AssetDivider: A New Mediation tool in Australian Family Law

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ABSTRACT

This article describes research in a new theory of decision support in negotiation in family law mediation. AssetDivider was based on the principles of Family_Winner. As a Negotiation Decision Support System Family_Winner takes ratings assigned to items by the parties involved and develops a list of allocations to each party; based on trade-offs inherently present in the dispute. Given advice provided from our industry partners Relationships Australia (Queensland) - RAQ, AssetDivider uses an ideal "percentage split" to guide the development of an allocation list for parties. The system has been tested informally by our contacts at RAQ, and we now look forward to extensive testing and evaluation by mediators at RAQ in the near future. We hope to report on a comprehensive evaluation which will report on the effectiveness of this program in practice.

Keywords

Negotiation Support Systems, Family Law Mediation

INTRODUCTION

The focus of this research is in extending our work in interest-based negotiation to developing research into systems for use in mediations. We have developed several Negotiation Support Systems (NSS) including DEUS, Split_Up and Family_Winner [Bellucci, 2004]. As a direct result of extensive media interest in Family_Winner [Bellucci et al, 2006], we were contacted and have been in negotiations with Relationships Australia Queensland (RAQ). Relationships Australia is a relationship support service, which conducts support services across numerous areas, including family mediation, parenting courses, pre-marriage counselling, and special support services such as counselling to families affected by drought and flooding. Although the organisation operates throughout Australia, our contact is with the Queensland branch. We have been in contact with RAQ to develop a new methodology based on Family_Winner that will better represent the needs of the mediation sector.

We are conducting research with our industry partners to develop negotiation tools used in family law negotiation. In (Bellucci and Zeleznikow, 2006) we initially investigated the issue of how to add notions of fairness to interests, which we have now developed more fully in AssetDivider.

Negotiation is a process by which two or more parties conduct communication or conferences with the view of resolving differences between them (Bellucci, 2004). We believe cooperation between parties as paramount to ensuring both parties are satisfied with the outcome of the negotiation. Their involvement in the decision-making process encourages agreement with the settlement. Mutually satisfying resolutions (Bui, 1997) describe settlements arrived at by the interaction and input of disputants. Mediators agree with the need for mutually satisfying agreements and are willing to use a NDSS if it can support the realities of the negotiation in the domain. We know this because RAQ are eager to use our software.

As mentioned above, AssetDivider uses the principles of Family_Winner. The underlying principle of each system is in their use of interests. The theory which best supports our definition of negotiation support is Principled Negotiation (Fisher and Ury, 1991), developed under the Harvard Negotiation Project. It emphasizes parties look for mutual gains and focuses on the underlying values (or interests) that justify a disputant's position, as opposed to attempting negotiation solely from their positions.

Family_Winner takes a common pool of items and distributes them between two parties based on the value of associated ratings. Each item is listed with two ratings (a rating is posted by each party), which signify the item's importance to the party. A rating in Family_Winner is a number in value from 0- 100 (0 being of no importance; 100 to signify absolute importance). The algorithm to determine which items are allocated to whom works on the premise that each parties' ratings sum to 100; thereby forcing parties to set priorities. The program always checks this is the case, and if not, it realigns ratings to ensure all sum to 100. The basic premise of the system is that it allocates items based on whoever values them more. Once an item has been allocated to a party, the ratings of the remaining items are modified (according to the actions of trade-offs) to ensure the items (and their associated ratings) are ready for the next round of allocation (Bellucci, 2004).

Family_Winner was evaluated by a number of family solicitors at Victoria Legal Aid (VLA). Whilst the solicitors were very impressed with the way Family_Winner suggested trade-offs and compromises, they had one major concern – that in focusing upon negotiation, the system had ignored the issues of justice (Zeleznikow and Bellucci, 2006). For example, Family_Winner simply allocates property to parties based on their interest in the item. It does not allow for monetary values to influence the allocation process. The dollar value of items is important to the dispute because each party wants to be allocated the right or 'just' amount of money. This concept contrasts with linking an interest value to an item, which is intrinsically different. An interest is an evaluation based on the significance of the item to a person. For example, party A may be very fond of a lamp that has been passed down throughout the generations, and consequently they give it a rating of 50. The remaining items are not as important to party A, and so are given much lower ratings. Whilst using interests to negotiate is a very interesting exercise, it does not in any way reflect the dollar value of the item. This is where Family_Winner fails to support the mediation process effectively. Whilst Mediators from RAQ consider the way Family_Winner supports interest-based negotiation by setting priorities as useful; they are also concerned with the missing influence of monetary values. Hence, our new theory of negotiation support (implemented in AssetDivider) incorporates the basis of Family_Winner's allocation and trade-off strategy by utilizing both interests and an item's monetary value.

