



DSS in Insurance Claims Departments: Personal Injury Evaluation Systems

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ABSTRACT *An increasing number of insurance claims departments use Personal Injury Evaluation Systems (PIES) to adjudicate the liability and settlement value of personal injury claims. Like the courts these claims departments face pressures from excessive caseloads, cost containment issues, administrative problems and rising expectations from those dealing with claims. Insurance claims departments, just like the judiciary, have sought relief in technology. While Judicial Decision Support Systems (JDSS) assist the courts in their decisions, preliminary evidence suggests a difference in the application and use of PIES by adjusters in determining personal injury claims. There are considerable philosophical and policy differences between the court's use of JDSS and the insurance industry's application of PIES in situations where both processes impact the personal well-being of both victim and offender. The evidence gathered to date suggests identifiable common areas as well as vast differences in the uses of JDSS and PIES. But data are not complete. Claims department use of PIES in terms of neutrality of data, choice and utility, ownership as well as discretion, consistency and predictability, suggests a possible but yet unconfirmed, strategic and partisan application. Further, the use of the powerful tools embedded within PIES may empower less trained adjusters with more than a support for decision-making. Evidence collected to date suggests that PIES may be an increasingly indispensable adjudicatory tool, controlling the claims process and increasingly eliminating the need for judgment.*

Introduction

Insurance claims departments daily render decisions which impact the health and well-being of both insureds and third parties who damages for personal injuries. Just as the courts deal with personal injury claims and the application of the law to the facts of the case, insurance adjusters evaluate and determine liability issues and settlement value of personal injury claims. The courts have wrestled with management issues such as: heavy caseloads, increasingly complex cases, ever-widening jurisdictions, spiraling costs, needs for better

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access to justice, growing expectations and greater demands for efficiency of administration (Tata, 1998). Insurance claims departments are experiencing tremendous pressures from same or similar factors. There are very different background factors which impact the decision-making processes within the claims departments.

The evidence underpinning this study is part of an ongoing study of the use of Personal Injury Evaluation Systems (PIES) by insurance claims departments. A qualitative pilot study made up of a questionnaire responses by 30 of the UK's largest insurance carriers, days of observation of claims handling and interviews with claims representatives, management and insurance lawyers has afforded helpful insights into this new area of technical application. Review of PIES manuals and technical data have increased knowledge of strategic use and application of these systems within the claims context. By no means complete, a beginning analysis of the use of PIES and their functional application is slowly emerging. Further data collection is required: the completion of a closed claim file review and comparison of tradition claims handling processes and with those which have applied PIES to claims evaluation, for example. With the stage of research in mind, this paper discusses what the preliminary data indicate concerning PIES and how further study may useful to compliment and increase the understanding of JDSS.

To understand the increasing reliance upon Decision Support Systems (DSS) by insurance companies and to contrast this movement to the changes occurring within the court system, one must examine the insurance industry itself as well as the claims department.

Insurance Industry

The insurance industry has faced unprecedented challenges. It has converted from a specialized insurance provider to a full capacity financial institution—operating in arenas well beyond traditional insurance activities. Insurance companies have faced mounting challenges: intense competition both foreign and domestic; the need to improve operations and efficiency; new industry regulations; the need for 'radical' realignment of distribution channels; and better use of technology. Industry responses to these challenges have included: increasing mergers with and acquisitions of competitors—resulting in fewer players; reductions of staff; emergence of direct line companies whose operations are streamlined; and increased investment in IT as well as other systems including expert systems (Tillinghast-Towers Perrin, 1998). Cost of claims and claims handling represent is the single biggest factor impacting insurance profitability and its competitive edge. In a declining field of insurance 'players', the promise of benefits of IT and especially of DSS and expert systems (ES) coincide with competition strategies.

