Restaurant Reservation Decision

BY

P.N. JAIRAM

OVERVIEW

Restaurant Reservation is an integral part of operations at any fine dining restaurant. Often patrons plan their lunch and dinner engagements several weeks or days ahead and make restaurant reservations in advance. Such advance reservation provides the restaurant management the ability to prepare in respect to:

1. Number of people expected at a given service period

2. Timing and indication of a 'rush-hour'

3. Opportunity to recognize, divert and spread the 'rush-hour'

4. Allocation/ distribution of tables, staff and food preparation

5. Smooth work flow during operations

In short, advance reservations provide an opportunity to avoid surprises to both costumers and the restaurant management, and a tool for effective table management.

Reservations are traditionally maintained in a book form. Diners need to call the restaurant during operational hours to make a reservation. During the last year, making reservations at restaurants has taken a new route. With the invent of Internet and its utility in everyday functioning, restaurants are also moving in the direction of online reservation, offering its patrons the flexibility to make restaurant reservation from a place and at a time convenient to them.

Currently there are four vendors who provide partner restaurants Electronic Reservations Book (ERB) that integrates table management system with reservation system. This is a hardware and software computer package with an Internet link. The partner restaurants require an ERB that replaces the traditional pen-and-pencil reservation system. Some benefits these packages offer, in contrast to the traditional books, are the following

1. Touchscreen computer

2. Range of Management tools

    a. Operational reports

    b. Floor management software

    c. Track cancellations, walk-in and waitlist

    d. Eliminate overbooking

    e. View customer reservation histories

3. Customer data

    a. Customer preferences and special requests

    b. Reservation histories

    c. Capture phone numbers, email and postal address at source and save the information in customer database.

4. Target marketing – create target mailings using information from customer database

5. Internet reservations

All four vendors provide most of the services listed above. However, reliability of the system, personalized interface of the ERB, availability of system in totality in the Washington, D. C. area, ease of use, and cost are important factors in evaluating the system.

Any restaurant proposing to embrace an ERB system faces a variety of objectives, qualitative quantitative and investment considerations. Further a justification of its utility, and short and long terms affects. Presenting a complex mix for decision-making.

ANALYTICAL HIERARCHY PROCESS

The Analytical Hierarchy Process (AHP) developed by Thomas Saaty, allow decision makers to model a complex problem in a hierarchical structure[1]. AHP has the ability to enhance the choice phase of decision-making with evaluation and measurement. AHP also allows for both objective and subjective considerations in the decision process. It incorporates a synergistic combination of concepts and techniques, such as hierarchical structuring of complexity, pairwise comparisons with non arbitrarily assigned weights or priorities, and consistency considerations. It allows comparison of qualitative factors with quantitative factors, by the ability to derive ratio scale priorities for qualitative words.

EXPERT CHOICE

Expert Choice is software developed to assist in AHP decision-making. Expert Choice is a powerful decision-support system that leverages the comprehensive expertise of an organization to enhance decision-making at all levels. It is accomplished through a process that provides structured analysis, communication, and synthesis of organizational goals and objectives. Expert Choice helps decision-makers define objectives and

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[1] Ernest Forman, *Decisions By Objectives*, page 43.

alternatives and organize them into a hierarchical structure[2]. The sensitivity graphs that

are obtained can be used to dynamically examine the effect of varying the decision

objective priorities on the decision alternatives. The ability for dynamic examination

assists in easily understanding the drivers of complex decisions.

PROBLEM STATEMENT

The restaurant is presently in the decision-making process, to purchase evaluating

the various Electronic Reservation Systems available. Many of these products could be

functionally at par. Many individuals handle reservations at the front desk. The

restaurant recognizes that, other alternatives being equal, the ease of transition adapting a

system is essential; this not being the case the purpose may be defeated. Based upon the

analysis described earlier, the restaurant has to make a decision taking into consideration

all other relevant factors to justify the investment.

The prevalent decision-making process is comparable to BOGSAT.[3] [4] However,

with the various capabilities, performance, cost, and operational requirements, the

problem is bigger. By adding additional criteria, the ability to chose the best alternative

could become very complex. If the most optimal alternative can be chosen, the decision-

maker can justify and defend his stand.

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[2] www.expertchoice.com
[3] Ernest Forman, *Decisions By Objectives*, page 5.
[4] BOGSAT is an acronym for a **B**unch of **O**ld **G**uys/**G**als **S**itting **A**round **T**alking. A style of decision-making process that is dominated by the leader, rarely facilitated, and rarely looks back even if going down a wrong path. Though this process may entail a considerable amount of preparation, including information-gathering, and other detailed analyses, there are problems with this approach.