Section 2 will detail this new theory of negotiation support, and will in particularly outline differences between Family_Winner and AssetDivider. Section 3 will outline a common case and results after its presentation to AssetDivider and Family_Winner. We are expecting AssetDivider to be placed on RAQ's servers in the near future to enable its use by mediators and the program's subsequent evaluation.

NEGOTIATION CONCEPTS

Early decision-support negotiation systems primarily used Artificial Intelligence techniques to model negotiation. LDS (Peterson and Waterman et al, 1986) used rule-based reasoning to assist legal experts in settling product liability cases. SAL (Waterman *et al*., 1986) also used rule-based reasoning to help insurance claim adjusters evaluate claims related to asbestos exposure.

NEGOPLAN (Matwin et al., 1989) is a rule based system written in PROLOG which advised upon industrial disputes in the Canadian paper industry. Mediator (Kolodner and Simpson, 1989) used case retrieval and adaptation to propose solutions to international disputes, while PERSUADER (Sycara, 1993) integrated case based reasoning and decision-theoretic techniques to provide decision support to United States' industrial disputes.

Negotiation Support Systems (NSS) were primarily responsible for tracking past preferences and informing disputants about progress being made towards a solution to a conflict. We refer to these systems as template systems. Template systems assume disputants take on a passive role after the initial intake of preferences and issues, since they fail to implement any strategies that incorporate change. Modelling the dynamic properties of negotiation infers the incorporation of decision support into a traditional negotiation support system. DEUS (Zeleznikow *et al*., 1995), INTERNEG (Kersten, 1997), CBSS (Yuan *et al*., 1998), Negotiator Pro and The Art of Negotiating (Eidelman, 1993) are all template based systems.

We are most interested in extending the primary role of a template based NSS to a system capable of providing decision support. We have classified these as Negotiation Decision Support Systems (NDSS). A Negotiation Decision Support System (NDSS) supports negotiation by modelling the properties of a template NSS as well as applying functions to interpret the goals, wants and needs of the parties to provide advice on how disputes can be settled.

Our earliest NDSS was Family_Negotiator (Bellucci and Zeleznikow, 1997). It utilises a hybrid rule-based and case-based system to provide disputants with advice on how to best resolve the issues in an Australian Family Law dispute. Whilst evaluating the Family_Negotiator system, we discovered that Family Law negotiation was not an appropriate domain in which to apply either Case-based or Rule-based Reasoning, due principally to the open textured nature[1], of the domain. Nor did the overall framework of Family_Negotiator provide in-depth solutions expected from real-life negotiations.

AdjustWinner (Bellucci and Zeleznikow, 1998), uses a utility function to achieve equal distribution of the common pool. The algorithm used in the system was the Adjusted Winner procedure (Brams and Taylor, 1996). AdjustWinner resolves a dispute by dividing issues and items among disputants, through a mathematical manipulation of numeric preferences. Although not classed as a NSS, AdjustWinner provided the framework for decision-making support that was later incorporated into a NSS to form Family_Winner.

Family_Winner is a negotiation decision support system that allocates items to one of two parties in the dispute. Family_Winner's method of decision support involves a complex number of techniques, including the

[1] Open textured legal predicates contain questions that cannot be structured in the form of production rules or logical propositions and which require some legal knowledge on the part of the user in order to answer

incorporation of an Issue Decomposition Hierarchy, a Compensation and Trade-off strategy, and an Allocation strategy. The trade-offs pertaining to a disputant are graphically displayed through a series of trade-off maps, while an Issue Decomposition Hierarchy enables disputants to decompose issues to any required level of specification.

