CISCO SYSTEMS

Intelligent Government – The Next Wave

Network based transformation for **Justice Systems**

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Overcoming Barriers to Effective Justice Systems

Information is the currency of an effective criminal justice system. From initial arrest to incarceration, the progress of offenders through a system is expedited or impeded by the quality of the information that each agency collects, holds, and transfers (or fails to transfer) about them. The efficiency, speed, and effective delivery of that process is directly determined by the extent to which each agency involved in the criminal justice process has access to the right information at the right time.

In several recent high-profile criminal trials, and in more than one country in Europe, both official and more general public concerns have been expressed about the lack of communication between the various agencies involved in the apprehension of suspects and their subsequent journey through the criminal justice system. The failure of agencies involved in the criminal justice system to interrelate and exchange information effectively has been perceived by the public as a breakdown in communication at best, and as negligent dereliction of responsibility at worst. However, the public view is based on a set of assumptions about each different agency and element within the justice system's ability to communicate effectively with the others. Essentially, these assumptions are based on

a perception that the criminal justice system as a whole operates with a degree of integration that permits the exchange and flow of information between the various bodies in a more-or-less seamless fashion.

In reality, the extent of agency interaction is severely hampered by a lack of integration and antiquated, manual systems for storing and disseminating information. When information technology has been introduced, it has been at a local level, reinforcing the disconnection of agencies, rather than facilitating collaboration.

The Auld Report, a review of the entire criminal courts system of England And Wales carried out by Lord Justice Auldone of the most senior judges in the UK, sums up the progress of information systems used in the criminal justice system in England & Wales thus:

"The progress of a case can be monitored only within each agency, and only by that agency for as long as it has it. Responsibilities for case management are dispersed, creating obvious discontinuities at the point of transfer, and for buck passing when things go wrong. And there is no possibility of aggregating information about defendants, victims, outcomes or anything else across the system as a whole, because each agency uses its own definitions of the contents of its files."

The answer to overcoming these difficulties and obvious shortcomings in the present system lies in interconnecting justice systems electronically—by linking together the institutions and processes of a system that have existed as a series of discrete, barely communicating agencies. This is an immense challenge.

The difficulties likely to be encountered are not confined to those organisational challenges that commercial or other large institutions may experience. The challenge facing the justice system is made more complex because of the nature of the service it delivers and the multiplicity of agencies and official bodies that together compose a criminal justice system.

Nevertheless, these are challenges which criminal justice systems around the world are facing and addressing as the demands of the public and governments force them to provide better services without any continuing commitment of increasing funding or resources. The emphasis on security introduced by the events of September 11 only serves to intensify the urgency of these demands.

Public Opinion and Criminal Justice

The public's increasing use of and familiarity with the Internet and related technologies creates a set of assumptions about their use by criminal and civil justice agencies which, in many cases, are not correct. Often, it is only when a high-profile crime or miscarriage of justice occurs that the lack of information sharing between justice agencies becomes apparent. In addition, public concerns about crime have led to the creation of laws that demand certain databases of particular offenders to be compiled and made available. These initiatives have often presupposed a level of information technology provision and integration that is often, at best, only in the evolutionary stages of development.

The Integrated Justice Action Plan of the Canadian Solicitor General's office addresses this misperception:

"A gap exists between expectations of Canadians regarding information sharing and the reality. A gap that manifests itself as decreasing public confidence with each incident where information is not utilised effectively. The public perception is of a single criminal justice entity. The average Canadian is not attuned to the fine distinctions of jurisdiction or multiple stakeholders, nor do they wish to be. Failures in the chain are seen as failures of the Canadian justice system as a whole. Canadians expect police, prosecution, courts, corrections, and parole authorities to work in concert with one another, using and sharing the most current, most relevant, and most reliable information available."

Public opinion also acts as a powerful stimulant to governments. Perception of crime and public safety is often at odds with the incidence of crime itself. However, citizens' perceptions that they are likely to be the victims of crime, regardless of any evidence to the contrary, creates a powerful demand to address those fears and for governments to visibly imact to do so.

To a certain extent governments deal in—and face success or failure through—the ability to manage the public's perception of any given issue that eventually forms "public opinion." Crime is increasingly a major public concern, although there appears to be a general downward trend in (reported) crime. Governments need to act, and connect with the public, to show they are reducing crime with innovative, and above all, successful solutions.

The overwhelming majority of the public will come into contact with the criminal justice system in one of three ways—either as victims of crime, by witnessing an event, or by serving on a jury. That contact is likely to be minimal and fleeting, so it is the shortcomings in the justice process that are likely to be most obvious. Engaging with citizens by providing them with access to information about the justice process is, therefore, a key element of any strategy for restoring and building public confidence in the security and safety of the public space.

Encouraging Collaboration Among Criminal Justice Agencies

Many organisations operate together to form a criminal justice system. The principal agencies—the police, prosecutors, the courts, prisons, and probation services—need to communicate with each other and act on information passed among them. The reliability and efficiency of this transfer of information is inconsistent in most countries worldwide, and is often the principal cause of the public's perception of the system's shortcomings, as eloquently expressed in the Auld Report of the English Criminal Justice System:

"The criminal justice system is a document and labour intensive operation, most of whose administrative and management systems were developed at a time when the workload of the courts and lawyers was far smaller than today. Many of the systems are crude, paper-based, oriented towards the process of administration and not the community and not all are able to cope with the increasing demands placed upon them. These cause high staffing costs, inefficiencies, error, delay, and dissatisfaction and poor reputation. But the criminal justice system can instead be viewed as an information system – a network of millions of individual pieces of data, linked and related to each other in thousands of different and ever-changing ways. Modern information and communications technology could transform the ways in which each agency undertakes its separate function; in the speed, reliability, and efficiency with which data are processed, and also in the manner of management of a prosecution from charge to disposal. There are also the benefits which could accrue to the system as a whole in the integration of its information structure."