IDENTIFICATION OF DECISION

The decision is to select the best Electronic Reservation System for the restaurant.

SIGNIFICANCE OF DECISION

The decision can have a significant impact in terms of getting the best utility of the system. A good selection of ERB will lead to significant gains to tap potential resources to increase revenue, through effective floor management, eliminate overbooking, reduce errors while taking reservation, and capture customer data for future target marketing. The impact of a poor decision, other than a loss of capital, could reduce the system of being a 'white elephant'.

DECISION MAKING APPROACH

For selecting the best Electronic Reservation System, Analytical Hierarchy Process and Expert Choice will be used. AHP provides a good framework required to model a complex decision. AHP allows for a better understanding of the problem, its criteria, and choices. Also the hierarchical structure incorporates the overall goal, objectives, sub-objectives and alternatives. Expert Choice allows for capture of different factual and conceptual data for decision-making process, while integrating the goal with the different objectives and various alternatives. Expert Choice easily allows for changes in the data to be incorporated at any stage of the decision-making process.

DECISION MODEL

The first step in decision-making is to develop a hierarchy model. Hierarchy model has three major levels, namely goal, objectives, and alternates. (Figure 1 shows the Model with Goal, Objectives and Alternatives)

Goal: Select an Electronic Reservation System (ERS).

Objectives: The objectives are as follows:

* Reliability: The ERS should be reliable in terms of volume handling with proven track record.

* Personalized Interface: The ERS console should aesthetically blend with the restaurant interior.

* Availability: The ERS should be accessible at all times with minimum down time.

* Ease of Use: The ERS should display restaurant layout. It should have touch-screen input device. Should be user friendly and easy to switch to.

* Cost: Total cost to purchase the system

    Support Costs for supplies

    Annual Fees

    Fee per reservation generation through vendor web site.
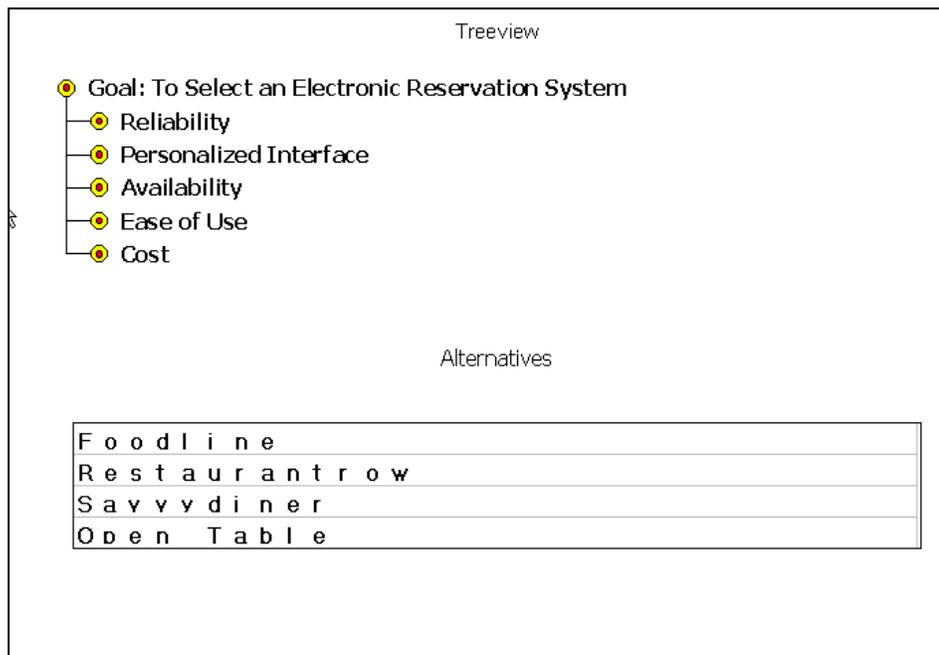
Figure 1 – Basic Model showing Goal, Objectives and Alternatives

Alternatives: The alternatives identified are as follows

1. Foodline – The Foodline Reservation Solutions (FRS) version 5.1 helps restaurants maximize interactions with customers; manage information about guests and reservations. FRS 5.1 includes (a) graphical table layout (with color layout), (b) quick reservation entry, (c) manager level security, (d) customized overbooking logic, (e) customized viewings of reservations based on the number of seatings per service[5]. Foodline has partnerships with Restaurant Data Concepts, a company that owns POSitouch point of sale system, American Express, Zagat.com, citysearch.com, and Food.com. The reservation 'book' can be managed online from anywhere.[6]