Mediator, Persuader, NEGOPLAN and Family_Negotiator are considered to be intelligent systems since they can generate solutions using the system's internal knowledge as well as users input. All incorporate some level of negotiation support, together with the ability to provide users with a resolution to the current problem.

Artificial Intelligence techniques such as case-based, rule-based and hybrid reasoning have had mixed degrees of success in providing negotiation support. The Mediator proved quite successful in its retrieval and adaptation of previous cases. NEGOPLAN used rule-based reasoning to successfully model Canadian industrial disputes, while PERSUADER successfully modeled US industrial disputes through the use of a hybrid case and rule-based methodology. Family_Negotiator however, did not perform to its initial expectations, primarily due to its relatively simple modeling of the domain.

Apart from AdjustWinner, most of the systems surveyed above do not make allowances for measuring the fairness or justness of the settlement. Further, most of the systems discussed are rarely based on theories derived from practice or empirical studies. For example, INSPIRE (Kersten, 1997) and SmartSettle (Thiessen and McMahon, 2000) use Pareto Optimisation techniques to suggest optimal solutions. Our goal is to provide feasible suggested solutions to the conflict that are acceptable to the user, which for our purposes does not involve searching for optimal solutions as in Pareto optimisation. We have found such techniques are difficult to use in our domain. The best we can arrive at computationally fair solutions is to ensure are solutions are acceptable (ie approximately optimal or fair solutions)[2].

AssetDivider is our latest development in negotiation support systems. It extends on Family_Winner by modifying its' decision making theory to provide advice based on interests and the monetary value of items. Family_Winner provides advice based only on interests (known in the system as ratings) given by the disputants. The rest of the paper will discuss the architecture and theories behind Asset Divider by making reference to its predecessor, Family_Winner. Section 3 will illustrate how both systems work though an example.

2 Many thanks to a reviewer who made this point.

THEORY IMPLEMENTED INTO ASSETDIVIDER

This section will discuss the theory used to develop AssetDivider. Since the system was developed from the theories in Family_Winner; we will be drawing attention to AssetDivider's differences and similarities in relation to Family_Winner. We will be assuming the reader has no prior knowledge of AssetDivider's predecessor.

Family_Winner and AssetDivider's input and output

Family_Winner takes a list of issues (usually items for distribution between two parties) and allocates them based on a rating given by the parties in dispute. Two sets of ratings are provided, one for each party in dispute. This rating (a numerical value between 0 and 100) does not represent the monetary value of the item, instead it symbolises how important the item is to the party. We assume a party wants to keep an item they feel is important to them.

Similarly, AssetDivider accepts a list of items together with ratings (two per item) to indicate the item's importance to a party. In addition it also accepts the current monetary value of each item in dispute. We assume this dollar value has been negotiated (if necessary) before AssetDivider is used[3]. Hence, only one dollar value is entered per item. The proposed percentage split is also entered; this reflects what percentage of the common pool each party is likely to receive in the settlement. The system is not capable of determining the percentage split; this figure has to be derived from the mediator's knowledge in past cases or from computer systems such as SplitUp (Stranieri et al, 1999), which can provide a percentage split given certain characteristics and features of divorce cases.

AssetDivider's output consists of a list of items allocated to each party. All of the items (except one) on the allocation lists were provided in the intake screen by the disputants. The additional item is a "payout" item, which reflects the amount of money a disputant would need to pay the other party for the items they have been allocated and collectively are valued greater than the percentage split offers them. For example, party A have been allocated a total value of $100,000 in assets, and party B $115, 000. Under a 50/50 % split, party B will need to pay $15,000 to party A to satisfy the percentage split. Family_Winner in contrast does not accommodate payouts since its focus was in distributing items according to interests only.

Family_Winner and AssetDivider's Allocation Strategy

[3] Sometimes the parties cannot agree on the monetary value of the item. In this case, mediators would reference standard objective tables and the like to reach a consensus. For example, if parties are arguing over the value of a car, then mediators may access websites that gave independent valuations, such as redbook.com.au.

