Expert system technology

Implications for social welfare delivery

Peter Sutherland

The requirements for the successful implementation of expert system technology are pinpointed along with the potential pitfalls

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SoftLaw Community Projects is developing information and advocacy tools in the field of social security entitlements, including the Rural Advocate in association with the Welfare Rights Centre (SA) and commentary on social security law derived from the author's *Annotations to the Social Security Act 1991*, which was recently published by Federation Press and the ACT Welfare Rights and Legal Centre.

In the past decade technology has greatly affected the delivery and, arguably, the nature of social welfare entitlements in Australia. Most community workers will already be familiar with two major developments — the utilisation of mainframes to record and investigate data and to implement administrative actions such as payment, variation and cancellation of benefits, and the introduction of personal computers as a basic tool for all departmental clerical staff. Indeed, reliance on mainframes by agencies such as the Department of Social Security has now reached the point where implementation of policy initiatives is largely determined by the pace and adequacy of alterations to systems.

The implications of more recent technological developments in public administration are, however, less well known and understood by the community sector. At the forefront of these developments (along with communications technology) is the potential use of expert systems by a large number of public sector agencies, including commercial agencies such as Austrade, revenue agencies such as Customs and the Australian Taxation Office, the Immigration Department, and in social entitlement programs such as AUS-TUDY, veterans entitlements and social security.

This article focuses on the implications of expert system technology for Commonwealth social entitlements programs; however the considerations raised are equally relevant to other government programs at Commonwealth and State/Territory levels.

Expert systems in public sector agencies

In general terms, expert systems incorporate a set of rules (the rulebase) developed by a domain expert and provide a mechanism whereby the facts of a particular case are tested against that rulebase. The technology is well developed in engineering and in medical diagnosis, but in the legal/administrative domain complications arise from the need to interpret precisely the language used in legislation and from the involvement of lawyers and advocates in the analysis of outcomes. Nevertheless, public sector agencies are greatly attracted by expert system technology because of potential benefits such as:

* a *Decision Support Tool* permitting closer compliance with legislative and procedural requirements; better research and support facilities for decision-making; productivity gains; improved documentation of decisions; and improved accuracy of primary decision-making;

* a *Training Tool* offering a shift in training focus from raw information to skills acquisition; shorter training lead times for new staff; immediate incorporation of legislative changes and new policy into administrative procedures; and

* a *Skilling Tool* offering greater flexibility in staff allocation; the capacity to skill staff across a broader range of subject areas; the capacity to increase the depth of staff competence within each work area.

Expert system technology does, however, also present significant dangers for the proper conduct of public administration where its implementation is poorly considered or opportunistic. Examples of this include:

* non-compliance with legislative provisions — through inadvertent or deliberate failure to ensure strict compliance, by omission of legislative discretions, by the creation of a set of policy rules limiting a legislative provision or discretion, or by the simplification of complex legislative provisions;

* alienation of staff — by the utilisation of productivity gains entirely for cost savings without regard to improvements in client service delivery and staff welfare; and by inadequate implementation strategies and staff training in the introduction phases;

* inadequate administration — through the development of systems with poorly expressed reports, poor documentation of rulebases or opaque decision-making processes;

* inappropriate technology — through the utilisation of technology which is too slow or difficult for daily usage by staff, user interfaces which are complex or which constrain experienced staff, poor layout of work stations and client interview facilities.

While each of these problems is significant, the public interest is probably most directly threatened by the potential for non-compliance with legislative requirements. At present, primary decision making by the large social entitlements agencies such as DSS, DEET and the Department of Veterans' Affairs is extremely inconsistent across Australia. Rule-based technology such as the Compensation Claims Processing System (to be introduced by DVA in 1993) has the potential to standardise primary decision making, however such standardisation could lead to consistently incorrect primary decisions. I would suggest that this can be addressed only by independent scrutiny of rule bases by an agency such as the Administrative Review Council. This scrutiny must be directed to ensuring that government rule bases are accurate and fair and that they reflect principles of public law and proper public administration.

