

VOTE 20 - GARDA SÍOCHÁNA

23. PULSE Computer System

Background

Consultants were engaged in 1992 to draw up an Information Technology (IT) Strategy Plan for the Garda Síochána to replace its technologically out-dated standalone computer systems. The consultants recommended strategies

- to maximise the resources devoted to operational duties and their more effective use in preventing and detecting crime
- to devise a plan to integrate operational systems and to upgrade the existing computer platform
- to identify how IT can facilitate the achievement of the goals in the Garda Síochána's corporate plan
- to identify interdependencies, relationships and inconsistencies between the various plans and proposals, to assess their likely impact on each other and to consider how they may be resolved
- to develop a framework to simplify and automate operations and integrate information to achieve the overall objectives of efficiency, effectiveness and cost management.

The Government approved implementation of the IT plan, as part of its anti-crime drive in 1993, at an estimated cost¹³ of £36.5m, with an expected annual increase in Exchequer receipts of £3m.

Following a competitive tendering process, the consultants were subsequently contracted, at a cost of £1m, to bring the plan to conceptual design stage. The conceptual design was to

- determine the extent to which work practices and flows had to be re-engineered
- determine the broad scope of the applications to be designed
- determine the high level functional, technical and change management requirements
- update the Strategy Implementation Plan and business case based on the most up to date information.

The completed conceptual design formed the blueprint for the PULSE¹⁴ project and provided for 27 distinct but integrated system modules. The overarching objective of the project was to improve

¹³ *All costs shown are inclusive of VAT.*

¹⁴ *PULSE: Police Using Leading Systems Effectively*

the contribution of the Garda Síochána in policing and the fight against crime as part of an overall law and order strategy.

Benefits Envisaged

The main benefits to the Garda Síochána envisaged from the project are

- freeing up Garda resources for operational duties
- fast access to vital data on persons, addresses, vehicles, etc. to ensure better response to incidents
- major improvements in criminal intelligence analysis, crime detection and service to the public
- increased detection of property crimes and return of stolen property
- improved analysis of road traffic accidents, identification of accident black spots and implementation of road safety initiatives
- targeting of potential high-crime regions
- supporting greater integration across the criminal justice system
- improved monitoring of persons on bail and the conditions of such bail, summons service rate, warrant service and monitoring of young offenders
- on-the-spot transmission of alerts and information on the status of incidents.

Audit Objectives and Scope

The audit set out to review planning, implementation and management of the project and to compare progress against plans.

The audit included a review of departmental papers including minutes of the meetings of the various committees set up to manage the project, the Strategic Information Technology Plans produced by the consultants, the consultancy and development contracts and the project management methodology.

Meetings were held with the staff of the Department and with Garda Síochána Management including members of the project management committees.

Management of the Project

The PRINCE¹⁵ project methodology used in conjunction with the Structured Systems Analysis and Design Methodology and recommended by the Department of Finance, is applied to the project. The methodology defines roles rather than individuals and allows concentration on the products of the project and sub-divides the project into stages. Under the methodology the following management and implementation structures are in place.

- The Information Technology and Telecommunications Executive Committee (Executive Committee) charged with strategic direction of the project, reports to the Garda Commissioner and the Minister.
- The PULSE Project Board provides overall direction and management of the development contract. It approves all major plans, authorises any deviations from agreed stage plans and approves the completion of each stage and the start of the next stage. It reports quarterly to the Executive Committee.
- The Central Systems Project Board, responsible for the management and implementation of the Garda only aspects of the project, reports to the Executive Committee quarterly.

The Boards are drawn from the Department of Justice, Equality and Law Reform, the Department of Finance (CMOD), senior members of the Garda Síochána, outside academic and business experts and prime contractor staff.

The project management and systems development methodologies have been used in an appropriate manner.

Change of Project Scope

Before the project commenced, the estimate for implementing the 27 elements identified in the conceptual design and a separate automatic fingerprint identification system costing £2.18m had increased from £36.5m to £55.6m. The reasons for the increase were

- identification of new systems to be developed
- increased scope across the identified systems
- the inclusion of office automation in the project.

The main cost element of the project was software development and a request for tenders covering this element and change management aspects of the project was issued in April 1995. The request was prepared on the basis of implementing the 27 modules originally envisaged but included a proviso that the areas to be developed could be negotiated with the preferred supplier. After evaluation of tenders, the consultants who prepared the initial strategy plan and conceptual design, being the lower of two qualified tenderers, were selected in January 1996 as the prime contractor at a price of £23.6m (prime contractor staff costs of £18.52m and software costs of £5.08m). As this would have brought the overall cost significantly above the amount approved by Government, the

¹⁵

PRINCE: Projects IN Controlled Environments - a structured project management methodology

Executive Committee opted to negotiate a reduction in scope of the overall project to remain within that approval. The reduced scope gave priority to operational systems as opposed to administrative systems.