The order by which issues are allocated is of paramount importance in a negotiation. Professional mediators have indicated issues attracting little disputation should be presented foremost for allocation, so as to help foster a positive environment in which to negotiate. By summing the ratings of issues to 100, the level of discourse surrounding an issue can be measured by calculating the numerical distance between the ratings of an issue assigned by each of the parties. For example, if two parties assign the same high rating to an item, then it is expected the level of disputation surrounding the issue to be substantial (because both parties want the item), whereas large differences between the ratings of parties indicate the issue will be resolved much more quickly. Both Family_Winner and AssetDivider use this strategy in deciding the order by which items are presented for allocation.

Family_Winner allocates items to parties according to whoever values them the most. Once an item has been allocated to a party, the remaining ratings (of items still in dispute) are changed by trade-off equations. These modifications try to mimic the effect losing or gaining an item will have on the rest of the items still in dispute. The equations directly modify ratings by comparing each one against that of the item recently lost or won (each party's set of ratings are modified as a result of an allocation). The equations update ratings based on a number of variables - whether the item allocated was lost or gained, the value of the allocated item in relation to items still in dispute and the value of the item whose rating will change as a result. In Family_Winner, the extent to which ratings were modified was determined through an analysis of data we collected from mediation cases provided by the Australian Institute of Family Studies. These are detailed in (Bellucci, 2004).

AssetDivider accepts items, a rating per issue and the monetary value of an item (unlike Family_Winner, which does not consider the monetary value of items at all). The allocation strategy as described above is similar in Family_Winner, except that the equations have been modified to reflect greater fairness by considering the price of an item. AssetDivider's allocation strategy works by provisionally allocating an item to the party whose rating is the highest. It then checks the dollar value of items it has been allocated previously (that is, their current list of items), the dollar value of the item presently allocated and the dollar amount permitted under the percentage split given by mediators. If by allocating the item in question the party exceeds its permitted amount, the item is removed from its allocation list and placed back into negotiation. In this case, the item has not been allocated to a party. If the dollar value of the item was within the limits of the amount permitted under the percentage split rule, then the allocation proceeds. Once an allocation has occurred the 'losing party' is compensated by the trade-off equations modifying ratings (whereas in Family_Winner both winning and losing parties were affected).

As in Family_Winner, in AssetDivider, the equations used to modify ratings depend on a number of variables. One of these is the rating of the issue allocated. The following table (Table 1) lists the ratings and corresponding the equations that apply.

Rating range of issue allocated	**If this issue is lost**
<= 10	GraphLose0
11 to 20	GraphLose1
21 to 35	Graphlose 2
36 to 55	Graphlose3
> 55	Graphlose4

Table 1: Rating ranges and corresponding equations.

The following pseudocode gives the reader an indication of what equations are fired and under what conditions. Where RR = Rating(issue in dispute) – Rating(issue lost).

```
if party has lost the issue
  If issue's rating was <= 10 then  /* graphlose0 */
        If RR between -10 and 0 then %change is
        0.5* RR + 5
        if RR is between 0 and 10, then %change
        = 5
        If RR is between 11 and 25 then %change
        = -2/15*RR + 6
        If RR is between 26 and 100 then
        %change = -5/75*RR + 7
  Endif

  if issue's rating was between 11 to 20 then  /*
graphlose1 */
        If RR is –20 to 0 then %change = 5
        If RR is between 0 and 89, then
        %change = -5/89RR + 5
            Endif

  if issue's rating was between 21 and 35 then  /*
graphlose2*/
        if RR is between –40 and –10, then
        %change is -5/30 *RR + 3
        if RR is between –10 and 0 then
        %change is 5/10RR + 10
        If RR is between 0 and 15 then % change
        = -5/15RR + 10
        If RR is between 15 and 44 then
        %change = -5/29RR + 8
        Endif
```

if issue's rating was between 36 and 55 then **/*graphlose3*/**

If RR is –55 and –25, then %change = 15%

If RR is between –25 and –20 then %change = -RR -8

If RR is between –20 and 0 then %change = 5/20RR + 15

If RR is between 0 and 70, then %change = -15/70 + 15

Endif

if issue's rating was above 55, then **/*graphlose4 */**

If RR is between –100 and 0 then %change is 15%.

Endif

endif /*if item was lost*/

elseif /*item was won*/

No change

EndIf

The above equations were developed using the equations in Family_Winner (that had been derived from data, as specified above). Results from some case studies using Family_Winner revealed it was not always fair to the losing side if the winning side received extra points (as was the case in Family_Winner). AssetDivider therefore makes no changes to the ratings of the winning side.