Insurance Claims Department

Claims payment and costs of claims handling represent 90 cents out of every 100 cents of premium collected (Merrill-Lynch, 1998). Of major concern is the increasing cost of bodily injury claims. This is due to increased survival of catastrophic injury victims, better medical treatment, higher court awards, contingent lawyer fees, to name a few. Insurance companies are seeking solutions to these challenges, not only by mergers, strategic partnering and cutting overheads, but by using technology to its best advantage to reduce claims costs. While the claims department is on the front line of paying out claims funds, it is considered a 'back room' operation (Person, 1999).

Hierarchically, the claims department manager has claims supervisors reporting to him. Supervisors maintain close control over line adjusters who actually handle the claims of both insured and third parties. Each adjuster will handle from 300 to 600 active claims files (Person, 1999). The amount in dispute determines the level of handling and the reporting procedures of the claims handler to which it is assigned. The claims department itself is governed by the company claims handling manual which is consulted throughout the claim (Quinley, 1992). Dramatic shifts in the experience level of the adjuster, reductions in staff and an increased emphasis on technology support reflect current trends in this area of claims handling. Generally, the adjuster handling a personal injury claim will seek to settle the claim for the least amount reasonably possible (while not the subject of this paper, treatment of insured differs from that afforded third parties).

A growing number of claims departments are using a personal injury evaluation systems (PIES) in claims adjudication. It is important to examine the use of PIES in a civil, private regulatory context in contrast to the use of JDSS in the criminal courts.

Comparison of Court and Insurance Claims Department DSS

Both courts and a growing number of insurance claims departments have relied upon new technologies to support their decision-making processes. Both share similarities as well as distinctions in their organization, objectives and purposes. This is true as well in their respective approaches to decision-making on matters of compensation claims/cases. Similarities may include: highly hierarchal, structured organizations; staff with diminishing skills levels; increasingly inundated with paper work and processing; and budgetary limitations within which they must work. Furthermore, both must decide ever increasingly complex claims issues (factual, legal, medical, economic, various issues associated with ranges of expertise). Human tragedy washes through both processes.

Similar Objectives

Both courts and claims departments have implemented various technologies useful in carrying out their administrative and decision-making objectives. Both organizations require e-mail facilities, intranet and internet use, imaging capabilities and access to the web sites as well as the limited use of CD-ROM (Tata, 1998). Both rely upon data storage, electronic filing and limited access potential. Evidence suggests there is a possible though limited range of similar goals in the use of DSS: consistency, more timely analysis, access to expertise, some form of predictability, decision support and supervisory functions (Hassett, 1992; Person, 1999). DSS for both judges and adjusters closes an administrative gap where there are fewer and fewer qualified staff available to perform decision-making tasks. Finally, the decision-maker will be the user of the DSS.

Differences between Court and Claims Department

There are differences in the objectives, goals, and organizational approach to decision-making within the two organizations. The courts provide a neutral arena in which disputes are resolved. Procedural and evidentiary rules afford protection of the rights of the parties. The courts, as a public forum in most instances, provide access and transparency. Court decisions theoretically reflect the values of the community. They are individualized to a

specific situation. Following a court verdict, its decision may be reviewed by a higher court. There are other very important aspects of court responsibility.

Claims departments differ in many respects. The claims department is a part of a for-profit business. Because they impact profits, claims are paid only after the claims department determines that the payment is justified. Unlike the courts, there are no procedural protections available to the claimant. Private rules and internal guidelines, the claims adjuster's own interpretation of law, medical prognoses and quantum reports are the standards by which liability is determined and compensation evaluate (Person, 1999). These rules are not accessible to the claimant nor is there transparency. There is no appeals process available, without resort to litigation. The claims adjuster acts as judge and jury during the process of the claim, its investigation, evaluation, negotiation and settlement. The guidelines of the claims handling policy manual, the experience of the adjuster, the consultation with fellow adjusters and technical support such as PIES determine the questions of liability and the compensation value of the personal injury claim (Person, 1999).

