

# Envisioning e-Justice for Criminal Justice Chain in Finland

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**Abstract.** The purpose of this paper is to envision new ways of working in the justice sector and to present the best practices and lessons learned in current e-justice in Finland. In 2011, Finnish prosecutors, district and appellate court judges and other court staff were interviewed and engaged in a workshop to envision ICT-supported workflow for resolving criminal cases. The three-stage anticipation dialogue workshop envisioned new ways of working in 2015, the challenges in the 4-year time span preceding it, and finally the possibilities of advanced technology. Workshop participants were relatively cautious with their visions, which clearly indicated that advanced technology as such is no solution. They considered interlinked and well-structured electronic documents with online access for all parties as enablers for working e-justice. Working with electronic documents requires accessory displays, cabling and power outlets for laptops as well as wireless networks. Scheduling – a time-consuming secondary task – could be facilitated by shared electronic calendars with court room booking capabilities. Remote hearing and videoconferencing were anticipated to play a larger role in the future. Throughout the workshop, the importance of user-friendly information systems was emphasized. Even though the core task of practicing law was expected to remain the same, new technology requires a change in work practices. Adopting new ways of working can be challenging, and in addition to correctly-timed and well-targeted training, employees will also need support from their superiors.

**Keywords:** e-justice, criminal justice chain, case management systems, court room, work practice

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## 1. Introduction

Implementing an information and communications technology (ICT) system for the public sector is a challenging task. Gole and Shinsky (2013) recently listed factors leading to failure for 17 public sector ICT projects in Australia, the UK and the US; projects that have been suspended or that have exceeded the planned timetables by years and expenses by millions of dollars. Several of the projects concerned the judicial administration. While many of the common factors leading to failure include problems in administration, project management and selecting vendors, the failures are often due to not fully considering the needs of the end users. The complexity of the project may have been underestimated and the working environment or work context not thoroughly understood. Moreover, the end users have not been engaged in designing the required solution.

Failures in public sector ICT projects are not unknown to other countries in Europe either, and attempts have been made in trying to renew the ICT in the judicial sector. Although the overall amount of adoption of information technologies seems relatively high (European Commission for the Efficiency of Justice (CEPEJ), 2012), there is still a long way to full-scale e-justice (see e.g. Fabri and Contini, 2001; Velicogna, 2007).

The concept of e-justice can be interpreted in multiple ways. A broad definition of e-justice can cover ICT usage in the areas of crime prevention, administration of justice and law enforcement (Xanthoulis, 2010). Furthermore, e-justice for the administration of justice contains multiple sub-areas. These include usage of IT in general, electronic methods for communication (e.g., e-mail, videoconferencing), electronic case management systems, court room technology, and even offering citizens electronic services such as online access to case files. This paper focusses on e-justice in judicial administration to the extent it concerns prosecutors, judges and other court staff.

The difficulty of adopting e-justice has been encountered and reported in Italy (Contini and Cordella, 2007), the Netherlands (Henning and Ng, 2009; Langbroek and Tjaden, 2009) and France (Velicogna et al., 2011). These studies showed that the true difficulty does not arise from technical issues nor even legislation, but from the socio-technical and organizational aspects. Courts protect judicial independence rigorously, and this is reflected in the organizational culture of judges. Courts prefer to choose ICT systems themselves instead of

considering adopting a government-provided generic system. The old work practices, which have been established during the pre-ICT era, are hard to change, while adopting new work practices could be the key to collecting maximum benefits from ICT, or taking the provided ICT into use at all.

Public administration can be considered as a complex socio-technical system comprising human, social, organizational and technical factors. This kind of system is characterized, for example, by a multiplicity of elements and actors, heterogeneous perspectives, dynamic interactions between system elements and tight couplings between elements (see e.g. Carayon, 2006). The work context needs to be understood when designing a new system, and even if functional issues are resolved, the user interface will be the final link in determining whether users will accept and use the system. Organizational barriers come into play if a new system is to be used in several judicial agencies. All parties need to be motivated and equally involved in the planning – and in sharing the expenses – even if one party might be collecting most of the benefits.