2. Restaurantrow – Does not provide an electronic book. The restaurants' computer, and website should be linked to provide reservation. The company does not provide software for restaurant management system. Restaurantrow.com provides details of participating restaurant on their website[7]. Presently have no business partnerships. They are interested in increasing the traffic to the restaurant.[8]

3. Savvydiner – Savvydiner.com are interested in providing participating restaurants' online reservation capability. Are presently servicing East Coast and Midwest regions. Provides restaurant information on their web site[9]. Partner restaurant receives customer data.

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[5] www.foodline.com
[6] Stephanie Trzaska, Foodline.com, November 2000.
[7] www.restaurantrow.com
[8] K. Kris, Restaurantrow, November 2000.
[9] Bill Matuszak, Savvydiner, November 2000.

4. Open Table – Provides partner restaurants with Electronic Reservation

   Book (ERB), and a high-speed, always-on Internet connection as a part of

   the service. The software package provided includes (a) floor management

   software, (b) touchscreen computer that eases reservations management,

   (c) management tools include customer databases, operational and

   marketing reports, (d) create target marketing mailings and emails using

   the information in the customer database[10]. The ease of use, the

   personalized restaurant and screen layout are particularly a good feature[11].

   The product is upgraded regularly based on feedback provided by the

   partner restaurants[12]. Open Table.com is responsible for installation,

   training, support and upgrades. Among the companies that Open

   Table.com has partnerships include America Online, American Express,

   Digital City, Washingtonian Online, and Zagat Survey. Presently they

   have seventy-two restaurants partners in Washington, D. C.

After building the decision model in hierarchical form, based on goal, objectives

and alternatives, the next step is to evaluate and prioritize objectives. This is achieved

through pairwise relative comparison using qualitative, quantitative, and factual data when

available and intuitive as well.

The pairwise comparisons were done on the model. Each objective was evaluated

with respect to the other. The rationale is to compare an objective – Reliability to another

– Personalized Interface of its relative importance with respect to the goal. Comparative

judgment is recorded by changing the position of scale from Equal to Moderate (say).

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[10] Larissa Markarian, Open Table.com, November 2000.
[11] Nathelie Lawrence, Equinox Restaurant, November 2000.
[12] Jeffery Fisher, Ardeo Restaurant, November 2000.

The same is done with other objectives (Figure 2). The decision maker is willing to pay

for their requirements. Therefore Cost Effectiveness is rated lower than Reliability.
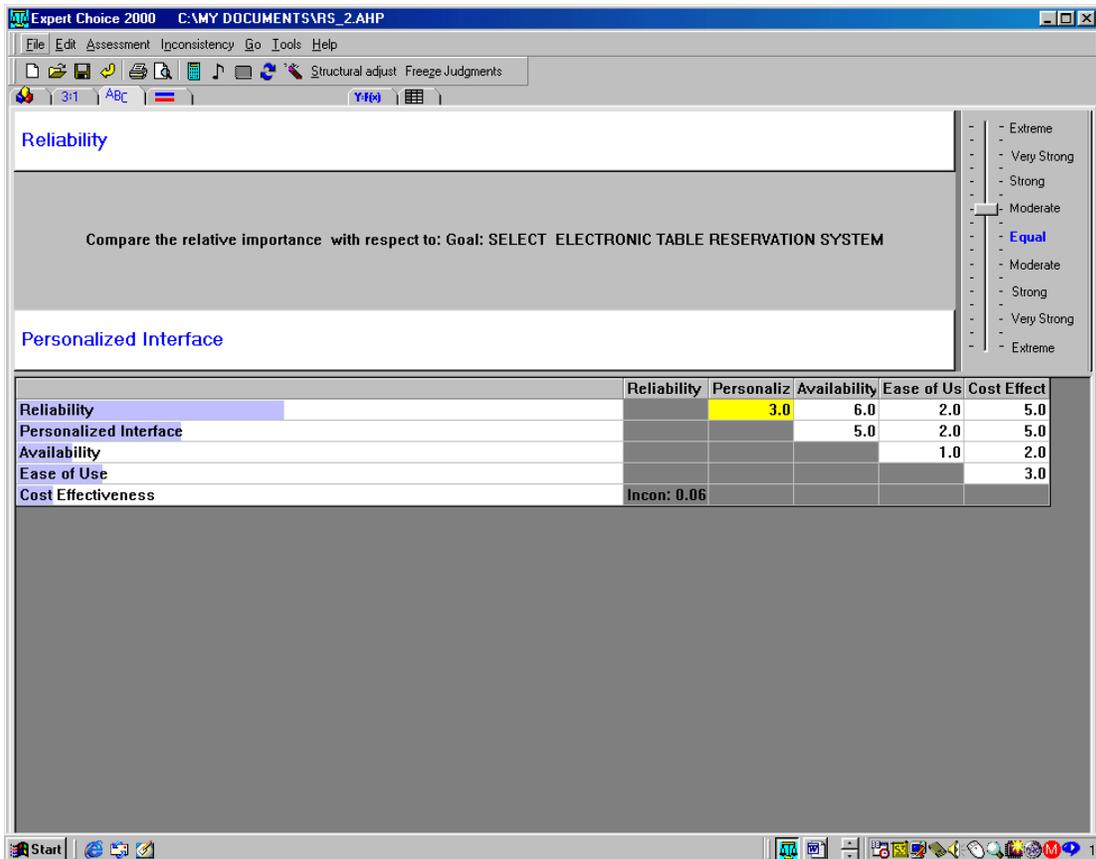
Figure 2 – Pairwise verbal comparison