Role of Technological Support

The role of technological support within the claims department differs from judiciary's use of IT and DSS. The claims department has a vast array of IT available to service a claim. If the insured is claiming, the company can video property damage, and relay it immediately to a damage specialist who can give a damage appraisal immediately. The insured can secure a replacement vehicle by phone. Injuries are pre-approved and company authorized specialists can be consulted, etc. The insured is the beneficiary of this technology. But the third party claimant, who is not the party at interest in the contract of insurance, almost immediately steps into an adversarial situation, where technology has a very different impact (Person, 1999). Common claims practice allows the adjuster to turn to investigative databases, prior claims databases; run background checks; consult expertise via internet, intranet or web sites. Embedded systems in several instances may provide legal analysis of liability issues (Person, 1999).

Technology takes on and supports the adversarial role of the adjuster. DSS or ES such PIES as we shall see have potentially an aggressive and adversarial application—partisan, non-accessible—to the personal injury claim. DSS plays a very vital role in the delivery of compensation in the civil context.

Background of IT and ES in Insurance

Beginning with the addressograph in the 1900s and continuing to the present with ES, the insurance industry has continued its heavy reliance upon technology (Cracknell, 1989). The industry considers IT investment as a necessity for survival (Tillinghast-Towers Perrin, 1998). It is the most effective tool to reduce costs and claims expenses, to train staff and to better compete in a market where the player are dwindling (Tillinghast-Towers Perrin, 1998). UK composite companies have spent almost 1 billion pounds on technology and that figure will increase (Dresdner, 1998). Key technologies are: electronic commerce, information systems, and image and workflow. Expert systems and the budget for such systems are increasing (Person, 1999).

Emergence of ES in Claims Evaluation

Processing of information and data management within an insurance claims department required the use of electronic technology to battle the overwhelming amounts of paperwork handled by the adjusters. Beginning with the Airies Club insurance companies explored the use of ES in underwriting evaluation assistance (Bramer, 1991). In the 1990s, however, insurance began to look to ES as its 'lifeline' for solutions to claims decision-making (Schwartz, 1996) ES was used initially for underwriting and fraud. Claims evaluation and adjudication is a relatively late arrival (Bramer, 1991). Claims has heretofore has a rather low level of technology use within the industry (Bolger, 1992).

Expert systems slowly began to evolve in claims evaluation process. Claims departments suddenly discovered that there were pressing problems confronting them There were fewer experienced claims handlers with years of expertise available due to downsizing. Greater use of lower level associates spread throughout claims departments. ES was needed to free up the use of remaining expert's time. ES gave less skilled associates to access more complete data. Prior problems with inconsistent data gathering made ES appealing (Uffenheimer, 1997). ES applications within the industry included: training of non-expert claims associates; advice-giving to low level claims handlers; and DSS where users are experts who needed to supplement their expertise (Bolger, 1992). DSS itself focused upon such applications as: forecasting risks, claims losses and reserving; customer direct access; and the avoidance of 'gut-feeling' decisions (Uffenheimer, 1997). Despite the above efforts there still remained the need for skilled claims handlers in the evaluation of personal injury claims (Bolger, 1992).

Personal Injury Claims Dimension

Growing numbers of claims departments are turning to PIES to assist adjusters who make the personal injury evaluation decision. Rule-based systems (AION-DS basic systems) analyze, through data-mining, large quantities of data in order to create knowledge bases. Experienced claims handlers and other outside experts engineered large repositories of insurance, legal and medical expertise to which the line adjuster is guided by 'if ... then' questions. Other applications include: prior claims experience; disability tables; general injuries schedule; court decisions on personal injury cases; optimal recovery period tables; investigative access; liability evaluation; recommended medical specialists; and policy provisions (Tanner, 1995). Conclusions based upon the severity of the injury and other factors of liability and treatment form the claim evaluation recommendation (Person, 1999).

