ORGANISING DATA EXCHANGE IN THE DUTCH CRIMINAL JUSTICE CHAIN

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Abstract

Effective exchange of information in the criminal justice chain is crucial for effective law enforcement, but difficult to achieve. This article describes the case of the development and introduction of electronic data exchange in the Dutch Criminal Justice chain. Basic theories on the introduction of IT in justice organizations are tested by means of qualitative empirical research.

Case flow management automation is technically feasible in the criminal justice chain but presupposes willingness of different organizations attached to that chain to adapt working processes for that purpose. The Dutch case shows a relative failure of the development and implementation of an integrated case flow management system for the entire chain (from the police via the public prosecutions office and the courts up to the prison service). It also shows a relative success of connecting xml-based data files to different reference indexes using intelligent agent software. Compared to the intended integrated case flow management system this solution for inter-organizational data exchange is much more simple and flexible because it does not demand a far reaching adaptation of internal organizational routines. It avoids the complexities of justice organizations and simplifies tasks related to data exchange. The data therefore are more accurate and are faster available. The most important advantage however is that risks of failure of development and implementation are reduced.

Transylvanian Review of Administrative Sciences, No. 28 E SI/2009 pp. 8-26

1. Introduction[1]

Information-exchange between the police, the public prosecutions office, the courts and the penitentiary institutions are crucial for effective criminal law enforcement and especially for execution of sentences. The computerization of these streams of information has two potential advantages: a higher accuracy of the information and a higher speediness. With better and faster information the law enforcement process evolves better. In an ideally automated criminal justice chain the police report, proof, judgment etc. can be made available electronically to the next service in the chain. Advocates can electronically log on to the system and view documents on-line and submit productions for the defense.

In 2001, at the closure of an international comparative study into the use of ICT in justice administration, Francesco Contini concluded the most important challenges with development and implementation of third generation automated systems concern organization and management. This is about the creation of new procedures and shared aims, but also about the acceptance of those procedures and aims by the organizations that have to work with it. That is not self-evident at all, because actors in the reorganization process also will have to deal with a change of roles. In the context of justice administration it is not self evident that public prosecutors, judges or the management will accept these changes of roles without due consideration and persuasive action (Contini, 2001, pp. 329-330). This stand was repeated later in an article published together with Antonio Cordella. Contini and Cordella state that you cannot separate large information systems from the actual organization for which they are designed. When developing a new system for an organization you need not only manage that development process but also the interactions between the system-under-development and its intended users. Ignoring these interactions will lead to failure (Contini and Cordella, 2007).

Velicogna summarized the outcomes of 20 years of research on the functions of ICT in organizations. According to him, justice administration has become so complicated that developing and introducing IT solutions for justice organization have become unmanageable. The solution seems to be to simplify tasks of automation systems, for example by developing ways to file the simplest cases and deal with them on-line, like uncontested money claims, in stead of developing systems that automate all possible proceedings (Velicogna, 2007, pp. 129-147). This was recently confirmed by Dory Reiling, who suggests that automation of e.g. case flow management should be directed at the simple cases in the highest numbers. This means that developing one system for all types of cases has a higher risk of failure (Reiling 2009, pp. 111-117). Like Contini and Cordella, Velicogna refers to the problem of acceptance of new technology. He

1 This article is a reworked and updated version of a report for a research project directed by Marco Fabri and financed by the European Commission under the AGIS flag. See: M. Fabri. (ed.), *Information and Communication Technologies for the Public Prosecutor's Office*, 2007, Bologna: CLUEB.

states there may be a difference between the 'law in the books' and the 'law in the organization'. Software ignoring that difference is doomed to be rejected by its users.

In this paper, we explore why realization of good automation of workflow and data interchange within justice organizations is difficult, by testing the theory of Contini, Cordella and Velicogna, against the development and introduction of IT in organizations as a part of the criminal justice chain. In a summarized form this theory states:

1. Justice organizations are so complex that solutions for computerization of services tend to fail. Their complexity makes the interaction between the organization and the system under development uncontrollable.
2. In order to enhance the chances of success of the introduction of new computer technology in justice organizations, the tasks to be dealt with by the new system should be simplified.

Object of the research are current projects of the Dutch Public Prosecutions Service, but other ICT projects started by the Ministry of Justice and the Ministry of the Interior as well. For this research we used government information and literature. Furthermore we interviewed twelve persons that were directly involved in finished or current projects in the criminal justice chain.