The problem in many justice systems is not that each agency has been unwilling to adopt and make use of the potential efficiencies new technologies have to offer them. Many have made considerable investments in information technology. The problem is that, unfortunately, in an overwhelming number of instances, these solutions have been implemented at a local level, with little thought given to how they might operate in a connected and networked environment. It is only when technology is implemented to forge effective connections between the different agencies that its transformational power will begin to be realised.

Barriers to Implementation

Waleed Malik, Senior Public Management Specialist at the World Bank, has identified four principal areas where problems in implementing technological solutions in judicial systems are likely to occur:

- Disconnect between judicial reform and ICT investments. Many IT initiatives introduced into the judicial arena have not been interwoven with a wider process of judicial reform, or have failed to have a positive impact on the outcomes of the judicial process. For example, computerising court records has improved the quality of the records themselves, but has failed to create wider benefits. Many information and communication technology (ICT) investments have had little or no impact on access to justice or the efficiency of the justice process from the public's point of view.

- Weak institutional capacities and 'wrong' priorities
There has been a lack of proper planning of ICT investment based around the needs of the judicial system. Many investments have been driven by vendors and have failed to take account of the institutions capabilities and priorities.

- Senior policy makers and judges lack knowledge of ICT and the commitment to modernise. ICT projects have been dealt with at a relatively junior level of management and have been executed according to functional, rather than strategic, considerations. Senior decision-makers have not been actively engaged in the use of technology to achieve broader access to justice, greater citizen participation, or communication.

- Lack of stakeholder involvement and training. Insufficient attention has been paid to the need to engage all potential stakeholders in the changes created by implementing ICT solutions in the justice system. Resistance to new working patterns and changes in work flows, as a direct result of technological solutions, need to be addressed with appropriate training and dialogue.

Using IT to Remove Barriers

The enterprise-wide approach that networking solutions implies needs to be embedded in the strategic thinking behind any decision to use new technological solutions to improve, or indeed transform, existing processes. Creating integrated justice systems is not an exercise in IT procurement, nor does supplying the ability to communicate automatically mean that communication *will* take place. Technology can, however, help to breach walls of silence that have been deliberately constructed or inadvertently formed between different groups.

An article by Cisco Systems' Director of Defence for Europe, Middle East and Africa, Terry Morgan, entitled *Information and Networking* discusses the value of networking in the intelligence community, and could equally apply to criminal justice systems: "Research shows that what distinguishes companies with successful IT organisations is not technological wizardry, but the way that they handle their IT activities. They manage IT in much the same way that they manage their other critical functions and processes—by getting real leadership at senior levels, by making IT speak business English, and by focusing IT work on delivering business value."

Terry Morgan defines six key principles for successful IT strategies. Though these describe activity in the commercial sector, their relevance nonetheless applies to public sector system implementation:

1. **Make IT a business-driven line activity, not a technology-driven staff function**
   Technical and policy managers are divided by a lack of understanding of the others' role. Technology needs to be considered as an upfront element of strategy in a proactive way, not a separate initiative.

2. **Make IT functioning decisions like other business decisions, on the basis of value**
   IT budgets need to be in line with what the organisation needs, and the assessment of the budget should reflect those needs, and not based simply on what has been spent before.

3. **Drive simplicity and flexibility throughout the technology environment**
   Fewer technologies and applications build in flexibility. Organisations that have many different systems running in parallel will end up needing to simplify at a later date, demanding considerable time and money.

4. **Demand near-term business results from development efforts**
   IT strategies should be assessed within a relatively short time after implementation. Where possible, the degree of customisation should be minimised—customisation should only be undertaken where there is a four-fold payback of the costs of using this approach.

5. **Drive constant year-to-year operational productivity improvements**
   It is all too easy to underestimate the resources and effort required simply to keep things running in IT operations. Commonly, less that one-third of IT spending goes on new applications. The remainder is consumed in operational activity. This means that in order to effectively track their IT budgets, senior management must learn to separate the two. New investments should be treated as capital decision, and operations should be rigorously monitored and assess against established performance measures.

6. **Build a business-smart IT organisation and an IT-smart business organisation**
   Business and technical managers need to have an active and constant dialogue. It is vital that each understands the others objectives and limitations. Senior management needs to engineer such a dialogue by ensuring that they bring business and technical people together.

Technology and People: The Management Challenge

**"Just as our technology components have not traditionally been designed to enable information sharing across agencies, so too our people-based structures are not always used to cooperating with each other.
Our information systems and people have historically operated somewhat in a 'stovepipe' environment. This situation has evolved over time due to differences in jurisdictions, mandates, funding levels, rules of governance, and concerns for the security of an access to information. This separation sometimes results in interagency frictions and rivalries, solidifying resistance to operating outside the 'stovepipe'. In light of this history of independence and autonomy, there naturally is a resistance to change."**

Canada Solicitor General's office

The means to implement a technological solution to the problems of individual agency isolation are now available from any number of suppliers, using any number of specific tools and applications. Sharing knowledge has been widely recognized as one of the key drivers for organisational success, particularly in the private sector where the ability to harness and virtually collocate individual repositories of knowledge across commonly accessible networks is a clear strategic aim.

In most criminal justice systems around the world information is shared largely through manual systems, with all their inherent lack of reliability and security, a situation that one commentator in the United Kingdom described as " a national disgrace. With over 25 million people in the world currently on e-mail, it is remarkable that one cannot still reliably expect to send an e-mail directly to a justice's clerk, to a Crown prosecutor, or to a prison governor."