Domain and Knowledge/Data Representation

The insurance industry has applied the following definition of ES as: 'Modeling, by computer of expert knowledge in a domain, such that the resulting system can offer intelligent advice or take intelligent decisions' (it further calls for the system to justify the logic and reasoning of the decision) (Bolger, 1992). PIES has claimed to have over 13,000 rules covering personal injury claims as well a database covering 600 different kinds of injuries (Person, 1999). In-house experts (seasoned adjusters) as well as other expertise are used to form the knowledge base. They compare profiles of standard injuries to valuation tables. The valuation was then incorporated into the PIES program.

Who are the experts? How are they selected? How are their rules approved by claims management? Do Susskind's selection criteria fully apply (Susskind, 1987)? In one case, six of the companies top experienced claims handlers sat in a closed room and hammered out the rules and evaluation of injuries which would form the knowledge base of the system (Person, 1999). Industry answers the criteria affirmatively: claims issues are complex, subjective, repetitive; well-formed, clearly structured, high volume, static knowledge context. The final conclusion, however, may be different. Knowledge elicitation in claims is usually public knowledge, company knowledge and private knowledge. These are all most difficult to elicit (Quinley, 1992).

Favored language was expert shells, followed by Prolog, Lisp. For DSS to be effective within an insurance context there should be a comprehensive information provider which is fully integrated. This is a problem (Person, 1999). Lack of in-house experts and poorly integrated ES shells are cited as ongoing areas of concern (Bolger, 1992).

Values Model in JDSS and PIES

It is perhaps helpful to compare the use of JDSS by the courts to the use of Personal Injury Evaluation Systems or similar adjudication programs as implemented in insurance claims departments. While most present uses of JDSS were in a criminal sentencing context, a comparison of the application of PIES in a civil, personal injury context, is helpful. (The works of Tata and Hassett have been very useful. The model chosen here is a composite of their work in criminal court applications.) Of particular importance are the factors of neutrality of data, choice and utility, ownership, discretion. Equally important are the factors of consistency, predictability, reviewability and individualization of outcomes (Tata, 1998).

The process of decision-making and the application of DSS to personal injury compensation is part of an ongoing study which is incorporated into the finding suggested by this comparison with JDSS applications (Person, 1999). An important comparative source is the study of the Scottish Sentencing Information System (SIS) (Tata, 1998). In looking at the insurance claims application of the PIES: does it retain neutrality, ownership, access, etc, or is it a the decision-maker rather than a support systems? Is it no more than a guideline?

Neutrality of Data

Because of its use by the judiciary, SIS and other similar programs place particular importance on the aspect of data neutrality (Tata, 1998). By incorporating previous court or regulatory decisions and constructing the program with the assistance and participation of the user—the judges themselves—the appearance of neutrality was somewhat achieved. In the case of SIS, the data were meaningful to the court and presented in within a familiar context (Tata, 1998).

Personal injury evaluation systems are distinguishable in their use and application. The knowledge rules and related data come not only from previous case settlements, but from company experts (seasoned, experienced adjustors), as well as from other experts outside of the claims department. The data addressed the personal injury claim in terms of: nature and extent of injury, claimant's work history, determination of whether an IME (independent examination) is necessary. Case management capability includes recommending approved specialists. PIES worked out course of treatment, length of time necessary and treatment budget. Prior claims history as well as activity checks could be recommended.

Liability is always considered. PIES uses support data from many different disciplines: law, medical, physical therapy, economics whose programs are accessible in the system. There was broad as well as very specialized outside expertise embedded in the system. Due to the research or empirical study employed by the carrier the data are potentially more characteristic of 'administrative' data (Tata, 1998).

The line claims handler was detached from the data research—in as much as the data come from elsewhere and it not necessarily reflective of their own experience. Furthermore, it did not have the intuitive potential to issue a settlement value of the claim for anything other than the lowest possible amount (Person, 1999). This is not against corporate policy of making a profit, but these settlements are difficult to 'sell' (Person, 1999). In situations where the adjuster had low level skills, the recommendation of the system became the final determination. The adjuster did not use any judgmental skills of his own, but followed the system's own decisions. The pilot study suggests that adjusters must settle within the suggested amount with a 95% settlement acceptance (Person, 1999). On the other hand, a judge's use of past historical data to assist in his ruling as a neutral third party differs greatly from the role of an adjuster who decides a compensation offer based on the responses of an expert system geared to act in a partisan manner.