2. Information exchange in the Criminal Justice Chain

The criminal justice chains consists of a large number of organizations providing law enforcement together, from criminal investigations via prosecutions to courts, and from there to execution of sentences and rehabilitation of prisoners. Those organizations exchange a lot of information. Generally speaking, law enforcement begins with the police. Crimes are being registered and further investigated. If the facts and circumstances of the case are clear enough and there is a suspect, the case is transferred to the prosecutions service for prosecution.[2] The public prosecutions office must file a summons in order to have the suspect appear in court.[3] The court and judges are the third link in the chain. They must check the indictment and decide on culpability and punishment of the suspect. For this purpose the judge can appoint several experts, e.g. someone from the child protection agency or a psychiatrist. Consequently, the judge gives a judgment, and after that the public prosecutions service reappears as the responsible agency for executions of sentences. The actual execution of sentences – imprisonment, fines, community service or other restrictions, is the final link in the criminal justice chain. Sanctions entailing imprisonment or other kinds of deprivation of liberty are executed by the Justice Institution Service (Dienst Justitiële Inrichtingen -DJI). Collecting fines is the task of the Central Fines Collection Agency (Centraal Justitieel Incassobureau - CJIB), which actually deals with very large numbers and does this successfully -13.000.000 in 2007- (CJIB, 2008). For

2 If no police transaction can take place.

3 The Public Prosecutions service can also propose a transaction to stop further prosecution.

guidance of offenders with a community service sanction the probation and aftercare service is responsible (Lodder and Oskamp, 2004, pp. 215-237).

Below, we describe the development of information systems in the Dutch criminal justice organizations since the 1980's.

MITRA and TULP

For the prosecutions service it is important to know where a suspect is being detained or to know his address accurately. For this information an adequate exchange of information between prosecutions service and the Justice Institution Service is crucial. Automated systems can support this data interchange. One of the first systems for this function was MITRA (Management Informatie systeem sTrAfrechtstoepassing-management information system for the application of criminal law- 1983). MITRA was fed with data by the Justice Institution Service, but also the prosecutions service could read, enter and change data. In 1988 the prosecutions service had its own system, COMPAS (Communicatie Openbaar Ministerie en Parket Administratie Systeem – Communication System for the Prosecution Service). This is not only a registry, but also a case management system. Those registries contain data referring to cases, and it is their function to keep these data and files up-to-date, and also to exchange data with a.o. MITRAS. The Justice Institution Service changed to the TULP system (Ten Uitvoer Legging Persoonsgebonden straffen – Execution of Person related Sanctions) in 1993. This required a special connection between MITRA and TULP, which was replaced by the prosecutions service own access portal to TULP. This access portal consisted of the reference index for persons in criminal cases, so that they could see who was detained and where. This was considered a temporary solution, but is being developed into a more modern solution to date by the Justice Information Service.

COMPAS

In 1988 COMPAS was operational in all 19 different public prosecutor offices (arrondissementsparketten). The system is still in use to date, but its replacement with GPS is near completion. COMPAS has four main features/modalities/functionalities:

- registration of data from every suspect as soon as prosecution starts;
- checking deadlines and supporting writs of summons;
- administrative support with execution of punishment;
- delivering and taking data from other IT systems (e.g. police and prison) during trial (Lodder, Oskamp and Duker, 2000, p. 19)

COMPAS does not have one central database, it is a decentralized system. Each prosecutor's office has its own database with information regarding cases handled by that particular office. The local public prosecutions offices also have developed local adaptations to COMPAS. This makes it difficult to extract accurate information for RAPSODY and OMDATA, the management information systems connected to COMPAS for the College of Procurators General in charge of the prosecutions service at the national level.

Working with COMPAS involved several problems. Possibilities of data exchange with other systems were limited. If it was possible to exchange data in theory, most of the time it didn't work in the real world. Reasons were sloppiness and unwillingness of the users and bad communication between Public Prosecutions Service, police, judiciary and the prison service. Furthermore, data are not always entered into the system timely, accurately or at all, because the person to enter the new data is not informed of their existence or people don't use the accurate codes when entering data. This may lead e.g. to not registering the release of a person.

In 1999 the College of Procurators General decided to develop a new system. COMPAS was considered technically too outdated and they thought that updating the system would not turn out adequate results (Lodder and Oskamp, 2004).

HBS

In 1997 a start was made with the development of a separate ICT system for appeals from the first instance court to the appeal courts (gerechtshoven) – HBS (Hoger Beroeps Systeem – System for Appeal to the Second Instance Courts). This was developed as a workflow management system. However it appeared to be too complex and it was called a failure in 2001. This has cost 13 million Euro's. The failure can be explained too much influence of end users on the development of the system. This made it difficult to manage its development.