Another line of e-justice development has emerged in the past few years in the form of courtroom technology, which is being tested and implemented in court rooms (Lederer, 2004; Wiggins, 2006). More specifically, there is research on evidence presentation techniques (Farrell et al., 2011; tablets: Tipping et al., 2012) and virtual environments (Bailenson et al., 2006), and also on considering the architectural and acoustic requirements in modern court rooms (Hryncewicz-Lamber, 2013).

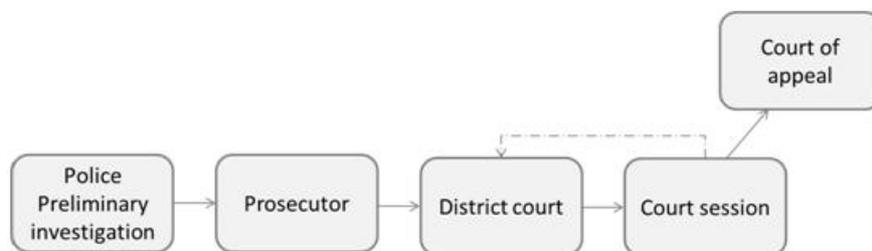
This research paper aims to envision e-justice at its best. As Velicogna et al. (2011) put it, ‘...the main problem has not been finding a technically possible solution, but “creating” a solution that was in line with the needs, the expectations and the requirements of the various parties. And that some of these expectations and the requirements were not even known to the actors themselves before the first attempts were made.’

### 1.1 Justice system in Finland

The Finnish legal system is based on Scandinavian and European tradition. The judicial system is quite compactly described by Kujanen and Sarvilinna (2001) and the Finnish justice website *oikeus.fi* (Finnish courts, 2014; Prosecutors, 2014). To summarize, the district courts handle both civil and criminal cases, whose decisions can be appealed in a court of appeal, and if permission is granted, the decisions of the court of appeal can be appealed in the Supreme Court. There are also administrative courts and special courts. There are 27 district courts, 5 courts of appeal and the Supreme Court. The prosecutor’s office is an independent part of the judicial administration. There are 11 local prosecution offices and a separate Office of the Prosecutor General.

Cases can be handled in two ways: in a court session where all parties are summoned or in chambers solely based on documents. The latter way also covers summary cases, such as simple undisputed debt-recovery cases, which form a large majority of the civil cases and can also be resolved by trained office clerks completely electronically.

**Criminal justice chain.** Criminal cases are processed in court sessions. Figure 1 shows the workflow in the criminal justice chain.



**Figure 1:** Criminal justice chain in Finland (unbroken arrows). The decision is made by the district court judge (dashed arrow).

Pre-trial investigation is done by the police. Prosecutors may communicate with the police already during the investigation, especially on demanding cases. After the preliminary investigation is complete, the case moves to the prosecutor’s office. The prosecutor considers whether to press charges, and if so, the case moves to the

district court, where it is processed further by the court staff. The case is processed in a court session, the main hearing. The court decision is pronounced orally immediately in the hearing, or pronounced later in writing. In district courts the decision can be made by one judge, with or without a composition of lay judges, or by three judges. After the judgment, the case can be appealed in a court of appeal. In courts of appeal, decisions are normally made by three members of the court (called Senior Justices or Justices). In important issues, seven or all members of the court of appeal may participate. Decisions in simple cases can be pronounced immediately at the end of the main hearing or else they are delivered in writing via the registry. (Finnish criminal procedure, 2014).

## **1.2 Information systems and electronic literature**

There are a number of information systems in use in Finnish courts and prosecutor's offices. For case management, the courts use two systems, Tuomas for civil cases and Sakari for criminal cases. The Sakari system is also used by prosecutors and it includes links to the systems the police use. Both systems have been in active use since the 1990s and were considered state-of-the-art in Europe (Kujanen and Sarvilinna, 2001; Fabri and Contini, 2001). Although the Tuomas system was originally designed for summary cases, it was incrementally updated to cover all types of civil cases. The Sakari system was developed in the latter part of the decade and was built to include more capabilities for handling case information instead of focusing on managing the cases. The Sakari system uses different diary numbers for prosecutors and courts. Both the Tuomas and Sakari systems are based on Lotus Notes, text processing is available, and OpenOffice Writer text documents and scanned PDF files can be attached.