Choice in Consulting System and Utility and Purposes for Using System

JDSS is useful as a support for judicial decision-making—available if and when the court would find it helpful to consult it. Judges in the SIS are not compelled nor pressured to use the system. One of the important factors prompting use of JDSS would be a judge's own belief in its credibility and consistency (Tata, 1998). There is evidence that SIS users seek not only consistency, but expeditious and responsive data in support of their deliberations (Tata, 1998). Users of the system also expect to have some input into the system as well as a means of modifying the system as part of their confidence in the JDSS's utility.

PIES users were more and more found to be lower line adjusters who handled voluminous and increasingly complex personal injury claims and who have relied heavily upon the system. Their expectations of the system were: a system which is heavily automated and capable of deciding instead of merely *recommending* a course of action (Bolger, 1992). This expectation was preliminarily indicated by the Pilot Study (Person, 1999). Consulting the personal injury evaluation system was not a matter of choice—but required company policy (Person, 1999). From the more fundamental aspect, the adjuster's skills and judgmental perimeters are increasingly narrow.

A study of 30 composite insurance companies and of 17 additional users of PIES indicated the application is PIES within claims context (Person, 1999). Adjusters simply do not voluntarily consult PIES, but they are required to. Its utility is based not on a belief in its credibility nor its levels of consistency, but on the fact there is not alternative. There is further indication that adjusters have very little power to modify the finding nor have any input into the system. There is a suggestion that there may be no set criteria by which PIES' performance is judged (Person, 1999). Seldom is a PIES decision overridden. Thus, the offer generated by an adjuster handling a personal injury claim results not from his or her skills, judgment nor critical analysis, but from the compulsory use of the system which decides, not recommends, a final offer of settlement of the claim (Bolger, 1992).

There is some evidence that personal injury evaluation systems were originally to be used by experienced management to assist in determining values of general damages in personal injury claims (Person, 1999). As the industry began downsizing claims and using technology

as a means of efficiency and cost control, the system was shoved further and further down to the lower ranks of the claims processors. Now, less skilled, front line claims handler have at their finger tips highly powerful technology, while they themselves are less trained and less experienced in the judgmental elements of claims handling. Those more experienced adjusters who used PIES only as a support system are no longer found in the ranks of claims departments.

Less experienced and somewhat deskilled adjusters now use PIES as a decision-maker—rarely to be overridden. Additionally, there was no mechanism for changing the system. Being a company-wide tool PIES was implemented throughout all claims departments, without having a method of amendment, a perform criteria nor a means of input (Person, 1999).

Ownership and Access

JDSS appears to provide the courts with a means of retaining control over their deliberations and decisions and well as of promoting consistency with past judicial determinations (Tata, 1998). The court can not only control their area of activity, but make the community aware of its emphasis upon consistency. (This is important in the discussion of discretion below.) The question of access to the JDSS data has not been addressed. Issues have been raised as to whether the court's in the future might not share its data with both parties—the accused and his lawyer, and the prosecutor's office. The public access issues to JDSS data must balance the transparency issues of today's world and the need to protect the privacy of the accused as well as the prosecutor's access to data (Tata, 1998).