RESULTS

Derived Weights for Objectives: By using the pairwise verbal assessment function

in Expert Choice, weights were derived for the five objectives of reliability, personalized

interface, availability, ease of use, and cost effectiveness, which provided the priorities for

the stated criteria. They are as follows:
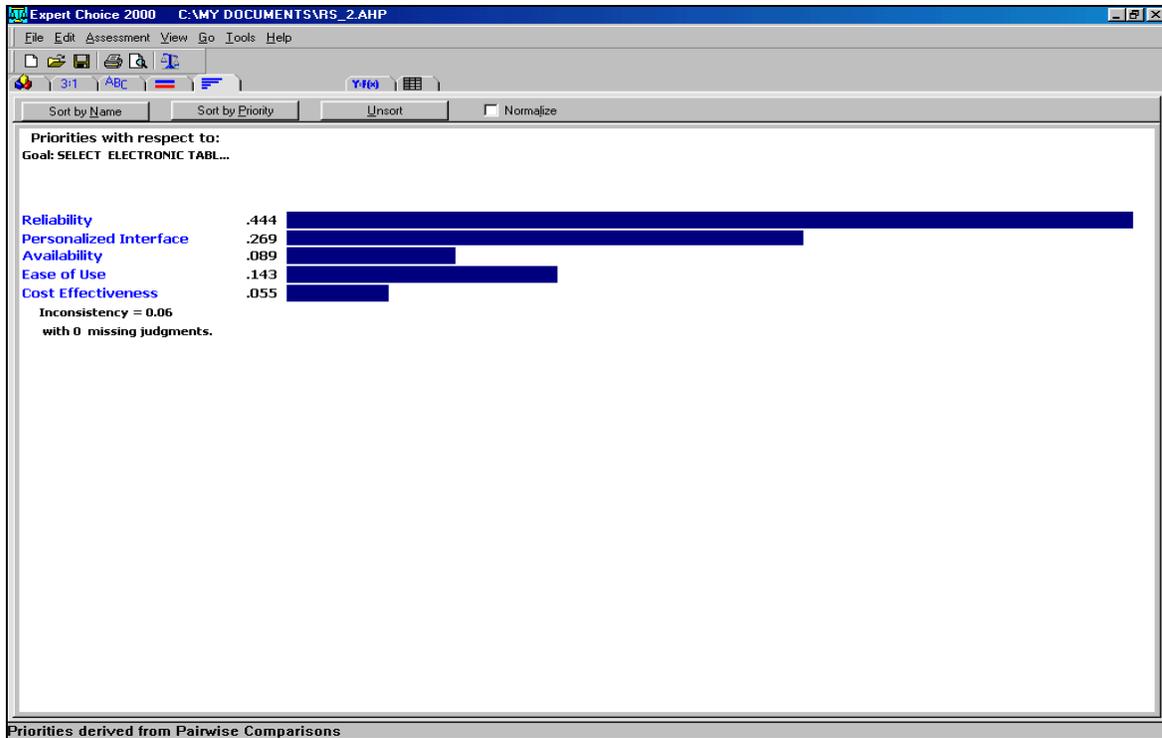
Figure 3 – Prioritization of objectives with respect to goal.