Other information systems in use are different registries and personnel management systems. There is also a free online database Finlex for legislative and other judicial information (Finlex Data Bank, 2014). Finlex also covers case law databases with precedents from the Supreme Court.

**AIPA project.** There is a large-scale on-going project called AIPA (Aineistopankki, databank in English), which aims to produce an advanced information system for prosecutors and courts of all levels. The new system is intended to be a uniform, integrated system that enables electronic data exchange and cooperation with other authorities. It is to be built with strong links to Vitja, an information system project for the police. In addition to being an electronic databank that enables electronic data archiving, the AIPA system includes advanced functionalities for case management, thus replacing both the Tuomas and Sakari systems.

The AIPA project was initiated in 2010. The planning phase was aimed to be completed by the end of 2013, with the intention of being implemented within the following few years. The AIPA project is coordinated by representatives from both the prosecutor's office and district courts. It includes several subprojects focusing on, for example, user interfaces and change management. One of the project's main goals is to develop new ways of working for prosecutor's offices and courts.

## **1.3 Context and scope of the study**

The Finnish government has recently published a renewal program for the administration of justice (Advisory board for judicial relief, 2013). The program aims to shorten the duration of judicial proceedings – and therefore cut costs – and to improve the quality of judicial relief. Several of the measures listed in the program concern increasing the use of ICT and electronic transactions.

This research was done in collaboration with the nationwide workplace concepts by Senate Properties, a government-owned enterprise that leases premises to state agencies, and the government. The AIPA project partially overlaps with this research because it considers developing the work practices of prosecutor's offices and courts in addition to creating a new case management information system.

The scope of this paper is limited to the use of computers and other ICT tools among prosecutors, judges and their assistants, and members of the court of appeal. The fact that criminal cases also involve other parties (the police and pre-trial investigators, prison administration, writ servers, defendants and their counsel, witnesses, experts, etc.), who use ICT in their work, should, however, not be neglected. Furthermore, technologies that are used in customer service were not treated in the paper.

## 2. Methods

Several qualitative methods were used to collect data: interviews, visits to the Helsinki district court and court of appeal, and a workshop employing the Anticipation Dialogue Method. The interviews aimed to acquaint the researchers with the Finnish judicial administration agencies. More specifically, the interviews and visits helped to understand the Finnish court process, including the task descriptions of the personnel and the technology used within and outside court rooms. The workshop had a narrower scope, and was targeted at the work practices and technologies of the near future.

### 2.1 Data collection

Two researchers interviewed 12 people from judicial administration agencies. Both end users (prosecution, judges, and office staff) and administrative persons were included. The interviews were semi-structured. The topics covered interviewees' work practices, ICT solutions currently in use, and users' satisfaction with them. Two of the interview sessions (two and five interviewees) were held at the Helsinki courts, and were more informal in nature and held while visiting the court rooms. One interviewee was from the ICT administration and was also asked about prior, current, and planned ICT projects and about purchasing new devices and applications. One interview with a judge was targeted at understanding the criminal case workflow for the purpose of planning the workshop. The interviews were audio-recorded and later transcribed for the most part.

The workshop was titled 'ICT usage in the criminal justice chain'. Nine participants came from three different counties and represented different posts: prosecutors, district and appellate court judges, and assistive staff. None of the participants had any specific ICT experience besides their everyday work, but approximately half of them had taken part or were familiar with a prior ICT project or the on-going AIPA project. Five of them participated via videoconferencing system and the other four sat in the same room with two researchers and a passive observer.

The workshop employed the Anticipation Design Dialogue method (Laarni and Aaltonen, 2013) which derives, for example, from anticipation dialog (Arnkil, 2004) and future workshop (Jungk and Müllert, 1987) methods. The workshop consisted of three stages (see Table 1).