Insurance claims department use of PIES for case management issues as well as the evaluation of personal injury settlements has raised difficult issues with respect to ownership and access. Because the use of IT and ES systems remains a proprietary and strategic policy decision, DSS forms a most significant part of a company's competitive plan. It appears to provide a bedrock for cost savings (Person, 1999). It was difficult to study its use. PIES determinations were distributed to the claims department and usually to the lowest echelons. The claims department's use of DSS is mandated on a company-wide basis. PIES must be used to make personal injury claims evaluations. There was no sense of control over the claims file nor is there evidence of the ability to change or modify the program (Person, 1999). There is complete control over the system's use—despite the fact that the decisions offered by PIES have a profound effect upon the claimant. The claimant's data—medical narratives, lists of specials, expert reports, witness statements as well as the claimant's legal arguments and lawyer's position statements and demands—were recognized by the system. Yet, once the DSS was consulted, there was no explanation of the determination to the claimant; more importantly, neither was he/she aware of the involvement of PIES in their claim evaluation. The present position of the insurance carrier is: the PIES is a very proprietary, strategic element in maintaining their competitiveness and reducing costs—it is not a subject of public discussion. Thus, the insurance carrier exercises exclusive control over the use of DSS in claims.

Access to the data contained in the PIES file on any one particular claim is limited to claims handlers and his supervisor only. Neither the claimant nor his lawyer had the opportunity to review the evaluation of their claim. They are usually unaware that the personal injury evaluation system has determined their settlement value (Person, 1999). There was no access to nor explanation of the reasons and factors which influenced the PIES determination of the claim. There was usually no explanation of the data to the

claimant. Without this access to the data by the injured party, he is deprived of knowing exactly how to either properly present his case or to argue against the decision.

Claimants facing PIES were not advised or were unaware of the grounds rules, the decisive data applied to the rules, the basis of the decision or of what steps could be taken to avoid a very low evaluation by the system. Unrepresented claimants who may unknowingly be faced with PIES are more vulnerable than those who have a lawyer who can deal directly with the adjuster.

Unlike the public nature of the courts and the increasingly transparent approach to court administration, insurance claims departments restrict transparency and access to their data. Should there be access by the claimant, his lawyer and the public to the insurance company file and its application of DSS? Does the fact that a majority of all personal injury claims were handled by claims departments and settled without court intervention and evaluated by a system about which the injured party may have no knowledge or control make access a critical public issue?

Exercise of Discretion

JDSS allows for and retains the important element of judicial discretion. The court may or may not seek the support of JDSS and when it does, it is equally free to interpret and apply, modify or reject the suggestions of the system. The importance of discretion is: to avoid harsh and unjust outcomes (Hassett, 1992). Judicial discretion impacts two very important factors in legal rules and their application: predictability and consistency (Hassett, 1992). In claims handling, DSS or ES has been heavily touted as a means of achieving consistency as well as predictability (Schwartz, 1996). PIES claims to promote fair outcomes (Person, 1999). An adjuster relying upon PIES has limited discretion in the evaluation of the personal injury claim. Any discretion must be exercised *before* the data are put into the system (Person, 1999). Discretion is all but eliminated once the system has 'suggested' an evaluation. So, in the case of PIES, where does predictability and consistency really impact the user as well as the injured party's claim? Discretion and the notions of predictability and consistency have somewhat opposing goals.

Predictability of Outcomes

JDSS as well as the PIES have claimed the virtues of predictability (Hassett, 1992). Yet, there are dramatic differences in the role and application of predictability in decision-making processes. Courts apply law—both statutory and court-made law to the facts of the case at hand. The public has learned to predict, through the development of law and the legal profession—the court rulings on certain type of legal issues and applications. Law also can be predictable as well as able to afford protection of the system through procedural and evidentiary rules. These protections make the predictability of the courts decision-more safe. If the courts applied the rules rigorously then guess work over predictability would be somewhat lessened. Known case law and known procedural and evidentiary rules—level the playing field. JDSS aids in providing a history of prior decisions available to the court—a springboard for continuity. This is helpful when judicial discretion is applied to 'special circumstances' (Hassett, 1992).