Another important requirement for the successful implementation of expert system technology in public administration is ongoing consultation with the potential users of the system — the administrative staff and the clients of the public sector agency concerned.

A focus on clients

A critical issue in the implementation of expert system technology in public administration is its impact on clients. The technology offers the potential for an enhancement of client services and an improvement in the relationship between an agency and its clients. However, there is also a real danger of increased client alienation. For acceptable implementation, agencies have an obligation to focus upon their client service and to recognise and respect their clients' right to:

- comprehensive and accessible information;

  accurate and accountable decision-making;

- independent advocacy support.

Information

Clients have a right to, and agencies have an obligation to provide, comprehensive and accessible information about their programs, decision-making processes and review procedures. These rights arise both from legislative requirements such as the *Freedom of Information Act* and the *Administrative Decisions (Judicial Review) Act* and more general principles of a democratic society.

Expert system technology can enhance information provision through its capacity for comprehensive examination of legislative and procedural material, accurate storage and retrieval of relevant information, and document generation tailored to the individual client's situation.

This information dissemination process can also be significantly enhanced by facilitating the ability of community agencies to advise and support clients. A public sector agency could achieve vastly improved information dissemination by equipping community agencies with expert systems and other technologies initially developed for internal agency use.

Decision making

Clients have a right to accurate and accountable decision-making. The decision-making process must be fair, transparent, consistent, timely and reviewable. Expert system technology can play a major role in the achievement of these objectives by:

- structuring the decision-making process to ensure that all relevant facts are acquired and all relevant discretions are considered;

- documenting the decision-making process and presenting the decision and its processes in a clear report format;

- ensuring that all staff of an agency work from the same correct rulebase and procedures, reducing regional variations and decisions based on 'folk lore';

- improving processing and documentation time lines;

- compiling the decision-making process and outcome into a structured and comprehensive report for review purposes.

Advocacy

An important feature of open and democratic public administration is the availability to clients of independent advocacy support. In many cases, clients are not in a position to evaluate public administration and advocate on their own behalf — whether through language barriers, power imbalances, or the complexity of the material involved. This often leads to alienation and friction between the agency and its clients. Independent advocacy services can ensure that individual grievances are addressed, misconceptions are corrected and injustices corrected. This advocacy role cannot be undertaken by the public sector agency involved — it must be referred to external agencies, both government (e.g. Legal Aid Offices), and

community-based. It is in the public sector agency's long-term interests to ensure that independent and capable advocacy services exist to assist their client base. This advocacy process can also be greatly enhanced by expert system technology.

Legal expert systems in the community sector

Expert system and similar technologies have equal applicability in the community sector in a wide variety of organisations including legal aid offices, community legal centres and welfare agencies. Applications could be built in a wide variety of domains, for example:

- social security,
- tenancy,
- consumer credit,
- family law,
- workers compensation, and
- student assistance.

These applications could enhance the capacity of community workers to advocate on behalf of their clients in a wide variety of ways including:

- general advice about programs, eligibility and rates of benefit;

- verifying the correctness of Departmental decisions;

- preparation of letters and forms;

- preparation of appeals, including fully documented arguments tailored to the clients own fact situation.

The potential benefits of expert system technology in the community sector are easy to identify. Unfortunately, however, it is more difficult to envisage a viable strategy for its implementation because of the sector's chronic inadequacy of resources.

Public sector agencies could assist in this process by the provision of the applications they develop, together with appropriate support and resources, to community sector agencies. In this way public sector agencies would both advance the interests of their clients and also further their own corporate goals by improving clients'access to their services. However, if you have worked in the community sector, you will realise that this is inherently unlikely except as an attempt to shift resource-intensive pre-processing work to community agencies without a transfer of the necessary resources.

Necessarily, the community sector must address these issues and derive its own solutions. This will become a major challenge of the next decade.