Family_Winner had also attracted some criticism concerning the scaling of ratings to sum to 100 only once (at the initial intake). After the system removed an item from the negotiation (upon allocation); it was argued that the remaining ratings in dispute should be scaled to 100 again. The reasoning here is to ensure that every item has been allocated with the same rules in place (that is all ratings add to 100) as in the first item's allocation. Whilst theoretically this reasoning is quite sound; there was a problem with implementing this in practise. Once we implemented this new methodology, we found as the number of issues in dispute diminished, the difference between the ratings of an item (valued by both parties) was very similar. This result defeated the reasoning behind the introduction of trade-offs. It is also a problem when ratings are dissimilar since we do not know to which party we should allocate the item. The reason why AssetDivider does not scale all ratings to 100 following allocation is to ensure the ratings still reflect the disputant priorities they set initially in the first instance. The trade-off equations allow for some minimal change of ratings, which is most evident when the system allocates items that are valued similarly.

User Interface Issues

Significant improvements to the user interface have been made to AssetDivider. There is more space on screen for users (we presume will be Mediators) to enter additional information about the case. In addition, we have added reporting services, which will print case details such as case identifiers (case number), initial ratings given by users, ratings upon allocation and a final summary of the solutions arrived at by the system. This summary will include, for each solution, the allocation list for each party and the monetary value of each 'allocation list'.

In Family_Winner, diagrams were shown on screen to describe the current 'state of play', that is the items in dispute, their values (ratings), and Relationship Ratings (RR) between items. Relationship ratings are used to reflect the importance a party places on one item in relation to another. Mathematically, the RR is the absolute difference between the ratings of two items. We named these diagrams Trade-off Maps, which are based on the structure of Constraint Diagrams. They were shown on screen just before an allocation occurs, in the attempt to help users understand how Family_Winner allocates items. In developing AssetDivider, we decided not to include these Trade-off Maps, as informal discussions with users revealed they simply helped to confuse users – and contrary to the reason why they were developed – did not aid user understanding of how the system arrived at its solution. In conjunction with displaying Trade-off Maps, Family_Winner would display new ratings as they change; that is every allocation was displayed sequentially on screen. This made using Family_Winner quite tedious; as the user had to clear each screen for every allocation that occurred. AssetDivider displays the solutions it has arrived at only once; at which point the user can choose to print or save the solutions.

In addition, the system has been designed so users can print a number of percentage split scenarios per case very easily. Once the information pertaining to a case has been entered, the user can press the back button on the screen to arrive at the screen where the user can change the percentage split, and then press the 'allocate' button on the next screen to see the results. As a mediator commented to us; it is a very useful feature if it allows clients to view allocation lists given different percentage split scenarios.

AN EXAMPLE USING ASSETDIVIDER AND FAMILY_WINNER

This section will review the process and outcome of a Family Law case on AssetDivider and Family_Winner. The aim of this exercise is to demonstrate the AssetDivider's operation in practice and to compare and contrast the solutions from each system.

The case description of this real-life divorce scenario and the relative point allocations have been extracted from [Brams and Taylor, 1996] page 105. The case Jolis v Jolis, began on December 5th, 1980, and concluded on October 30th, 1981. The case was heard in

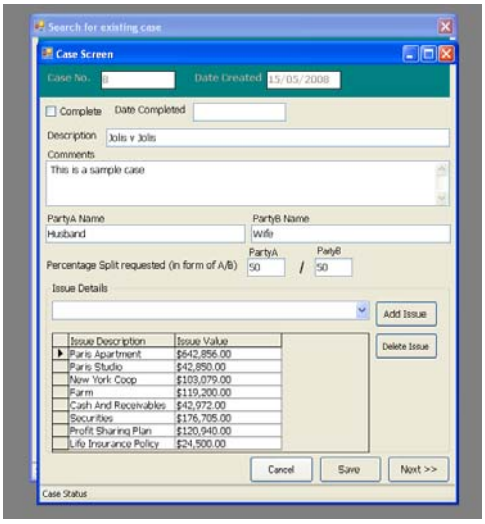
New York City, at a time when a new law subjecting all martial property to a 50 –50 split was being introduced. The couple had been married for 41 years, of which 33 they spent together. The Wife had given up her early and successful career to care for the couple's four sons. The couple had lived together in substantial wealth, primarily due to the expansion of the Husband's diamond business.