**Table 1:** The three phases of the workshop employing the Anticipation Design Dialogue method on the criminal case workflow.

Workshop stage	Topic	Issues discussed
Stage 1	It's the year 2015.	Processing criminal cases is smooth. What does it mean for your own work?
Stage 2	Recall from the year 2015, ...	What were the main challenges in 2011? What has changed during the past four years?
Stage 3	New ways of working, new equipment	Envisioning uses for new technology: state-of-the-art court room technology, electronic literature, IT-supported decision-making etc.

In Stage 1, the participants were urged to project into the year 2015, when new case management systems (i.e. AIPA) were assumed to be in use. The task was to envision work practices, court sessions and related practical arrangements that would enable smooth processes. The second stage mapped the steps that need to be taken in order to achieve the vision. In Stage 3, the participants were shown an inspiring and fast-paced slide show with images and videos of today's and tomorrow's technology, including material from actual court rooms around the world. The final task was to ponder the benefits and probability of using such technology in the future.

At each stage, the participants took turns in explaining their views, while the researchers controlled the time. Everyone was given a chance to add a brief remark before the following stage.

### **3. Results**

This section describes how the criminal justice chain works currently, what kinds of tools and work practices are used in judicial administration, and how the workshop participants envisioned processing criminal cases in the future.

#### **3.1 Current criminal case workflow**

**Prosecutor.** The prosecutor works mainly independently. During the pre-trial investigation prosecutors can cooperate with the investigators (i.e. the police). They can attend meetings or communicate over the phone or by e-mail. The office staff helps with preparing and finalizing the complaint. They also assist the prosecutor in keeping up with deadlines and do plenty of preparatory work related to correcting erroneous information such as checking addresses.

The pre-trial investigation material is delivered to the prosecutor's office where the cases are manually distributed to selected prosecutors. Most material is in paper format and the prosecutors find it time-consuming to search for main issues. Data in larger financial crime cases can be partially processed electronically, for example, some data can be supplied on CDs, or prosecutors can use PDF Pro to link electronic cases.

All criminal cases are handled in the Sakari system. The prosecutors' Sakari system is used for all prosecution documents, such as complaints, decisions not to prosecute, and limitations on pre-trial investigation. The documents have a structured format. The documents are written in the Sakari system or are created on Lotus Notes (typing program) document bases, which then relay information to the Sakari system. OpenOffice documents or other document formats are not compatible with the Sakari system.

**Courts.** The district court judges work in pairs with their assistants. The assistants (kärjäsihteeri, literally translated as district court secretary) work on routine errands but in fact their role is closer to that of a paralegal. The assistants have varying educational backgrounds; many of them are secretaries by education, but the assistants do not have and are not required to have any prior legal education. The paralegal role of the assistants is evident when resolving summary cases, which they can process independently and completely in electronic format.

All other cases besides the electronic summary cases are distributed to the judges – in fact to the assistants' desks – by the court bureau; the judges cannot choose cases themselves. The pre-trial investigation records arrive at the court bureau, where a diary number is set (written in ink on the case) to be used in the court Sakari system. The bureau also checks the system for other cases concerning the same defendant. The case is literally a paper or cardboard case, or a folder, depending on the amount of material. The judge's assistant prints the complaint and the complaint information document from the Sakari system. Electronic law literature is available, but due to archiving requirements, paper copies are made of all documents.

While the case is being processed within the district court, the case (paper file) moves back and forth between the judges' and assistants' desks. Each judge-assistant pair forms their own work practices. A common practice is that while the case is on the judge's desk, the judge processes the contents of the case, and when they need assistance (e.g. in settling dates for court sessions with parties), they pass it back to their assistant. When the assistants have the case, they handle post-traffic related to the case and communicate with parties over the phone or by e-mail. E-mail is an official contact channel comparable with fax-mediated documents. Some e-mails are printed because printed documents facilitate task management.

In courts of appeal, the members' main tasks are not essentially different from those of district courts, with the exception that their clerical staff lack the paralegal role the assistants have in district courts. There are, however, legally trained referendaries, who present cases to the members for the preparation and main hearing of the case.