According to a spokesman of the Ministry of Justice, who was a member of the project board, things went wrong right from the beginning. At the start in 1997 the intended end-users of the system were too much involved in the design of HBS. Because of all their demands the system turned into a 'bubble bath with golden handles' (Sanders, 2001). It was decided to use state of the art technology instead of proven technology. The Ministry of Justice wanted to be modern. The idea of workflow management was booming and fashionable at that time. In 1999, two years after the initial start, it was decided to restart the project. Users were put on larger distance by installing a resonance group with a limited number of experts. For better day to day management a board was installed with representatives from the ministry (the projects' principal) and the customers, being the Prosecutions Service and the Court Magistrates.

It turned out that the judicial processes were more complicated than foreseen, because of all the exceptions and changes in laws. The IT builders hadn't taken that into account.

Reality not always fits in computer programs. For example: a transaction proposal by the public prosecutor to the suspect of a traffic offence like driving over the speed limit. It is possible that a person wants to have his case brought up for court and then in the courtroom he decides to pay the fine on the spot. If this happens the judge will remove the case from the list. According to the law this is not possible, but in real life it happens frequently. The HBS application couldn't manage this kind of situations.

Another problem seemed to be that consulted experts for the content did not have enough expertise on the processes that went on in the Public Prosecutions Offices at

the appeal courts level. The final users of HBS that had to administrate the handlings were very critical when they tried and use the HBS system during a test in 2001 (it took four years until the first test of the system by its end users).

The system lacked certain important functionalities. It was impossible to correct mistakes; it lacked opportunities for documentation and also could not connect adequately with other systems. Because of this the Minister of Justice pulled the plug out of this project (Sanders, 2001).

One of our interviewees told us that within Public Prosecutions Office and within the Appeal Courts, the managing magistrates often have great difficulties to understand what is at stake in these processes:

> *The chair of the appeal courts presidents' assembly appears to have said to the Council for the Judiciary that the system was worthless. We as project managers from the Public Prosecutions Service and the Appeal Courts heard that during a meeting with persons working for the council. The project manager for the Appeal Courts, a coordinating vice president, complained that his president apparently didn't know what he was doing on this project although his room was only two doors away from him.*

Thus, support and communications for an ICT project underway may be thwarted by the top-management. HBS may be considered an example of failure of developing and introducing a more advanced IT-system in an organization of the justice field. On the one hand, developing such a system demands standardization of information between at least two organizations (Public Prosecutions Service and the Appeal Courts). The standardization appears to be a time consuming, but doable negotiation process. On the other hand, there is a tension between the top management and the project-management. For the project management negotiations relate to what is technically doable and reliable and to the commitment of end users to the project. The tension is between too many demands and technical possibilities. Furthermore, the standardization, when operated in a software application, forces end-users into a new way of doing their work. Most people do not like that. And, last but not least, standardization means that the top-management should give up part of their grip on their organization to the standardized process. Presumably, complaints from the shop floor, the centralization aspect, the extra efforts to make a new application organizationally effective, and generally, lawyers' conservatism if it comes to using ICT's may lead to obstruction of the development and introduction at different levels, whereas technical problems generally speaking are not the causes of these failures (Lodder, Oskamp and Duker, 2000; Molenaar, 2002; Sanders, 2002, 2004; Oskamp and Lodder, 2006).

NIAS

NIAS ***(NIeuw appel system – New Appeal System)*** is an electronic registry for criminal appeals, used by the five appeal courts and five public prosecutors' offices at the appeal court -level. So it is not a workflow system, and it was developed following

the failure of HBS. It registers all personal details of a suspect and it keeps track of deadlines. NIAS produces indictments and writs of sentences. The COMPAS system and the appeal system NIAS are connected. Because of separation of powers there is a difference in accessibility for judges and prosecutors. The substitute Advocate General (Public Prosecutors Office) we interviewed on this issue stressed that it had been a very complex negotiation process to make NIAS work at all between the Public Prosecutors Office's and the Appeal Courts. He said:

> *The main reason for NIAS' success is the regular consultation between different parties concerned (persons from ICTRO, from the board of prosecutors general, a judge from one of the appeal courts, a representative of the Council for the Judiciary and a prosecutor from a resort- Public Prosecutors Office). This group meets every fortnight to discuss problems and possible updates of the NIAS system because of amendments of the law etcetera. The input for these meetings comes from monthly gatherings with a group of end users of the system. This way there is enough public support within the organization and users stay committed. Communication between the courts and the Public Prosecutors Office is extremely important.*

VIPS, VIP and the ePV[4]

VIPS

VIPS (Verwijs Index Personen Strafrechtshandhaving –Person Reference Index Criminal Law Enforcement) is an application system that is able to connect data from applications of different agencies. Essentially, it is a reference index. The kind of information retrieved from e.g. TULP or COMPAS, is determined by the person asking for the information. VIPS was developed already in 1993. It was connected to COMPAS in 1995 (Lodder, Oskamp, and Duker, 2000)

The kind of information stored in VIPS is the name of a person and the places where the files' related to this person in the criminal justice chain are (electronically) stored. During the last few years this system has been activated with 'message brokers'. This involves that changes in the data concerning a person in one system will be updated in the other systems, as long as a person is 'dealt with' within the justice chain. For this reason, the later "VIP" is also connected to the population registries of the municipalities, and to the Central Judicial Fines Collection Agency.