Sharing information in the justice environment is clearly radically different from sharing information in a commercial environment. Data security is clearly a priority and explains some of the reluctance shown by justice agencies to proceed with more collaborative working methods. However, there is no doubt that the present manual systems used by many are extremely vulnerable to breaches of confidentiality, and little evidence to suggest that bureaucratic firewalls are in any way more effective at preventing unauthorised access than their electronic counterparts.

Greg Wright, executive director of the Canadian Integrated Justice Information Secretariat, when discussing the barriers to implementing networked criminal justice systems, points to "a business culture that tended to keep information inside. When protecting one's turf was as important as protecting the information contained in each system." This is a point echoed in Terry Morgan's article examining the barriers to networked cooperation in the provision of intelligence services:
"The leadership has not developed or enforced the policies that promote the true spirit of community. In fact, it has often been overwhelmed by the information revolution because the community lacks a shared vision of its customers' needs, made worse by a fundamental mistrust among its various organisations."

Sharing information between justice agencies does not, though, mean that *all* information should be shared between *all* agencies. Rather, it is critical that information should be made available on a common basis when it is needed at critical points along the justice process.

For example, when a suspect is arrested the arresting agency will record certain details about both the suspect and the crimes that the suspect has allegedly committed. The ability to query instantly the suspect's details against a set of records already compiled (for example, driving licence and fingerprint details) would greatly enhance the speed and reliability with which initial arrest procedures could be made. Once arrested, the provision of information to prosecutors in the form of a developing case file passed from police to prosecutors, and on conviction to prison and then probationary services, would represent a quantum leap in the ability to track one offender through the hands of several different agencies.

Privacy concerns

The privacy of much of the data held in systems likely to be used by the various agencies in an integrated criminal justice system is of great public concern. Privacy legislation (such as Data Protection and Human Rights legislation) means that the various agencies in the justice system needs to ensure that the information they hold is secure and used appropriately. Information that any one of the agencies may have will relate not only to convicted criminals or suspects, but also to the acquitted, to victims, and to witnesses.

In the EU, under the Data Protection Directive 1995 (adopted in all member states), individuals about whom information is held have certain rights. These include:

- A right of access to personal data
- A right of rectification if personal data is shown to be inaccurate
- The right to refuse that their information be used in certain circumstances

Justice systems face having to achieve a difficult balance in terms of protecting an individual's privacy rights, and simultaneously fulfilling their principal obligation to protect society.

To achieve this balance, a system designed to share knowledge must contain the appropriate safeguards to ensure personal information is protected, whilst at the same time allowing access to various network users. Achieving equilibrium is further complicated by the often acute sense of the information stored on any criminal justice system. Misspell someone's name on a credit card statement and the effects are likely to be minor. Misstate someone's name on a criminal record and the consequences are infinitely graver.

The need for privacy, therefore, needs to be anticipated in system design rather than discovered as a flaw in the system at a later date.

A report conducted jointly by the Office of the Ontario Information and Privacy Commissioner, the United States Department of Justice, and the National Criminal Justice Association identifies eight privacy design principles relevant to an integrated justice network.

Principles of privacy design:

- **Purpose specification principle**
  The purpose of collecting information should be directly related to the relevant sector of the justice system.

- **Collection limitation principle**
  Limits on the extent of the personal data collected need to be drawn up in accordance with the knowledge and consent rights enjoyed by each individual. A relevance test should be used to assess the validity of holding particular types of information on each individual according to their status (suspect, convicted offender, victim, witness, and so forth).

- **Data quality principle**
  Much of the data held on a criminal justice system will not be available to the subject in order to provide verification. The integrity of the data held, therefore, must be of the highest quality and must be subjected to testing to ensure accuracy.

- **Use limitation principle**
  Access to data must be carefully controlled. This is of particular concern in a justice system in which several different agencies, at different stages of the criminal justice process, have common access to data for different purposes.

- **Security safeguards principle**
  The importance of security in all data networks is a central concern, and in the criminal justice arena it is self evident.

- **Openness principle**
  There should be a general policy of openness with respect to the management of personal data, if not—given the sensitivity as noted above—to the data itself.

- **Individual participation principle**
  Individuals, or agents acting for those individuals, should have the right to gain access to any information held on those individuals and to challenge that data for accuracy.

- **Accountability principle**
  There should be sufficient governance of the system to make sure that the privacy design principles as established above are achieved. Responsibility for this should be assigned to one person or committee that is made publicly known and accountable to other networked users.

Elements of an Integrated Justice System

The following is a minimal set of requirements necessary to create effective communication and collaboration between the various agencies involved in a criminal justice system:

Case tracking—Putting basic case management systems in place in order for a case to be tracked through the criminal justice system, from arrest to release.

Management information—A system for monitoring and assessing the outcome for each type of offence and for different categories of individuals.

Unified data—Standardised data is an essential aspect of the interoperability of a common system.

New user categories—Members of the public and the media would be able to gain direct access to information about cases, including witnesses' statements, etc.

Case management—A more evolved solution than simple case tracking would allow progress of particular cases to be monitored and controlled through the system, and would allow for each agency to check that quality and efficiency standards were being met.

Governance structures

Creating an environment in which many different agencies can exchange and share information is not a great technical challenge. Creating an environment in which those same agencies will willingly share the information they have with one another represents an area of greater difficulty—overcoming established barriers to exchange means ensuring that all stakeholders can move in the same direction towards the same goal. A vast array of political, legal, technical, cultural, and personal issues need to be addressed and resolved. For that reason, it is vital that some governing body is instituted that is able to take command of the project and reflect the various concerns of the different agencies, to ensure that these are addressed and incorporated into the integration plan as it develops.