There are both real estate and liquid assets to be divided. The Husband's diamond business is not treated as marital property as its growth was primarily due to market forces, especially the diamond boom of the 1970's. The children's welfare is not included as an issue as they are no longer considered minors at the time of separation.

Issues	**H's ratings**	**W's ratings**	**Dollar value of asset**
Paris Apartment	35	55	$642,856
Paris Studio	6	1	$42,850
New York Coop	8	1	$103,079
Farm	8	1	$119,200
Cash And Receivables	5	6	$42,972
Securities	18	17	$176,705
Profit Sharing Plan	15	15	$120,940
Life Insurance Policy	5	4	$24,500
Total	100	100	$1,273,102

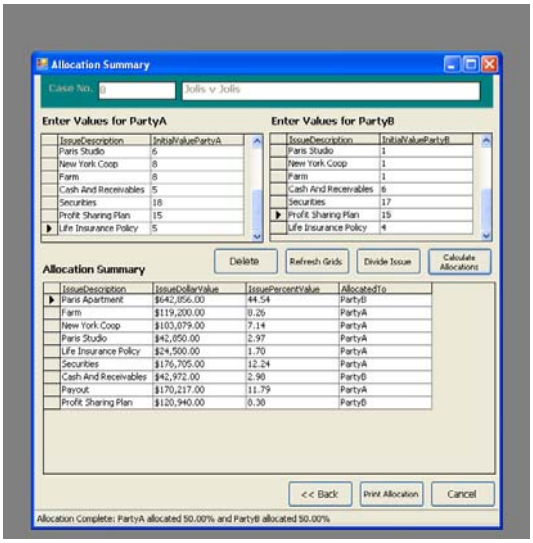
Table 6.1. Point allocations and dollar valuations [Brams and Taylor, 1996], page 105.

First we will discuss the case when presented to AssetDivider. The relevant case information is entered in screen 1.



Screen 1: Intake screen for negotiation

The next screen (screen 2) that appears lists the issues in dispute, their ratings and the allocation summary, which is filled in appropriately when the user clicks button "Calculate allocations". In the Allocation Summary table, we can see that the ratings for Husband (party A) and Wife (party B) are scaled to add to 100 in columns ComputedValuePartyA and ComputedValuePartyB respectively. It is then these ratings that are used to drive the allocation.



Screen 2: Final screen of AssetDivider. It gives the user the allocation list for each party; which includes a payout figure allocated accordingly.

According to AssetDivider, the preferred outcome, taking into account each party's' priorities (ratings) and percentage split indicated:

Husband (Party A)	**Value of**	**Wife (Party B)**	**Value of**
Farm	$119,200	*Paris Apartment*	$642,856
New York Coop	$103,079	*Cash and receivables*	$42,972
Paris Studio	$42,850	*Profit Sharing Plan*	$120,940
Life Insurance Policy	$24,500		
Securities	$176,705		
Payout	$170,217		-$170,217
Total:	$636,551	*Total:*	$636551

Table 3: Allocation list for Husband (party A) and Wife (party B) using AssetDivider.

In analysing the case, we can see that both parties wanted the Paris Apartment above all else; though Wife

(party B) valued it more than the husband (Party A). As a consequence, both parties gave the rest of the items relatively low values. On the whole, both parties received the items they valued considerably (except for Party A's loss of Paris Apartment to Party B – since she valued it much greater). The only item valued equally by the parties was profit-sharing plan (15). It was given to Party B. Party B also need to pay out Party A the amount of 170,217 to ensure the split is exactly 50%.

Details of the Jolis v Jolis case were presented to Family_Winner, with the following results (table 4).

Husband's Items (party A)	Dollar value	Wife's Items (party B)	Dollar value
New York Coop	$103,079	Paris Apartment	$642,856
Farm	$119,200	Profit Sharing Plan	$120,940
Paris Studio	$42,850	Cash And Receivables	$42,972
Securities	$176,705		
Life Insurance	$24,500		
Total:	$466,334	Total:	$806,768

Table: 4. Allocation list for Husband (Party A) and Wife (Party B) using Family_Winner.