The data VIPS works with are restricted to the number connected to a person, the name and address, and date of birth, and to the position of the file of the person in the criminal justice chain. It will be possible to connect biometrical data to this file. The statute act concerning the determination of the identity of suspects entered into

4 This paragraph is based in part on: Lodder, A.R., Oskamp, A. and Duker, M.J.A., *Informatietechnologische ondersteuning binnen het Strafprocesrecht* (ITeR rapport no. 36), 2000, Den Haag: SDU, pp. 24-26 and pp. 38-40.

force in the summer of 2009.[5] It creates the legal basis for connecting a criminal record number, address and name with biometrical data (fingerprints, body measures, iris-scans, DNA profiles) by means of VIP. This has been arranged in an Order in Council.[6] The idea is to make fraud with identity impossible. So it will become very difficult to have someone else do time for you in jail – as allegedly happens sometimes, according to the ministry of justice; it will also become more difficult to steal someone's identity. The proposal also contains the legal basis for storage of these data for different periods of time (longer for crimes, shorter for misdemeanors). In the motivation for this bill, explicit connections are being made with biometrics in passports, drivers' licenses, and communal population registries. It should be noted that for serious crimes the term of data preservation may be up to 40 years, with the possibility of prolongation.

VIP

The fact that VIP – started in 2003 – has lost the 'S' of 'Strafrechtshandhaving' – criminal law enforcement – is exceptionally meaningful. The website www.justid.nl has links with all kinds of agencies, also involved with administrative law enforcement (e.g. taxation, secret service). Potentially they can make use of the same index, but as far as we know, no legal basis exists for this as far as no transgression of law has occurred. Considering the sensitivity of the data, especially after execution of punishment is completed, it is extremely important that clearances to access this database, also within the police organization, will be limited and well controlled. The proposed legislation pays not a lot of attention to this aspect, apparently taking the effectiveness of internal control mechanisms based on electronic storage of log data for granted.

From ePV to the Justice Information Service

Based on a project for the electronic filing of police reports in 2001 (*electronisch ProcesVerbaal*), the Police, the Public Prosecutions Service, the Council for the Judiciary, the Ministry of Justice and the Ministry of the Interior set up a project, ePV, to make data interchange between governmental organizations easier by connecting the digitally supported workflows within the separate organizations of the criminal justice chains. The project was kept quite 'low profile', and had quite a technical presentation. (Domisse 2007, pp. 46-50).

The experience is that originally each organization has its own standards, making data interchange impossible. The aim of the project was to encourage open standards

5 Wet van 18 juli 2009 tot wijziging van het Wetboek van Strafvordering, het Wetboek van Strafrecht en enige andere wetten in verband met het verbeteren en versterken van de vaststelling van de identiteit van verdachten, veroordeelden en getuigen (Wet identiteitsvaststelling verdachten, veroordeelden en getuigen), Stbl 2009, 317, 28 juli 2009.

6 Besluit van 6 augustus 2009, houdende vaststelling van het Besluit identiteitsvaststelling verdachten en veroordeelden, Stbl. 2009, nr. 352.

(XML) for the infrastructure for data interchange within the entire national public service. Commercially obtainable standards are promoted; this is considered necessary for international data exchange in Europe eventually as well.

The work of ePV has been quite successful so far, even although the electronic police report filing project failed. Based on this work, a new agency has been set up, the Justice Information Service – www.justid.nl. The focus of this organization is primarily to facilitate exchange of information between agencies within the justice department and the justice chain. This is not restricted only to criminal law. There are also links with the Youth Protection Agency, with the Immigration service and with Mental Health Institutions.

GPS

GPS (Geïntegreerd Proces Systeem – Integrated System for Criminal proceedings) is the new system under development for the criminal justice chain, and anyway for the Public Prosecutors Office's and the district courts. Development has been under way for a long time already, since 2001. GPS is a case flow management system; its objectives are not only to register cases, but also to replace the paper filing system and to generate management information. Next to that, it also increases accuracy as it is connected to the VIP and to the Municipal Population registries, and therefore is a part of the strategy against identity fraud in the criminal justice system. As case flow management system it makes a distinction between simple cases (e.g. traffic offenses) and complex cases. Thus different workflows are created.

We want to present this item more extensively because the development and implementation process of this system appears to be a good example of the huge efforts required and the risks that will occur.