Predictability actually diminished even where discretion was relatively weak as found in the PIES application (Person, 1999). Firstly, the claims department was governed by the company claims manual which regulated the handling of the claim to its conclusion

(Quinley, 1992). These claims manuals apply strictly to one company, but the rules and procedures vary between insurance carriers. No one company's manual is identical to another. Secondly, with predictability issues, the claimant should have some knowledge of what the system requires to satisfy the settlement process and the adjuster in particular. That simply was not true—claims manuals and company claims handling policies are closely guarded documents. The claimant had no access to the rules that governed his claim's evaluation nor to the data needed to convince the adjuster and the PIES that the claim merits payment. Predictability assumes there are rules which are known to the parties (Hassett, 1992). In the case of the claims department there were no accessible rules. When PIES was applied, there were no rules, because there were no rules which judged the system's own performance (Person, 1999). If the claimant was aware of the claims department rules or of PIES itself, then there could be a fairer opportunity to present his claim. PIES has no rules to which the claimant can refer or by which he can predict the outcome of his claim.

Consistency of Outcomes

Consistency, like predictability, was a claimed attribute of both JDSS as well as personal injury evaluations systems in civil claims (Hassett, 1992). Similar personal injury claims or criminal events having similar factual significance should be treated in the same manner. This assumed that the data were accurate, specific and reliable (Hassett, 1992). Having a system that is capable of being specific in order to form the basis of the rule to which the data are applied is critical to both systems (Hassett, 1992). Court decisions generally are quantifiable and specific: the rules, statutes and prior cases can be identified, even though involving different fact situations and issues of law.

Personal injury evaluations systems, which involve private rules and regimes, present a vastly different problem. There was no one, outside the claims department who knew what the rules were; what data were critically important to the evaluation; how reliable was the expertise that assembled the data and the assigned values; and whether the same office would decide differently from another claims office or between different companies. There was no way to judge the consistency of the offer with others nor to predict in cases where the claimant did not know what the rules were nor how to play the game. An operated back may have an entirely different values between similar insurance companies and even between branch claims offices from different regions. In personal injury evaluations much depends upon: whether there are excessive costs, the availability and opinions of medical reports, the expertise of the data source, ability of counsel in marshaling the data necessary to substantiate the claim. The liability determinations (contributory negligence issues) and the results of background checks embedded into the system also impacted the claims value. With the courts, if there are no rules, it must decide anyway. With PIE there was no way for the claimant to identify private rules and regulations which impacted the evaluation of the his claim and the amount of his compensation.

Reviewability of Outcomes

JDSS was used as a tool in *assisting* the court determining the sentence or making a fairer decision. In providing the recommended data, the system may report to the user the basis of a suggested option. The court may consider this information as a basis for the ruling. It may not. Further, the party who is subject to the court's ruling under these circumstances

may wish to appeal the court's determination (Hassett, 1992). There are procedural and substantive rules that afford the individual the protection, and, in some instances, the guarantee of recourse to judicial review via the appeals process. There would be a written document noting the findings of fact and law (Hassett, 1992).

PIE systems assess the data which are submitted by either the claimant, his lawyer, or the adjuster as well as by experts and third party providers. When the data are submitted to the system by the adjuster—a critical stage has occurred. Rarely are the determinations or 'suggestions' of settlement overridden beyond this point (Person, 1999). Despite the system's 'explanation' of the recommendation, this information is never passed on to the claimant. He may be unaware that there was an electronic determination involved (Person, 1999). The adjuster may choose to offer the total amount of the recommended amount or withhold a portion. The offer was usually made on a 'take it or leave it basis'—without explanation. While the court system provides avenues to review the basis of its decision in most instances, there are none in the civil application of PIE systems. There is no appeal or review, except in those instances when the claimant instructs the lawyer to pursue litigation.

Further research has suggested a very narrow zone of flexibility in the PIES settlement evaluation, with some companies reporting 95% acceptance of the lower value of the settlement offer (Person, 1999).