The weights derived suggests that Reliability was rated as high priority objective. Since ERB is a fairly new product in the market and given the importance that restaurants place on table reservations, it is not surprising that reliability rated as the top priority. Personalized interface rated second. Customized aesthetic consideration is important. The need for the screen or terminal of ERS to blend with the interiors of the restaurant and not seem intrusive or an eye sore, is definitely an added asset. Ease of use followed in the third position. Since table reservations are also taken over the phone by more than one person, ERS should be able to capture the information easily. If the system is not user friendly then it could result in under utilization. Availability and Cost considerations were rated low on the priorities. Since some vendors are not in a position to provide all their services to the level of optimal claim, assumptions were made and provided with concessions.

SYNTHESIS

Judgments were entered for each of the four alternatives with respect to the
objectives. This information was synthesized to achieve an overall preference. The
synthesis produces a report that evaluates and prioritizes on a ratio scale, the alternatives
in two ways: (1) ranks in relation to the overall goal, and (2) ranks each alternate with
respect to individual objectives. Figure 4 shows the Expert Choice model Synthesis with
respect to the goal.
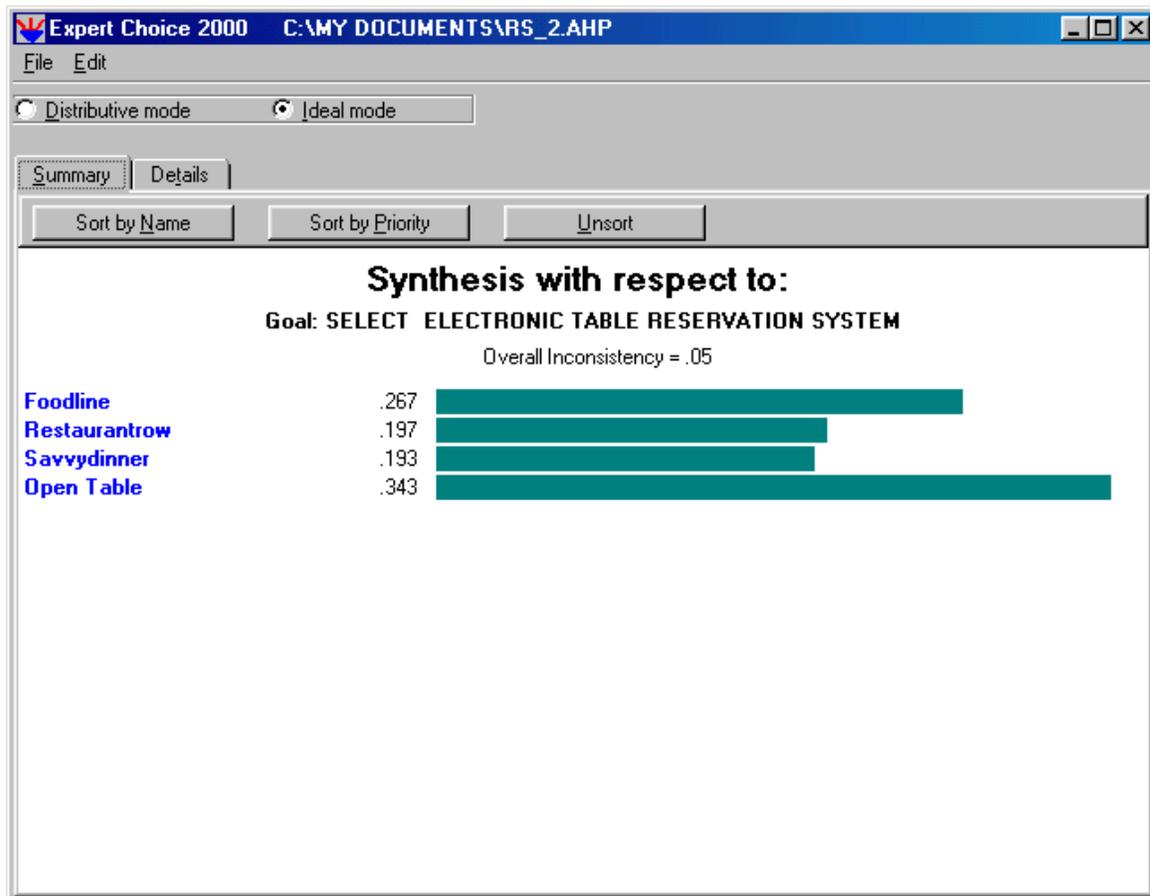
Figure 4 – Synthesis with respect to Goal.