When fully functional, GPS should be able to process files from the police up into the first instance courts, with special modules for the examining judge and the advocates of suspects. This is a far reaching perspective, compared to the COMPAS-guided, actual paper work in the Public Prosecutors Office's and the district courts.

The functionality of GPS is multiple. First of all, GPS also is a registry. The data of the suspect must be copied manually from the police report (presented on screen in pdf). Furthermore, it is possible to read the file, with all the elements, and to add necessary information related to case – processing. The file – elements may be in pdf, gif and so on. It is possible for certain readers to make notes in the file, or to highlight certain aspects. Depending on their function, readers may decide to open up their notes to others or not. Part of the functionality is that GPS can present an authorized summary of the entire file. Next, GPS can also open the decision support system BOS (an advisory system for public prosecutor to demand similar sanctions in similar cases). And, last but not least, GPS is also accessible for the network based VIP- data updates. The former GPS-project manager:

> *The benefit of GPS is the number of different functionalities. The downside is that GPS has a large implementation threshold. Actually it should be forbidden to demand such big steps from people at the shop floor.*

The hurdles

Anybody who has seen the files-room in a prosecutions office or in a court can imagine the advantages a case flow management system may have, but everybody who has some experiences in designing and implementing ICT's in public administration or the justice field, may also know how difficult it is to actually realize these gains. Jan Grijpink:

> *The criminal justice chain consists of a thousand people that all whistle their own tune. Put it all together and it sounds terribly off key.' … 'To get them to work together is difficult, because a lot of the people involved are not only rather clever, but also used to performing solo. The only solution for change is doing it slowly, taking it step by step.*

A former GPS project manager:

> *Lawyers tend to question everything. A judge likes to take his time before finally deciding. And a prosecutor doesn't trust anybody and is always suspicious.'…'Some judges are near retirement. They don't want to work with yet another new system. Others aren't very cooperative for other reasons. But they are all academics. They're smart enough; they could if they wanted to. But they still have the kind of attitude of being Gods' gift to humankind, and therefore especially appointed by her Majesty the Queen of the Netherlands.*

Development and implementation of GPS appeared to be most complicated. The GPS trajectory started in 2001. Since then 80 million Euros have been invested. Deadlines were long past and only one module actually functioned, the one for drunk-driving cases. There also has been quite some criticism from ICT- experts and others in the Netherlands. The basic criticism is, that they consider GPS as another large scale ICT-development and implementation project, and is therefore likely to fail (Sanders 2001, 2004). For GPS, persons of the police, the Public Prosecutions Service and the district courts were involved during the development process. But desires of end-users have been restricted, as HBS had shown that too much influence may jeopardize the entire product. Not everybody perceives it this way however. Criticism by one of our interviewees, a local ICT-manager, was, that

> *decision makers gave orders to the ICT department to develop the new application. The technical people then went and spoke to some of the employees on the shop floors who were supposed to use the application, but they didn't keep in touch during the development process.*

A GPS instructor:

> *Workflow management calls for a change in attitude. For instance: during a pilot we discovered that a lot of people want to be able to actually – physically – see how high the piles of dossiers are on their desk. That way they know whether they have a backlog and if so, how big.*

This resulted in a GPS pilot that had several technical flaws and design flaws[7]. The needs of the people on the shop floor, so it seemed, had not been taken into account (Oskamp and Lodder, 2006, p 4). Nonetheless, according to others, there has been a great deal of support during the development of this system. For the Council for the Judiciary the introduction of GPS in the district courts is an established policy aim, even although this was accepted only under pressure of the minister of justice, Hirsch Ballin.

For the police, working with GPS therefore means doing extra work, as they have their own information systems. As a consequence, police reports are sent to the Public Prosecutors Offices by ordinary post, and are scanned by the Public Prosecutors Office and transformed into pdfs. However, some police regions are willing to send files electronically. A CIP police manager:

> *It is in the DNA of every criminal investigator: we don't share our information, unless we get face to face with the other party first, we have to be able to look them in the eye. .... We just want to know if we have arrested the guy who did the crime. I don't care about his name at all, as long as we have the right guy! Our priority is to solve more cases and to have better criminal investigations. But the policy makers want this ID process. They want to fight identity fraud, that's their pitfall.*

In 2006 implementation pilots were conducted with GPS for routine cases. For this, cooperation was established with the Amsterdam police and the Brabant-North police regions (a police region functions as an agency under responsibility of the ministry for the interior), and with the district courts of Amsterdam and Den Bosch. The outcomes of the pilots were mixed. On the one hand there was an integrated tool which was considered quite handy by judges and prosecutors. They could use it in the court room. But the system was unstable and computers had to be restarted quite often. Furthermore, within the Public Prosecutors Office and the courts, staff had great difficulties working with the interface. Actually, they started to print their screens, in order to make the paper workflow visible again! The GPS project -manager said:

> *The first version of GPS wasn't successful because nobody had thought about how to implement the system. They started thinking about end users at the end of the development process. From this experience was learned. They now invented the function of project leader implementation.*

From a managerial perspective, having arrived at this point, the situation became precarious. We spoke with quite a number of persons on GPS in the second half of 2006. And at that time GPS was considered to be at risk, also by project management. There appeared to be several bugs in the software, and many end-users were not satisfied with the interface. The system so far was developed in a negotiation process

7 Personal communication with member of College PG's Van Brummen

with users of different organizations. Project management had to control the input from the different organizations, because unlimited demands would certainly lead to a failing project. The outcomes of the implementation pilots involved the risk that settled disputes on application functionalities would be reopened again. This would make the process unmanageable. Also under political pressure ("when are we going to see some results?"), the College of Procurators General decided to implement GPS in 2007 only in the Public Prosecutors Offices, and to abstain from convincing the police and the Justice Institution Service that they should also use the same system. However they still insisted on implementing GPS in the first instance courts – for which they had to seek the consent of the Council for the Judiciary. The Council did not accept GPS for the courts self-evidently but was more or less forced to accept it by the Minister of Justice. To date, the Council for the Judiciary has started tender proceedings for the development and implementation of new case flow management systems for administrative, civil and criminal court proceedings. We do not think this shows the Council's confidence in the longevity of GPS.

Development of GPS since 2007

At this time we take for granted that the first instance courts all are willing to implement GPS, now that the bugs and interface problems have been solved. The fact that the College of Procurators General has decided not to implement GPS in the Public Prosecutors Offices and the courts at once, is an indication that they want to keep implementation risks and possible subsequent political criticism manageable. A GPS project manager:

> *We are sure GPS will result in more efficiency somewhere down the chain. But we cannot predict where. The big question is: who gains the most by implementing GPS. Maybe the time it takes a Public Prosecutors Office clerk to enter a DUI case via GPS takes more time, but maybe in that same case the judge can save time. We just don't know. [..] It's impossible to get every link in the chain to gain a profit from GPS. But for the chain as a whole it will be more efficient and better quality.*

One year ago the chief procurator general announced his success on an international forum. He told his audience that GPS is not only an efficiency tool but also a quality tool, because it combines information services, functions as a collective memory for the Public Prosecutions service, and tremendously enhances accuracy of the data (Brouwer, 2008; Van Brummen 2009).

GPS does automate communications with data sources of different systems. It automatically controls personal data of suspects with the data of the Municipal Population Registry (GBA – gemeentelijke basisadministratie). It is also connected with the Person Reference Index (VIP) and with the Justice Documentation System. As a consequence, GPS is automatically informed when changes occur in the personal data of suspects in the municipal population registry, in the Justice Documentation

System or in the VIP. This will help all services in the criminal justice chain to work with the same and accurate data on the identity of a suspect.

To date, GPS is in the process of being 'rolled out' in the public prosecution offices in the districts of the first instance courts. This process is almost completed; it is to be finalized in the spring of 2010. This means that public prosecutions offices have been presenting their first cases paperless to the courts already. Because the courts have not yet implemented GPS in the criminal law sectors, the courts still use paper files.

Anyway, GPS so far has shown to be able to become successful in the public prosecutions office, probably because it remained restricted to that domain. Reducing organizational complexity in the implementation process appears to be a key factor for the partial success of GPS.

3. Governance, Strategies and Infrastructure for IT systems

The Public Prosecution Service actually functions organizationally as a relatively autonomous agency of the Ministry of Justice. In order to function properly, an intensive exchange of data is required with agencies and organizations of which some are part of the ministerial organization, like the Central Judicial Fines Collections Agency, Probation and aftercare, and the Justice Institutions Service. Others, like the police, are organized as autonomous agencies of the Ministry of the Interior. The judiciary is also organizationally instituted as an autonomous agency. Developing applications that may be of use to everybody in the network is challenging, to say the least, because it involves standardization of the ways in which data are stored and exchanged.

From a governance perspective, the Ministry of Justice is not so all powerful that it can have its way in dealings with for example the Police, the motoring authorities (vehicle registration numbers), or the taxation service. But when it comes to the four major players in this field: the Public Prosecutors Office, the Courts, the Judicial Institutions Service and the Central Fines Collection Agency, they can aim presumably more easily at a certain amount of standardization and central direction in development. Even so, experience shows it has been almost impossible to make services within the domain of the Ministry of Justice cooperate adequately on all in one ICT- applications, let alone with services outside that domain.