Following negotiations with the contractor it was agreed in March 1996

- to reduce the number of modules to be implemented from 27 to 17. This was achieved by separating the project into two phases, with 17 modules being implemented in Phase 1 for which funding was available and the remainder being deferred to a subsequent Phase 2 for which funding had not been sought
- to reduce the quantity of computer and ancillary equipment to be acquired
- to reduce the number of locations from 242 to 161 (subsequently increased to 181). The original plan was to install the system in all Dublin Metropolitan Region (DMR) stations and all Divisional, District and Area headquarters outside the DMR. These account for 90% of incidents reported to the Garda Síochána and ensure that 80% of Gardaí would have access to the systems. The reduction meant that the system would be implemented in all DMR stations and all Divisional and District stations outside the DMR. Procedures are to be put in place to ensure that Gardaí in non-networked locations have access to PULSE data
- to remove office automation from the project.

A contract in the sum of £12.9m for prime contractor's staff costs plus software costs¹⁶ of £5.67m was entered into on 20 September 1996.

Systems Development Contract

The contract provided, *inter alia*, that

- the 17 modules be delivered in three phased releases (see table 16)
- the contract would automatically terminate on the acceptance, to the reasonable satisfaction of the Garda Síochána, of completion and pilot implementation of Release 3
- the parties may review the continued relevance of deliverables and where appropriate agree revisions in writing
- copyright and any and all intellectual property rights in the systems developed be vested in and owned by the Garda Síochána
- the prime contractor would have exclusive marketing rights to the systems developed and pay a royalty of 3% (advised by the Department of Finance) of the net sale price to the Garda Síochána
- the prime contractor would supply additional personnel to fill particular project roles should the Garda Síochána fail to meet its contractual staffing obligations

¹⁶

Development, architecture and executive software licences and maintenance costs.

- the total sum payable to the contractor is a fixed maximum sum.

The contract did not provide for penalties for the late delivery of releases but did make provision for penalties for the non-delivery of the elements within each release.

Table 16 - Module delivery schedule

	Release 1	Release 2	Release 3
Planned Delivery Dates	September 1996 to September 1998	May 1997 to September 1999	June 1998 to September 2000
	Incident Response (Interim)	Incident Response (Full)	Driving Licence and Insurance Production
	General Inquiry	Court Outcomes	Juvenile Liaison
	Property	Computer Aided Dispatch	Bail
	Firearms	Alarms	Prisoner Log
	Intelligence (Interim)	Summons	Intelligence (Full)
	Incident Analysis (Interim)	Warrants	Incident Analysis (Full)
		Charges	Traffic Accident Analysis

Meeting the Human Resource Requirement

Under the contract 60% approximately of the man hours required to develop the project were to be provided by the Garda Síochána in order to ensure that in the long term they would be self sufficient in terms of operations, maintenance and enhancement of the systems.

As the project progressed additional scope and functionality were identified and, in accordance with the appropriate use of the project management methodology, were approved by the Executive Committee. From the very beginning it proved difficult to obtain Department of Finance sanction for the recruitment of the requisite number of IT staff to meet the Garda commitment under the contract. Moreover, recruitment and retention of suitable staff proved difficult due to considerable buoyancy in the IT market.

The changes in scope resulted in an estimated shortfall of 2,100 Garda days being provided to the development effort to the end of December 1996. The contractor exercised his right to meet 300 days of this shortfall at a cost of £300,000.

A major review of the remainder of the project carried out in December 1996/March 1997 indicated that 9,980 additional days would be required (including the 2,100 shortfall referred to).

The Department of Finance proposed that the additional staff be sourced from within the Garda Síochána or by competitive tender. The Department of Justice, Equality and Law Reform felt that

these were not feasible options as internal resources were not available and the engagement of a third party contractor would complicate an already complex project and could expose the project to further delay and year 2000 risks. Furthermore, more competitive rates had been negotiated with the prime contractor for the extra days required. Following consideration of all the factors, the Government, in February 1998, approved the proposal of the Department of Justice, Equality and Law Reform to engage the additional staff resources from the prime contractor at an extra cost of £6m. This brought the contract for the supply of staff to £18.9m.