Family_Winner advice is to split the common pool 36.6 (Husband) and 63.4 (wife). Since Family_Winner allocated items soley using interests, we will compare each system's resulting the allocation list and not by the percentage split (amount of money each side will receive).

Although the Husband gained 50 % more issues than the Wife, the solution is considered a fair outcome once analysis is performed on the initial ratings provided by disputants. It was expected that *Paris Apartment* be allocated to the Husband, as the difference between the two ratings was extensive. Similarly, it was expected the issues of *Paris Studio, New York Coop and Farm* were to be allocated to the Husband, as he valued them substantially higher than the Wife's corresponding ratings. The remaining issues of *Cash and Receivables, Securities, Profit-sharing Plan and Life Insurance Policy* were not issues clearly identifiable with allocation to a party, as their ratings were closely weighted. Taking two issues at a time, *Cash and Receivables* and *Life Insurance Policy* were issues whose initial weighted values, assigned by both parties, were separated by just one point. It is reasonable to expect one party to be allocated either *Cash And Receivables* or *Life Insurance Policy*, with the remaining issue being given to the opposing party. *Cash And receivables* is allocated to the Wife, while *Life Insurance Policy* was allocated to the Husband. The remaining issues were *Securities* and *Profit-sharing Plan.* Again these issues were initially valued similarly by the disputants, and were allocated in a fashion similar to that of *Cash and Receivables* and *Life Insurance Policy*. *Securities* were allocated to the Husband, while *Profit sharing Plan* was allocated to the Wife.

Interestingly, even though there are two different algorithms implemented in the systems, the eventual allocation lists from Family_Winner and AssetDivider were identical. Due to space limitations, we are unable to detail the effect of trade-off equations and in particular their contribution to attaining similar allocation lists. The reader can assume the trade-off equations did not influence the allocation greatly, as all items were allocated to those who wanted them the most.

CONCLUSION AND FUTURE WORK

This article aims to describe AssetDivider as a new Negotiation Decision Support System (NDSS) in family law mediation, and does so by making mention of its predecessor, Family_Winner. Family_Winner was developed from the theories in the author's PhD, and AssetDivider represents an improved version. An obvious question to ask is how AssetDivider is different from Family_Winner. There are a number of similarities and differences, particularly in the decision making module of the system. In both systems the interest (rating given to symbolise the importance of the item to the party) is used to temporarily assign the asset to a party. AssetDivider tests whether the asset's dollar value exceeds their allowable amount (given by the percentage split set by the mediator). We have also improved the trade-off strategy and have made extensive improvements to its user interface and reporting services.

We are currently assessing AssetDivider via the CCCF System Operational Context Checklist (Hall and Zeleznikow, 2003). As a result of this evaluation, we expect to compose questionnaires that ask uses to comment on the operation and use of the system. In order to evaluate successfully, we need to understand how the program is likely to be used. On a recent visit to RAQ, we were told mediators may use the program to move clients away from trying to attain a particular percentage of the value of the common pool. Often lawyers or family friends may have provided this advice. There may also be issues with a 'loss of face' if they do not fight for a percentage they consider fair. The program used in this way will help clients see what items make up the given percentage split. They may move their position if they see what items (including the associated payout) they are likely to receive.

RAQ were excited by AssetDivider, as it potentially will provide mediators confidence in being able to effectively mediate property-related issues. Most

family law mediators have degrees in social work or law. Their expertise mainly lies in mediating child-related issues such as visitation schedules, primary care and other child related issues. By doing so, it is expected clients will be able to settle both child-related and property issues with mediators; thereby reducing their reliance on lawyers and of course often exuberant associated costs.

AssetDivider has not been extensively evaluated at this point in time. It is expected mediators at RAQ will test and evaluate the system in the near future. We are expecting results from testing to indicate further improvements to the decision making module and in particularly to the user interface. Our research has revealed a lack of negotiation support systems used in family law. We hope our collaboration with RAQ will enable AssetDivider to be used in their organisation, being the first negotiation support systems to do so.

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