A civil servant at the Ministry of Justice said:

> *For us at the Directorate of Strategic Development in the Ministry of Justice, getting the police to join us means getting better ID protocols, and is more important to us than the GPS-project. I don't think there is enough support for a project as big as GPS. Therefore I think it's better to work on smaller, partial projects. But of course our frame of reference differs from that of the Public Prosecutors Office. For us, the most important project is to get the individual personal records organized in the VIP system. VIP registration has to be successful.*

Jan Grijpink told us:

Central direction is impossible. Computerization of the entire criminal justice chain is far too complicated. Every partner can contribute to the whole, but central management is just not possible.

An ICT project Manager at one of the Public Prosecutions Offices said:

We don't have a standardized registration system of person related data (persoonsgegevens). The Public Prosecutors Offices, police and prisons all use different systems. And considering the specific group we are targeting – criminals – that's very inconvenient. Usually people have a personal interest in being registered accurately, for instance, a patient in a hospital, or someone dependent on social benefit. But criminals don't want that. It's not in their interests at all. We cross referenced two systems, Havank, which is a police system containing – amongst other data – fingerprints, and VIP. We found a lot of mismatches. One criminal turned out to have 54 different aliases, and of course, just one set of fingerprints.

The different steps involved in renewal of registration and development of case management and management information systems have met with resistance on the part of local authorities, the courts and the public prosecutions offices alike, not to mention shop floor resistance. An indicator of success so far has been the reduction in the number of different ICT applications within the entire Justice organization from 650 to 250 in 10 years. This may also be read as something of a success for reducing local autonomy, as ICT applications also demand standardization of organization routines nationwide. Thus far, the history of ICT development in the Netherlands may also be considered to be a history of dealing with the tension between striving for centralization on the one hand, and respecting local organizational autonomy on the other. GPS is an example of the former, and the VIP and its piecemeal extensions are an example of the latter.

Summary

The quest for central control in the development of ICTs in the criminal justice chain may be considered to be a liability when it comes to achieving workable results. The autonomy of the different agencies in the criminal justice chain – including the police – has proven to be so strong that various attempts to develop and introduce 'all-in-one' solutions involving different agencies, like HBS, NIAS and GPS, have either failed (in the case of HBS), almost failed (NIAS) or have been restricted in scope to one, possibly two agencies, however advanced and sophisticated they may be from a technological point of view. Projects focusing on piecemeal engineering appear to be much less risky, as shown by the ePV project with the Person Reference Index (VIP) resulting in the development of the Justice Information Service.

4. Analysis

There appear to be two main categories of reasons why developing and implementing IT solutions for case flow management and data interchange in justice organizations are problematic.

Attitude towards ICT from the shop floor up to the management

One reason why lawyers are not very attracted to ICT is because of their unfamiliarity with the field and its potential. This leads to a general resistance to change and a conservative attitude towards the use of new technologies (Lodder and Oskamp, 2006, p. 4). This may be true with regard to some of the employees in the prosecution service, but we feel there is room for some differentiation here. Most institutions that employ lawyers have a hierarchical structure, based on seniority. It is a common experience that older people find it more difficult to adjust to new ICT developments. Because of the fact that in the judiciary most – if not all – decision makers are senior, the chances are that these people will resist ICT innovation because of their ignorance of its potential. Another important factor to bear in mind in this respect is the fact that most judges and prosecutors are supported by a group of younger staff-members. These staff-members are the ones that actually have to work with the new ICT applications on a daily basis. But they are not involved in most of the decision making with regard to new applications.

A first conclusion therefore is that this kind of top-down implementation appears to be very risky. This was especially true for the HBS project. But it has also been a problem for the NIAS and GPS projects. During the first GPS pilot, although input from the shop floor was collected before starting to build the application, the use made of this information was limited, because incorporating everything would have made the system too complicated. However, this decision was not communicated back to the end users, who therefore were rather disappointed when they got to work with the first GPS version.

Chain partners have their own priorities

An entirely different category of problems arises from the fact that different parties in the criminal justice chain have different goals and priorities. For instance: for the police it does not make a big difference whether they email or fax reports of charges to the Public Prosecutors Office, or whether they send it by ordinary post. But the Public Prosecutions Service has a lot to gain from electronic filing of police reports. Another example: the police are not really concerned about different aliases, as long as they have the right person. But for the Public Prosecutions Service and the prisons – and the policymakers, identity fraud is quite a big problem.

This is what Grijpink calls '*the issue of the dominant chain problem*'. It is necessary to identify which link in the chain is weakest. And all partners should realize they will benefit in the long run, when they work together to solve the dominant chain

problem. But this is very hard – if not impossible – to achieve. According to Grijpink, because of the extremely complicated structures of connections between different offices, departments and services, it is not possible to have one central office steering the whole process (Grijpink, 2005). Still, since 1985, when it dawned upon the Ministry of Justice that interconnectivity and efficient data exchange between the different parties in the chain would become more and more important, they have spent much time trying to make this possible.