According to a report by SEARCH, the U.S. National Consortium for Justice Information and Statistics, the governing body should be able to:

● Articulate the vision for the integrated justice project
● Identify policy, legal, funding, administrative, and any other obstacles to integration
● Define and sanction objectives
● Monitor the planning, implementation, and management of activities
● Define operational requirements
● Oversee systems acquisitions
● Resolve obstacles to implementation
● Review system performance

Such a governing body would resemble the Criminal Case Management Agency suggested by Lord Justice Auld in his report into the criminal justice system in England & Wales: "An essential feature of the integrated system that I have described is that, once the problem of the common language is solved, there could be a staged transfer of data using Web technologies, while allowing each agency to retain a necessary degree of control over its own processes and interfaces. The Criminal Justice Board should assume responsibility for this programme and, thereafter, the management, integrity, and security of the data to ensure accessibility to all users of accurate, timely, and relevant information."

Measuring Progress: Developing Metrics for Integrated Justice

The goals set for integrated justice projects range from the broad, overarching aim of enhancing public safety to more precise focuses, such as improving case flow management and staff efficiency. In order to assess the extent to which progress is being made towards these goals it is necessary to create or adapt some means of measuring that progress. With a diversity of aims in mind, it is clear that a set of metrics will have to be created that allows for the diverse variety of activities and outcomes involved in the complex processes that make up an integrated justice project.

Measurable business objectives need to be evolved on a case-by-case basis, with each set of measurements relating to a clearly defined business objective. For example, if a desired goal is to create a system in which case flow management improves, each stage of both the present and desired case flow system will need to be objectively assessed. This means analysing the processes and outcomes of the present system to a fine degree of granularity before new means of achieving the goal can be put in place and assessed. Case flow may be measured in terms of the time a particular case takes to go through all the stages of the system, or it may be related to the volume of transactions that the system is able to process in a given amount of time, or—more likely—some combination of the two.

Measuring enhancements to public safety creates a slightly more problematic arena. As stated earlier, public safety is derived from perceptions that citizens have about the relative safety of particular environments. Measures, though, have to be defined against some measurable and clearly defined objectives. For public safety, these might include decreasing the number of times that court cases are not reported in criminal histories, decreasing the average response times required to achieve a positive identification of a criminal suspect, decreasing the frequency of occasions when a criminal record is identified with the wrong person or decreasing the rate of recidivism. Along with these measures, it is important to ensure that efforts made to achieve these ends are communicated effectively to the public. By making more information available to the general public and making that information easier to find, successes in implementing measures designed to enhance public safety can be put in place with enhanced degrees of confidence and certainty.

The role of technology, and networked communications and information technology in particular, is pivotal in the successful delivery of integrated justice. But the most important changes required to achieve integrated justice solutions are not technological; organisations and the behaviour of the individuals that compose them need to be fundamentally transformed.

# Global Developments Toward Integrated and Networked Justice Systems

Integrated justice systems: Canada

Some initiatives around the world illuminate the theoretical issues in action. One of the most advanced programmes is in Canada, with the development of the Canada Public Safety Information Network (Figure 1).

" We're not in the business of creating some kind of monster databank. The NCJI (National Criminal Justice Index) is about creating linkages. It's about revolutionising the way that criminal justice cases are handled. And it's about the speed with which information in this system will be shared."

Greg Wright, Executive Director (Integrated Justice Information Secretariat)
Solicitor General, Canada

Figure 1: The Canada Public Safety Information Network
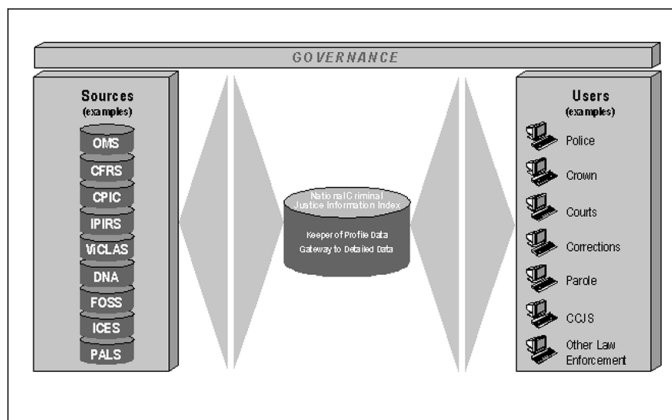
Source: Integrated Justice Information Action Plan 1999 to 2004

The criminal justice integration project in Canada is one of the most advanced in the world. The project to create a system that provides all agencies within the criminal justice system with shared data access was launched in 1999 with a five-year action plan. An integral element of the plan was the creation of the Canada Public Safety Information Network (CPSIN) that would serve to link information sources together as well as create collaboration across provincial, territorial and municipal borders (Figure 2). In addition to the complexities generated by a multi-agency system, Canada also enjoys a complex intra-jurisdictional division of labour within its national criminal justice system.

Figure 2: CPSIN Home Page

Creation of the network is under way, and several of the agencies are progressing with systems that operate to common data standards. However, creating a system with common access to all partners in the system, a 'front door' that can be used by all partners to gain access to the data without compromising specific aspects of confidentiality, is where Canada is demonstrating real leadership in the creation of integrated justice capability. The centrepiece of the CPSIN is the National Criminal Justice Index (NCJI), which provides the gateway for all agencies to gain access to and share information.

The NCJI first round will be launched in April 2003, with rollout to a number of selected partners in the Canada criminal justice system including the Royal Canadian Mounted Police, the Canada Customs and Revenue Agency; Citizenship and Immigration Canada; the National Parole Board; the Canadian Centre for Justice Statistics; and Justice Canada.