Rescheduling

The review of the project also pointed to the need to reschedule delivery of Phase 1. As the project progressed, the project management process identified changing requirements (as well as evolving technological changes) which necessitated deferring some of the originally planned modules, bringing forward another which had previously been deferred and adding further functionality.

At the date of this report, of the original seventeen modules planned for Phase 1, seven have been fully implemented and four others partly implemented in a first release; the second release scheduled for delivery in March 2001 envisages full implementation of the four partly implemented modules together with three others; the remaining three are deferred. Therefore, by the third quarter of 2001, on full implementation of Phase 1, fourteen of the contracted seventeen modules, together with the module originally deferred to a subsequent Phase 2 and four previously unplanned modules will be in operation.

The prime contractor is responsible for each release up to the satisfactory completion of the pilot stage. Full implementation of each release is scheduled to take place six months after delivery by the prime contractor and is the responsibility of the Garda Síochána.

Costs

The cost of the project up to 30 June 2000 is £43.64m made up as follows

Cost element	£m
Prime contract costs (inclusive of the initial IT strategy plan and conceptual design consultancy contracts)	20.42
Estimated costs of directly employed civilian staff engaged in the project	2.00
Hardware costs	10.97
Software costs	2.78
Telecommunication	3.15
Training and research	0.20
Maintenance costs	1.86
Automatic fingerprinting service	2.26
Total #	43.64

Because of delays in bringing the project into operation expenditure of a further £480,000 was incurred when the old system, which was not year 2000 compliant, had to be replaced.

The estimated final cost of Phase 1, which is expected to be fully implemented by the third quarter of 2001, is now put at approximately £46 m. This does not include the cost of Gardaí involved in the project as records of this involvement were not maintained.

Industrial relations difficulties pertaining to the involvement of Gardaí in the day-to-day operation of the project were not resolved until October 1999.

Conclusions

- Phase 1 is to be delivered by the prime contractor by March 2001 rather than September 2000 at a cost of £46m. Elements deferred to Phase 2 are currently being reviewed in the context of establishing priorities and approaches in relation to the next stage of IT development in the Garda Síochána. Fifteen of the twenty seven modules, identified in the conceptual design which followed Government approval of the IT Strategy plan in 1993, will be in operation on completion of Phase 1 of the project together with 4 unplanned modules identified during its development.
- The scaling down of the project by reducing the number of functions being provided, the volume of hardware being installed and the number of locations in which the system would be installed from 242 to 181, to remain within the Government approved budget, raises questions as to whether what is being delivered is what Government had effectively approved and whether the original objectives were realistic. In this regard the Accounting Officer stated it may have been that the consultants engaged to assist the Gardaí in formulating their IT plan were over-optimistic in their costing. Nevertheless, he pointed out that the PULSE project was put out to competitive tender and there was no choice but to accept the lowest tender received which involved cutting back on scope to remain within the Government approved budget.
- The initial submission to Government did not take account of the full costs to be incurred by the Garda Síochána in the development of the project although it was clearly intended that this would occur. The expected availability of Garda resources for the project was overestimated. The failure to ensure that this internal resource materialised has resulted in the approval of additional contractor costs of approximately £6m with the final extra cost not being determined until completion of the project. The Accounting Officer stated that it was recognised before the contract was placed that the number of civilian IT posts sanctioned for the project would be inadequate. This was partly compensated for by using Garda resources. However, in the absence of sanction for the creation of further IT posts in the Garda area there was no other choice but to contract the additional resources needed.
- Records of Garda staff costs in developing, training and piloting the project through its various phases should have been maintained so as to enable complete costs of the project to be computed and recognised.
- While acknowledging the complex nature of the overall project and that projects of this sort cannot be fully designed at the planning stage, nevertheless, given the extent of the same consultants' involvement from the outset it is a matter of concern that the main contract required such significant change in scope over its lifetime. The consequence of such change would have been much greater but for the use of an advanced project management and implementation methodology by the Department. The Accounting Officer emphasised that

the PULSE project involved leading edge technology, in national terms was very big in scale and had no direct counterpart elsewhere in police services.

- The amendment to the contract changed the balance of man days to be spent on the project. The contractor is now to supply 53% approximately of the man days for the project as against the 40% originally envisaged. The consequences of this in the long term is a possible detrimental impact on the requirement for self sufficiency, fewer Garda resources to undertake Phase 2, a reduction in the Garda capability to undertake the execution of pilot schemes and the long term loss of expertise on the project within the Garda Síochána. The Accounting Officer accepted that this was an inevitable consequence of the inadequate number of Garda IT staff for which it proved possible to obtain sanction.