The four alternatives, Foodline, Restaurantrow, Savvydiner and Open Table .com, were measured against all five objectives. Examining the synthesis, the ranking derived of each alternate with regard to each prioritized objective and with respect to goal was observed. The Expert Choice graph showed that with respect to Personalized Interface objective, Foodline was ranked first. Similarly Savvydiner was ranked first for Ease of use and Availability objectives.

The sensitivity analysis shows how well the various alternatives performed with respect to each of the objectives. The performance sensitivity analysis graph (Figure 5) clearly shows how Savvydiner, which ranked first in relation to Ease of use and Availability, quickly loses appeal with regards to other objectives. However, Expert Choice determined, based upon the judgments of the decision maker the decision model, that Open Table is the overall best selection.

Using the performance sensitivity analysis, individual weights can be altered to visualize the impact on other objectives and on the overall model. Further, on a future date, any changes observed in the individual weights can be incorporated in the same model to understand the impact on the overall model. Expert Choice provides other
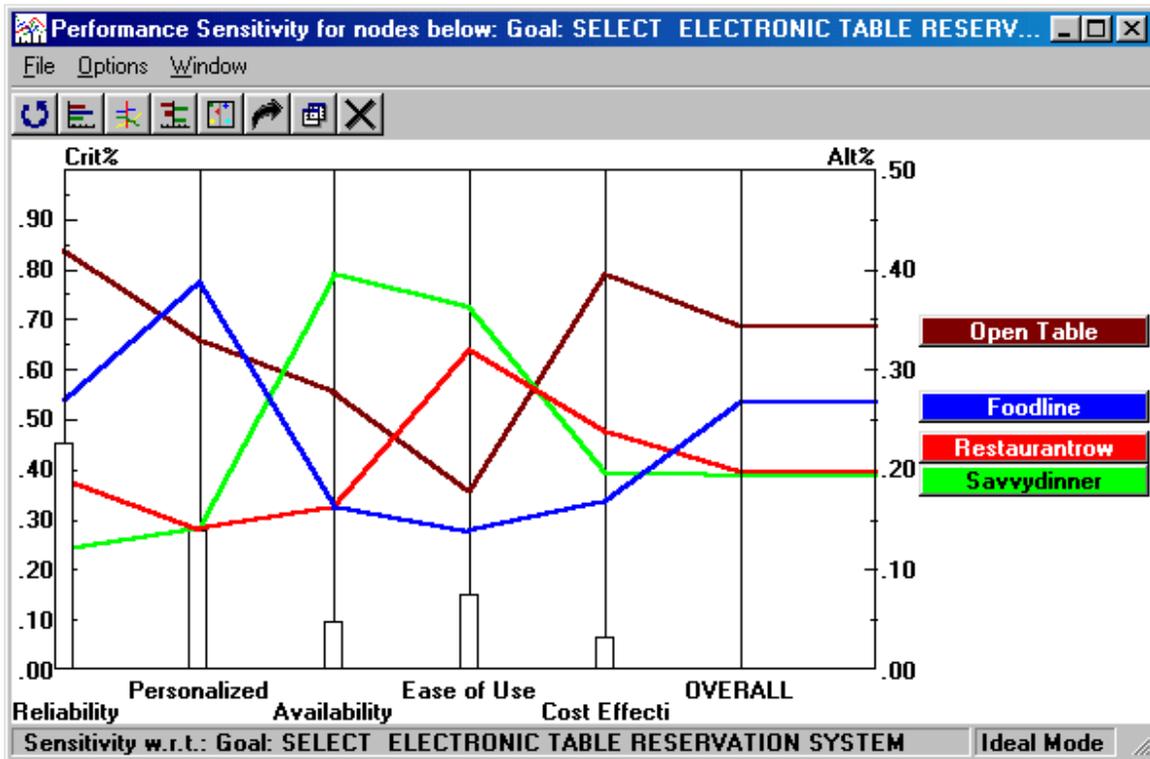
Figure 5 – Performance sensitivity graph.

Sensitivity graphs. They are gradient, dynamic, head-to-head and 2D. These different
sensitivity graphs can be used to study the results with respect to the importance of each
Individual objective, and comparative objective studies as well.

DECISION

AHP along with Expert Choice was used for the decision making process for
selection of best ERS available. This has resulted in the decision to purchase Open Table.

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