Reference index based data interchange as a solution?

Policymakers have begun to realize that it is impossible to try and implement complex IT applications as a whole for the entire chain. Aspirations should not be too high. Indeed, ICT may help organizations in the criminal justice chain to improve performance and, in particular, administrative accuracy. But neither efficiency gains nor speedier throughput times are self evident advantages of ICTs in this particular context. At least not for all the partners involved in the chain.

This awareness has led to a new approach by the Directorate for Strategy Development of the Dutch Ministry of Justice. They are now concentrating on the VIP system. This should become a sort of decentralized set of different data warehouses (consisting of a variety of registries and databases), accessible to all other chain partners, regardless of the specific IT system they use in their own organization. The data entered during the working day are updated and checked on for accuracy overnight with use of intelligent agent software.

This is only possible if the applications are based on a common, open standard (XML). This has become the main purpose of the project-organizations ePV and Progris (*program for ICT in the criminal justice chain*). An interface will make sure that every party can deliver and access information from the VIP system. The downside is that maintenance of all these different subsystems will be more expensive than otherwise necessary. So efficiency-wise, the data will be more accurate, but it is not necessarily saving money on IT expenditure.

Summing Up

In this article we described the developments regarding ICTs in the Public Prosecutions Service and the criminal justice chain that were the most apparent to us. This means we did not present a full picture of applications and developments in the criminal justice domain. Too much is going on at once in the Courts, the Public Prosecutions Service and other justice agencies. For this reason, we had to give up on the hypothesis that ICT in the justice domain could be a centrally controlled and implemented set of systems and standards. This was, however, the basis of the policy of the College of Procurators General as recently as eight years ago when they started the development of GPS as the successor of COMPAS – the kind of policy that has generally been shared within the public sector in the Netherlands. The legacy of this policy is GPS.

It is a feature of ICT-management within the criminal justice chain that top management does not know about everything that is happening on the shop floor, and that different agencies within that domain pursue their own ICT policies. This makes electronic connectivity between agencies difficult. As a result the policymakers at the Dutch Ministry of Justice now take the diversity of applications in different agencies more or less for granted. Instead of trying to force down one big, new, complex ICT system, they are focusing on enabling data-interchange between different applications of different organizations by means of a person reference index and message brokers.

Regarding this Person Reference Index, at first the focus was only on personal data of persons being dealt with within the criminal justice chain. Since then, they have developed a focus on preventing identity fraud. A major tool for this is working with biometrics (fingerprints, iris scans, DNA-profiles, analysis of portrait photographs). The next step will be that research files concerning a person may be retrieved or even exchanged. This is the purpose of the Act on the determination of the identity of suspects and convicts that entered into force in the summer of 2009.

The idea is that the development of interchange of data and files does not need 'all-in-one' solutions, but can be developed by piecemeal engineering. In the meantime, since all these different applications for different databases require different passwords and authorizations, the management of authorizations for access and the prevention and identification of misuse of facilities poses a whole new challenge and will have to be monitored very carefully.

5. In Conclusion

One outcome of this case study is that the Dutch experience with HBS, NIAS and GPS confirms that justice organizations are so complex that solutions for computerization of services tend to fail. Their complexity makes the interaction between the organization and the system under development uncontrollable. Even though technically it would be possible to master the individual requirements for automating data and case flow in different types of procedure, the risk is that information provided to data analysts might not be accurate enough. There is also the risk that the demands on adaptation of a system to local circumstances and preferences might make the system technically too complex, whereas not giving in to local demands may result in refusal to cooperate with the implementation of the new software. This is a risk when it comes to the acceptance of new applications by juridical professionals in particular (HBS, GPS for the judiciary). Therefore, central control in the organization, development, control and accounting in such mega ICT-development processes is likely to be impracticable. However, incremental ICT developments which do not drastically affect organizational autonomy in the criminal justice chain are likely to be much more effective. This approach cuts out possibilities for effective central processes of steering, control and accounting. Therefore it is much less glamorous than successful all-in-one solutions might be. Anyway this shows that the second theory, stating that chances of success of the introduction of new computer technology are enhanced if the tasks to be dealt

with by the new system are simplified, is confirmed by this qualitative research. In the case of GPS by refraining from a justice chain wide solution, and by the technology of the Justice information Service, because it enables data interchange without the need of drastic reorganization of working processes. By paying attention to the risks of development and implementation of large information systems in justice organizations, policy makers can prevent to spend a lot of taxpayer's money in vain.

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