The implementation of the Canadian system is led by an integrated justice information secretariat. The secretariat has adopted a 'lead from the side' philosophy. Rather than seeking to impose policy from above, the aim has been to provide guidance to the various and complex layers of stakeholders in the Canadian criminal justice system. Greg Wright, executive director of the project, explained the thinking behind the secretariat's work in a speech delivered to the Public Safety Transformation Conference, held in Whistler, British Columbia in April 2002: "This is less a story of computers and bandwidth than it is a concept—call it a national criminal justice information sharing capability…

In one sense, the vision of CPSIN is a network of networks, not a big brother database. It will mean that all partners in Canada's criminal justice system will be connected in a certain way to each other electronically, and will be able to do business with each other electronically as well."

Case study: Ontario's integrated justice project

Ontario, Canada has embarked on the creation of a highly ambitious integrated justice system. The system covers the police, the courts, and the corrections systems. To date, the programme has successfully installed an information infrastructure that is currently being tested, and has linked up the police, courts, and prisons.

Live developments to date include:

Police systems

● New integrated computer-aided dispatch and records management system, along with training for field officers and administrative staff.

Correction systems

● The Offender Tracking System has been deployed in all correctional institutions across 45 institutions, 40 area offices, and 94 satellite offices.

Electronic filing

● A filing system for lawyers to file electronically into the Superior Court of Justice has been made available for field-test by lawyers.

Public and private partnerships—The Ontario experience

One of the principal features of the integrated justice project in Ontario has been the development of solutions involving close partnership between private and public sector bodies. The management of these relationships is likely to play a pivotal role in the successful delivery of integrated justice projects, but their coordination and implementation is far from straightforward.

The Ontario Integrated Justice project has set itself some ambitious targets. Among these are:

● Conversion of all manual systems to electronic versions
● Replacing electronic information systems with new technology
● Providing electronic information exchanges across the justice data systems
● Providing the public and legal community with access to electronic court processes
● Providing authorised justice personnel with the ability to make e-queries
● Providing all of the information components of the justice system, including:
● Police computer-aided despatch and RMS
● Court case management
● Replacing the present offender tracking system

In short, enabling full integration of all information and associated processes

The Ontario IJP is based on a number of public and private partnerships. Intrinsic to these relationships is the sharing of risk and reward. Private sector partners only begin to see a return on their investment once the defined benefits in terms of revenue increases and cost reductions begin to emerge.

At the end of March 2002 total investment in the Ontario project had reached C$200 million with minimal benefits realised. Given the long-term nature of the projects, it is vital that the relationship between public and private partners is secured on the basis of trust and long-term mutual benefit.
This degree of symbiosis is, of course, difficult to create and manage, yet relatively easy to erode.

The Ontario experience to date undoubtedly provides some valuable lessons for other similar projects to follow. The management challenges that the project has confronted are considerable. In an address given to a European commission seminar in Madrid, Scott Campbell, the former chief information officer for the Ontario Integrated Justice Project suggested that these challenges were only partly connected to the implementation of technology, and were mostly created by the organisational and management barriers that integrated justice projects must overcome if they are to be put in place successfully. In particular, he observed that in order to create a successful partnership between the public and private sector parties involved in the creation of integrated justice solutions, several factors have to be in place:

● An honest appreciation of the skills that all parties are able to bring to the project, the exercise of constant vigilance to ensure that promised contributions in terms of skills and resources are delivered, and to be tough on those partners who are not delivering

● The ability to plan for change in senior management and executive authority—long-term projects must achieve buy-in at the highest level or they will fail

- Business people must be allowed to create the business case for change—it should not be left to accountants and lawyers to negotiate

It is essential, he said, that all partners understand how and why the other side operates as it does.

Electronic courts – The Australian experience

Creating a paper-free courtroom
With its eCourt strategy, the federal government of Australia is trying to implement one of the most ambitious programmes of change in legal systems anywhere in the world (Figure 3). Not only does the strategy seek to improve processes within the court system, it also contains a substantial commitment to informing and engaging citizens in the judicial process.

The strategy for the eCourt programme is set out in terms of the benefits that it aims to achieve, not the technology that will be used in order to reach its goals. Meeting the needs of court users is seen as the overwhelming priority.

Figure 3: Australia e-Court Public Information Page

The strategy explicitly states that it aims to take advantage of technology to:

- Enhance access to justice
- Extend and enhance court services
- Manage information more effectively
- Promote court services and disseminate information to the wider community

The projects involved in the eCourt initiative include:
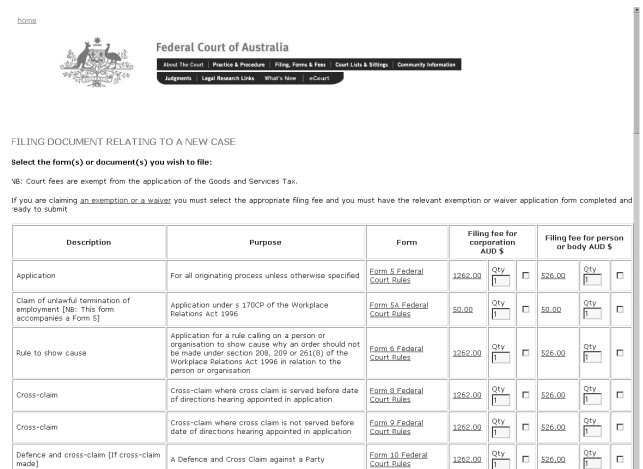
- An online forum
- An electronic filing system
- Case management system
- Document management system
- Electronic court and hearing rooms
- Electronic trials
- Videoconferencing
- Information to the public

The provision of public information is a key element of the Australian eCourt strategy. As part of this strategy, the Court is investigating the possibility of introducing kiosks that would provide simple touch-screen interfaces for users to gains access to information about the working of the court and would particularly focus on unrepresented persons expected to appear before the court. The provision of information for the public would include such services as interactive advice for completing legal forms, assistance with filing, information in plain English and in languages used by minority communities, legal glossaries, and guides to litigation including links to additional resources and other sources of legal advice.