Individualization of Outcomes

The court represents the community's sense of justice and fairness. Judges are able to administer justice in ways that fit the individual circumstances. Each party before the court is entitled to the 'dignity' that the individual member of society is entitled to (Hassett, 1992). Individualization may be at odds with the concepts of predictability and consistency (Hassett, 1992). In JDSS applications, such individual treatment may depend on such issues as: whether the data are comprehensive enough to have anticipated a large variety of circumstances and whether the system *recommends* an option or whether the system *decides* the final issue (Hassett, 1992). The use of systems such as SIS is practical—to assist the judge in reaching his decision—not to make it for him. While JDSS may not be comprehensive in every possible variation of circumstance, the judge fills the vacuum by deciding the ultimate issues. The court also is independent and exercises independent judicial discretion. This independence can be useful in assuring fair treatment.

PIE systems operate quite differently when individualization is considered. PIE systems could be highly subjective and well-tuned to the individual's special circumstances. This is true—up to a certain point. The adjuster collects data on the claim. This includes background data, medical reports, diagnosis and prognosis, liability and investigation reviews, case management protocols and recommendations from its own defence lawyers. But the individualization process falters for three reasons. When the data go into the system (based on the answer to 'if ... then'), it is virtually placed in stone because the adjuster will rarely override the system in order to change a 'recommendation'. Secondly, even though the input may be special to the claimant, the fact remains that the PIE system is not consulted for recommendations but for decisions. A DSS, similar to PIE, which in fact makes decisions rather than recommendations, must have a comprehensive database (Hassett, 1992). That is not the case with PIES. It touts that it can make decisions with 'uncertain and incomplete information' (Person, 1999). This limitation would be less important if the PIE merely 'suggested' values. On the contrary, this system makes the

decision for the adjuster—who is not capable nor experienced enough to make the decision themselves. Despite the claim by some PIES to cover 600 types of injuries and over 13,000 rules, its recommendations still constituted the decision. Thirdly, the PIES is not independent. An independent judge can fill in the vacuum. Not so, with the PIES which rejected its own potential of being subjective in favor of acting as judge and jury of the claim.

Training and Supervision

The use of JDSS for training and other administrative purposes promotes court independence from political incursion (Tata, 1998). The process also promotes interaction between the courts on a variety of administrative and juridical matters. The use of PIE systems by insurance claims departments is a highly regarded tool. Training and promotion of company claims policy via the system are a means of achieving conformity at a reduced cost in time and money (Person, 1999). With downsizing and other cost saving measures affecting the claims department, supervision is achieved by allowing claims supervisors to access any claims file to determine if company policies and schedules are being followed. Where claims handling expertise is declining and being replaced by empowered clerical staff, PIE systems can provide a very concentrated supervisory staff with a powerful intervening tool. Thus, PIE is a critical tool in supervision and afford greater access to training of the less skilled claims handling adjuster.

Concluding Comments

JDSS applications suggest that neutrality of data, choice in the use of the system, ownership and access are important goals of court decision assistance. JDSS is used to assist but not to replace human judgment. PIES, within the context of the insurance claims departments, is more tactical as well as strategic in its goals: the creation of a barrier to competitors; the aggressive application to compensation evaluation by lower trained users who have no other option; and the increased reliance upon PIES as the decision-maker itself. There is some suggestion that the use of PIES may require more of the 'resonant social context', rather than detachment from its dispositive effects upon personal injury compensation (Moles, 1992). At the present time PIES appears to be used in a guideline mode. It could be debated whether or not the application satisfies Susskind's criteria, especially when considering PIES' large domain and the lack of consensus among experts.

These issues, as well as the problems of subjective bias, the manner in which PIES is supervised, and what comprises a good decision, remain productive areas of further research. By high detail studies of both a traditional claims handling process and the claims evaluation by a PIES-driven claims department, research may reveal valuable lessons which could impact the court's use of the its JDSS. This is important, as there is evidence suggesting the civil courts may, in the future, have access themselves to PIES data (Person, 1999). If so, the courts may well need to be aware of what the preliminary findings herein portend.

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