Atlanta, Houston and Calgary, is an international leader in the training and coaching of decision practices and portfolio management for major business organizations.

DSI uses a structured process called Integrated Decision Management® to help clients optimize decisions. “We get called in to be facilitators,” said Gary Bush, managing director. “Normally we’ll be working with either the project manager for a major project or the business unit leader who owns the decision,” he said. Issues typically pertain to strategic investments, business strategies or negotiations.

In addition to helping clients make optimal choices on specific issues involving major investments, DSI provides on-site training, developing their clients’ internal capabilities so that they can use the same methods and tools on smaller projects.

## Challenge

DSI's toolkit includes a variety of software solutions. But over the years, the company has found that many of its projects require a powerful decision tree capability.

When making strategic decisions, DSI's clients often need to consider the viability of contingency plans. "If you start on a pathway that has the chance for failure, you may need to then shift to something else," Bush explained. "There is tremendous value in keeping your options open, or knowing what you're going to do if an uncertainty goes the wrong way."

But most models aren't a big help when it comes to comparing options. "Most decision or analytical models take a pathway and evaluate it all the way out," Bush said. Decision trees, on the other hand, are ideal for illustrating the value of alternative options. "They let you see the options along the way," he said. And that helps DSI's clients visualize what their contingency plans will be if their preferred plans don't work out.

## Solution

DSI uses TreeAge Pro for decision tree analysis because it offers a number of benefits that other decision tree products don't.

"The cost benefit analysis is superb. They call it 'cost-effectiveness,'" Bush said. "I don't think there is another tool that has those functions."

With TreeAge Pro, users not only see their decision alternatives displayed in a tree, but get the tools they need to quantify those alternatives, Bush explained. It's an exceptional combination. "There are tools for calculating cost-effectiveness, but not in tree format. And then there are trees that don't have cost-effectiveness," he said. TreeAge Pro illustrates alternative options *and* calculates their value.

Another advantage of using TreeAge Pro is that the software can reflect an asymmetrical decision structure, Bush said. "With a typical decision tree product, you must show the same [number of] uncertainties and outcomes on each branch," he said. But in reality, not all decision options include the same number of uncertainties. Allowing users to create asymmetrical trees lets them model real-world scenarios more effectively. "With TreeAge Pro, you can program asymmetries right into the influence diagram," Bush said. An influence diagram, often created before building a decision tree, offers a simpler way of illustrating a problem, and shows how one factor influences another.

At times DSI has used TreeAge Pro to create industry-specific applications for some of its clients, Bush said, tailoring the software to match the unique aspects of the problems they're working on. "One of the advantages of the software is that it is quite flexible, so the basic code and user interface don't have to be modified. It's a nice feature of the software," he said.

In the pharmaceutical industry, it is essential to understand the expected value of a project at each stage of its development, Bush said. "We work with pharmaceutical companies on evaluating alternatives and putting the results into a decision tree, and the results from the tree then go into a portfolio database. Pharmaceutical companies use the database with portfolio analysis tools to optimize their investment so that they are putting dollars in areas with the highest expected value," he said.

"The key is to have a standardized approach for evaluating each project, prioritizing based on apples to apples information. Decision trees are used to evaluate the expected value of each project," Bush said.

TreeAge Pro's sensitivity analysis features help DSI's clients focus on the critical issues by illustrating which variables have the potential to change a decision and which don't, Bush said. "You only want to spend time discussing something relevant," he said.

"We tend to overcome a lot of arguing about assumptions by using ranges and uncertainty," Bush said. "Suppose that in a litigation situation, the outcome of losing the litigation is a loss of \$1 million, the outcome of winning is \$0, and the alternative is to settle for \$200,000. The likelihood has to be 80% (20% times a million) or more to litigate," he said. "If one lawyer says we have a 50% chance of winning, and another lawyer says there's a 75% chance, with sensitivity analysis, we can turn around and say, 'If it's less than 80%, we settle.'"

A sensitivity analysis shows at what point a course of action becomes economical. For DSI, the value of the feature was recently demonstrated in a case involving Chevron Texaco.

"It had to do with an oil project that they were partnering with another major oil company on," Bush said. "They discovered a pocket of oil, and the other partner wanted to develop it. But it wasn't economical," he said.

"The local government wanted the revenue and Chevron Texaco's partner wanted some other projects in the country, so because of the strategic value, they were not all that concerned about merely breaking even or even incurring a slight loss," he explained. "But Chevron Texaco wanted to invest in positive value creating projects. There was a bit of an impasse," he said.

DSI's first contribution was to help Chevron Texaco determine which variables could make a real difference in the economics of the project. Working together, they determined that with a flexible tax structure and a favorable revenue sharing plan, the oil development plan could become a positive value project.

By assigning ranges to those two key variables, DSI was able to help Chevron Texaco determine at what point the project could become economical. That information was then used to establish the company's negotiating position. "They knew what their walk-away point was, and how far they could push the government and the other partner," Bush said. "They asked for their 90th percentile – where there was high value – and got nearly all of it," he said. "The government was happy and the partner was happy. Without the use of a decision tree or sensitivity analysis to know what it would take to make this a good project, they would have been stuck." The difference between the project as originally proposed and the negotiated terms amounted to a few hundred million dollars in value, Bush said.

Finally, DSI likes working with TreeAge Software because there is active development under way at the company, Bush said. Both DSI customers and members of DSI's staff have contacted TreeAge to offer suggestions, and the TreeAge team has always responded positively. "They are very accessible," Bush said, "and whenever there is a technical question, they are right on track with understanding what the question is and providing an answer."

*To read about TreeAge Software's partnership with Decision Strategies, Inc., visit the Partners section of our web site.*