One of the most interesting aspects of the initiative is the creation of a virtual court; open 24 hours a day, 7 days a week. Though the court is restricted at present to selected civil matters only, users of the virtual court can submit submissions and affidavits as if the parties were in an ordinary courtroom.

The eCourt is a virtual court that can conduct hearings, and make orders over the Internet. Users of the court can make online submissions to the judge, and can make online payments using a credit card (Figure 4).

Figure 4: Online Filing and Payment at the Australian eCourt

The Singapore experience

Singapore has set itself the ambition of becoming a leader in e-government applications, and this approach has filtered through to create some interesting uses of technology and networking in the administration of justice. Case management and judicial proceedings systems have been implemented to provide more efficient and accessible services. For example, the Tickets and Summons System 2000 (Ticks 2000) creates electronic links to 17 external prosecuting agencies. The agencies are able to send charges directly to the court prior to a hearing and once the case is heard, the decision can be sent back to the agency for the appropriate records to be updated. The Singapore Case Recording and Information Management System (SCRIMS) automates the process of a criminal case from registration through to appeal outcome.

Singapore has also launched a series of initiatives that give the public direct access to the criminal justice process. Information kiosks have been installed in both the Supreme and subordinate courts. These kiosks provide lawyers and members of the public with information about the courts themselves, as well as details of hearing lists. The kiosks are directly linked to the court systems, so information is kept accurate and up to date. Kiosks are also in use for members of the public to pay fines for traffic offences. Kiosks are in place throughout Singapore, and are available 24 hours a day, 7 days a week. After their launch in April 1997, more than 25 percent of all cases are handled through the kiosk system, making considerable time savings for the court to hear other matters.

Videoconferencing technology is also widespread in Singapore. Vulnerable witnesses are able to give evidence over video-link, which has also been used to hear testimony from witnesses in other jurisdictions. Bail hearings are also conducted using a remote link.

Mobile phone users in Singapore are also able to gain access to information about the Supreme Court via their handset. The information is sent as a Short Message Service (SMS) text message and provides the user with details of the Duty Judge at the Supreme Court, the Duty Registrar and information about cases in the High Court and the Court of Appeal (Figure 5).
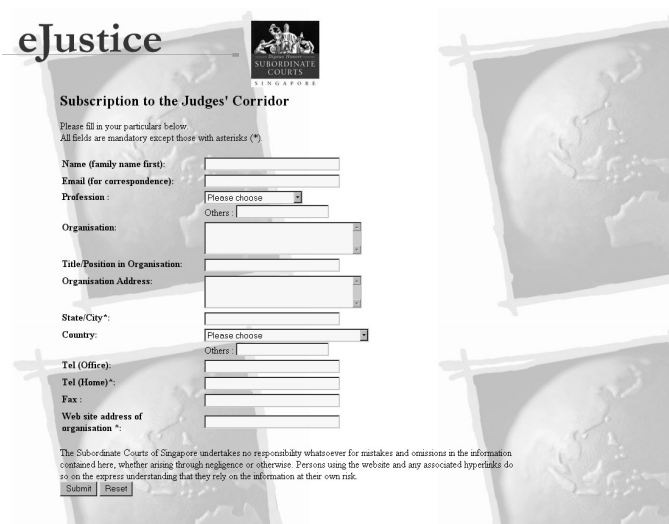
Figure 5: Mobile Phone Users in Singapore can Access Supreme Court Information through SMS Text Messaging
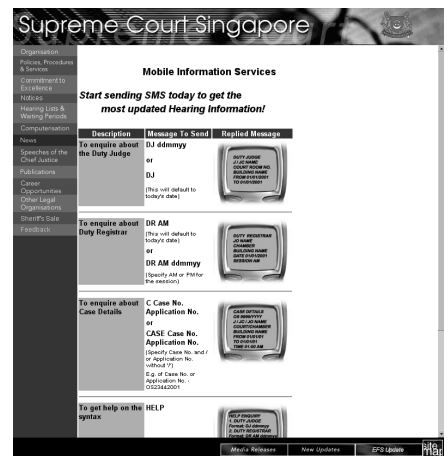
The Judges' Corridor—Breaking Down International Barriers

Singapore Ministry of Justice has created The Judges' Corridor, an online forum for discussion which aims to create an environment in which judges in different countries can exchange information and contribute to debates regarding jurisprudential and court management issues (Figure 6). Discussions are monitored and supervised by an online moderator and a panel of experts is available, comprising members in Australia, Canada, the United Kingdom, United States, and the World Bank. Some of the resulting discussions will be made available to the public.

Figure 6: Web Access to the Judges' Corridor

Improving efficiency in the U.K. Court Service

Delays and inefficiencies in the court system in the United Kingdom were amply demonstrated in a recent survey:

- A Crown court audit showed that 25 percent of cases did not go ahead as scheduled because of delays in the system.
- Additionally, only 3 percent of time that police spend in court is taken up with giving evidence. 97 percent is spent waiting around.
- Only 34 percent of U.K. citizens believe that the justice system operates effectively.
- Only 54 percent of witnesses give evidence in court on the day that they are called 40 percent of witnesses never hear of the outcome of their trial.
- When asked, 40 percent of witnesses said that they would not appear again.

Most users of the court are infrequent users, yet this shapes their impression of the court service. Because citizens' court interactions are limited, it is impossible to poll them to find out what interaction they would consider important as it might be with other public sector services. Citizens are largely,

and understandably, ignorant of what can be achieved both organisationally and technically. This means the only way to create workable systems is to pilot and keep testing new ideas.

But these must be tested in a real environment, and more importantly, abandoned if they do not work.

In the United Kingdom (England and Wales), the court service alone deals with agencies including the Police, the Crown Prosecutions Service, The Probation Service, the Prison Service, the Home Office, barristers (advocates), solicitors, and victim support agencies.

In the United Kingdom the court services spend less than half in terms of annual budget on IT compared to other public sector departments, and less than one-sixth of the amount spent in private sector organisations of equivalent size.

Of course, faced with an inadequate justice infrastructure, there is little doubt that putting these trials in place is not easy. But the highest hurdle to overcome is the cultural challenge. Attacking entrenched ways of doing things is very difficult. Pilots must also, therefore, help to engage and excite the users.

Innovation should be managed centrally, but delivered locally. The local user must be encouraged to feel a connection with the project, and in effect, engineer their own support for new ways of doing things.

The List Office

The list office for each court schedules forthcoming trial activity. Clerks in the office deal with the multiplicity of agencies to try to ensure that each stakeholder in the trial process is aware of the trial times and schedules and that they are therefore able to ensure that all trial participants are available at the right time. The present system for most courts is manual and paper based. The only contacts between the courts and the list office is through fax or telephone, which can lead to cases being overlooked and failure to inform relevant parties of changes to dates and timings. The inherent lack of reliability in the system creates huge delays and inefficiencies.

One experiment, in Chelmsford, shows the progress that can be made when new methods are adopted. The schedule for standard cases at Chelmsford Crown Court is made instantly available on the Internet and on public screens in the court so that the progress of a particular case or trial can be monitored. In addition, a secure intranet is made available to the criminal justice agencies in real time direct from the court across several platforms, including email and SMS (Figure 7).

Figure 7: The Chelmsford Crown Court Website Showing Progress of Cases in Real Time

Xhibit, as the system is known, has resulted in a 20 percent decrease in waiting times for witnesses—and there has been an increase in the number of successful trials in Chelmsford, so real benefits are being delivered. Table 1 lists the lessons learned from the U.K. court service implementation.

Table 1: Lessons Learned from the U.K. Court service experience with Implementation

Don't	Do
Attempt to predict future need	Design for continuous change
Press on with the plan regardless	Evaluate quickly and often Speed time to market
Ignore the cultural challenge	Communicate the potential Allow ideas to be tested quickly
Control centrally	Enable centrally and deliver locally
Deliver in a large, monolithic way	Take an incremental and modular approach
Base the approach on copyinginformation	Ensure ubiquitous access to information for all
Assume technical compatibility will happen	Base on a common and shared technical approach
Allow suppliers to maintain incompatible silos	Leverage the IT supply side

Modernising Europe's Justice Systems

At a seminar hosted by the Spanish Presidency of the European Union (EU) at the end of June 2002, representatives from 20 European countries gathered to discuss the need for greater interoperability within national justice systems, and ultimately between EU member states.

The different countries reported a broad range of progress, with some national systems much further along the path of integration than others. The use of technology in helping to achieve greater integration was much discussed at the seminar. In the conclusion to the seminar it was agreed that the "new information and communication technologies offer a significant opportunity to take on the complexity of the task." Two connected types of interoperability were discussed, namely: interoperability between different public bodies that participate in the administration of justice, and interoperability between justice systems and citizens.

Though the seminar demonstrated a wide variation in the levels of present achievements of integrated justice projects within the various member states, it was agreed that the aims of creating integrated justice systems require the following:

- Through ICT tools, citizens as well as attorneys and other legal professionals can stay informed, in a dynamic way, about the content and status of a specific judicial proceeding.

- The exploitation of information and communications technology to take on the "arduous task of modernising an organisation as complex as justice."

- The expansion of the application of new technologies to overcome antiquated conceptions will lead to changes in work methods, jurisdictional procedures, and organisations.

- Barriers within present legal systems that thwart the development of new technologies and prevent users of the judicial system from carrying out fully effective legal actions in judicial processes through the use of new technologies need to be addressed. These include addressing measures regarding the privacy and security of information.

The European Environment: Progress in Selected EU Member States

Finland

Finland has been using information technology in the justice system since the early 1980s. Courts have been using case management systems of one form or another since 1986. The use of networked technology remains at an early stage, although Finland was one of the first countries in the world to allow claims to be submitted and judgements delivered electronically.

Portugal

Portugal has embarked on an ambitious project to link together elements of the criminal justice agency in one networked environment. The Portuguese Ministry of Justice has set itself the task of greatly improving the efficiency and effectiveness of the judicial and associated processes for the administration of both civil and criminal justice. A vital element of this process involves the removal of barriers between different parts of the legal administration and creating the ability to pool resources and data and share information more effectively and to a wider group of stakeholders.

Initially, the installation of wide-area networks (WAN) and local-area networks (LAN) has achieved the primary goal of the Ministry's mission to have the courts and registrars offices connected throughout the country (approximately 500 sites). The next phases of the project involve the creation of centralised resources (applications and data) that will allow judges, lawyers, and the like to track progress of cases and to review commonly accessible files over the network, and ultimately the introduction of citizen access through the Internet and self-service portals for the administration of routine matters.

The Netherlands

One of the pioneers of e-government in Europe, the Netherlands has already established experimental work in 'virtual' court hearings, conducted over secure video and online connections between prisons and the courts. The Dutch government has indicated that the success of the project has created a demand for a more substantial version of the service and is considering inviting bids from service providers for its expansion.

The Netherlands has introduced a Council for the Judiciary as part of legislation introduced in January 2002. The Council has responsibility for IT developments within the judiciary and has cooperated in the development of a 'virtual department of information management,' which is charged with the responsibility to manage e-justice developments.

A new system of criminal justice administration is also in development. The Council for the Judiciary is working with the Public Prosecutors office and the Police on interoperability issues.

France

An overhaul of the technical standards—the Technical Coherency Framework—provides all government ministries in France with specific technical requirements that are aimed to ensure interoperability of all government systems. These standards will form the backbone of the next stage of the Justice Ministry's information plan, and will act as a guide to all agencies within the public justice system which need to share information.

Denmark

Denmark has demonstrated a firm commitment to e-government with the creation of a digital task force. Projects for the justice system include the implementation of a network linking all courts together.

At present, the separate systems used by the courts, the police, and the probation service are not capable of working together. However, at the end of 2001, the Danish Ministry of Justice drew up a new IT strategy as part of the efforts to create an integrated criminal justice system. Though the project is still in the research phase, the Ministry has expressed its desire to have some degree of interoperability in place by the end of 2002.

Sweden

Sweden has created a council (the RIF Council) overseeing the supply of information both to and within the justice system. Membership is drawn from various parts of the justice system, including the courts, state prosecutors, the prison and probation system, the national council for crime prevention, and the criminal victims compensation and support authority.

The council has in turn set up a number of working parties examining such issues as information security and data standards. The council has also set up a project to use video links for remote witness statements in court.

The National Courts Administration in Sweden has started development work on a new, Web-enabled system of case management that will provide far wider access to case files than has to date been possible. The VERA system is being developed in close association with the courts, with the aim of maximising its usefulness and accessibility.

Networks in Action: Cisco Case Studies

The Cisco Networking Academy™ Programme in the Italian Criminal Justice System

The Cisco Networking Academy Program—the largest and most advanced e-learning programme in the world—is a not-for-profit initiative that provides resources, content, and knowledge to a huge variety of private and public sector bodies around the world, giving them the possibility to create much needed networking skills and know-how across a broad spectrum of learners. The technology competences the Networking Academy Programme can create within the customer's organisation can quickly drive IT choices and create new budget for investments in technology.

In Italy, Cisco has entered into discussions with the Ministry of Education to pilot the Networking Academy Programme in a jail for the benefit of both prisoners and guards. The common goal is to bring exposure both to Cisco and the Ministry in the area of social initiatives, and provide great benefits for the prisoners by enhancing their likelihood of securing employment and avoiding a return to crime once released from prison. A memorandum of understanding was signed in May 2002 between Cisco and the Italian Ministry of Education. The first pilot project will start in the prison of Bollate (Milan) and then be replicated in other jails around the country. The program also involves an employment agency that is able to identify and assist employers and trained ex-prisoners to match skills requirements with their abilities.

In addition to the work carried out within the prison system, the use of the Cisco Networking Academy Programme has expanded to other aspects of the criminal justice system.

The Postal Police department in Italy is a nationwide network responsible for controlling and preventing crime on the Internet. The Postal Police central department wants to use the Networking Academy Programme to develop the networking expertise of their staff across the country, a knowledge base that must be developed if they are to be successful in the fulfilment of their responsibilities to monitor, identify, and prevent Internet-related crime.

Creating a networked justice system in Portugal

The Portuguese Ministry of Justice has set itself the task of greatly improving the efficiency and effectiveness of the judicial and associated processes for the administration of both civil and criminal justice. A vital element of this process involves the removal of barriers between different parts of the legal administration and creating the ability to pool resources and data to share information more effectively and to a wider group of stakeholders.

Initially, the installation of WAN and LAN has achieved the primary goal of the Ministry's mission to have the courts and registrars' offices connected throughout
the country (some 500 sites). The next phases of the project involve the creation of centralised resources (applications and data) that will allow judges, lawyers, etc.,
to track the progress of cases and to review commonly accessible files over the network, and ultimately the introduction of citizen access through the Internet and self-service portals for the administration of routine matters.

Phase I of the project is now complete with the networking of all the courts and registrars offices together, Phase II, which is halfway to completion, involves the installation of voice and video-over-IP capability to allow for videoconferencing and the ability to receive remote witness depositions, as well as the introduction of central applications and data resources that will allow legal proceedings, timetables, and other information to be made securely available to a range of stakeholders and others. Phase III of the project will be the introduction of public access to aspects of civil justice administration, including self-service ability for routine matters and registrations.

Creating a networked Justice Academy in the Czech Republic

The Justice Academy is an element of the government's project to create life-long learning initiatives for judges. The Justice Academy will be a special centre equipped with training courtrooms, media and IT facilities. The centre will be run by a team of people who will arrange specific training programmes in the use of and networking technologies. The centre will also coach the judges in the use of video over IP to be used in videoconferencing and virtual hearings, as well as IP telephony.

Conclusion

"That parts of the system are still, in the first decade of the twenty-first century, effectively relying on manual systems to support some of their key tasks is a public disgrace."

Lord Justice Auld, The Auld Report, Criminal Justice in England & Wales

The challenges facing the creation of integrated and interoperable criminal justice systems are formidable. Not only must individual criminal justice agencies adopt and implement strategies and technology that improve their efficiency, they must begin to develop real collaboration with all other agencies and stakeholders in criminal justice systems.

The demands for public safety are growing more and more clamorous in all parts of the world. The pressures on governments to act are intense. By using technoligy to integrate the presently often disparate elements of justice systems, greater strides can be made towards regenerating public coinfidence in criminal justice systems. However, as this paper demonstrates reliance on technology as a panacea for the difficulties that most systems face is not a workable strategy. Cultures and organisations must develop alongside new technology if the potential for new systems is to be delivered.

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