**Court session.** District court main hearings have a minimum of three parties: the judge and judge's assistant, the prosecutor, and the defendant with counsel. In district courts, the judge's assistant uses a computer for

typing court records. Other parties use mainly paper and pen for taking notes, although personal laptops can be used. Some court rooms have a wireless network, but this is rarely used for accessing databases.

All court rooms have statutory audio-recording equipment for recording testimonies. Telephone hearing, such as of experts or witnesses, is possible via a speaker phone or a landline telephone with external speakers. Legislation allows video hearing in many cases, with the exception of hearing defendants in criminal cases (Mannerhovi, 2007).

In courts of appeal, main hearings are similar to those in district courts. Depending on the geographical area and especially outside the Helsinki metropolitan area, the members may be required to travel to other towns for the main hearings. Travel is also required of prosecutors.

Court sessions are typically booked by court assistants. Settling a suitable time for all parties is very time-consuming and can take many weeks. It also involves booking a court room for an estimated duration, and possibly booking separate equipment for audio-visual (AV) presentation of case material. Rebooking might be needed if there are changes to parties' schedules or if the defendant does not appear in the court session. Electronic calendars are available but not very widely used, and therefore communication is mainly over the phone or by e-mail.

Court rooms can be booked in various ways. Smaller districts use paper calendars but more sophisticated booking systems exist. For example, the Helsinki district court uses a browser-based information system for booking court rooms. The system is accessible through the court intranet, but is separate from personal electronic calendars. The booking system lists the dates and court rooms that are already booked. Items such as an AV cart (a mobile cart with equipment for presenting audio-visual material, e.g. images, video) or the need for guards can be also booked.

Typical court session preparations proceed as follows (case example from Helsinki district court). The judge's assistant arrives in the court room about quarter of an hour before the session is scheduled to start. The audio recording devices are turned on. The desktop computer is started and the Sakari (or Tuomas in civil cases) system is turned on. The audio-recording devices are also controlled by a computer program. The assistant also needs to open OpenOffice Writer or Sakari-Notes (a typing program based on Lotus Notes), depending on the location of the court records. The assistant handles the above-mentioned systems during the court session and types court records. Computer helpdesk service is available if there is a problem with the AV cart.

There are no other desktop computers in the court rooms besides the one the judge's assistant uses for the court records. Most often, the judges take notes using paper and pen – as part of the preparations, the judge can have prepared and printed a partially prefilled document ('manuscript') for the main hearing – and type them later in their offices. There are judges who use their own personal laptop computers for taking notes, but they represent a minority, and are mostly among the younger judges.

The prosecutors and defendant's counsel can use laptops. Power outlets are available, although extension cables may be needed. For presenting evidence, the laptops can be connected to the AV cart, or parties can use an evidence camera with a projector. However, the case material is mostly on paper, and in larger cases it is necessary to shuffle through several paper folders to view the necessary documents. Internet access is not available by default although individuals (mainly the defendant's counsel or audience) may use 3G or GPRS connections.

It is mandatory to use the Sakari (or Tuomas) system for court diaries, including case management records such as information on parties, dates, and status of the case including a code for the judgment. Judges can use Sakari-Notes themselves, although there are judges who have refused to use it due to usability issues, and have delegated the task to their assistants. The actual judgment is typed using OpenOffice Writer.

### **3.2 Paper and secondary tasks dominate current work practices**

Case material provided in electronic format is currently printed. Part of the reason for printing is based on legislation, which requires one archived paper copy of each document. Printed documents also have other benefits. Paper is a familiar medium to everyone, it feels concrete, and the matt finish and good contrast are

comfortable for reading. Writing or erasing notes and resuming work after interruptions is easy. In some district courts, paper is also used for organizing tasks. The case file has a physical role in determining the status of the case between judges and assistants. In addition, assistants may use printed copies for sorting e-mails that require attention later. Paper is used as a medium to avoid the chaos of electronic documents, which tend to get forgotten or lost, or buried under excess electronic information flow and long file paths; this is an important point that should be considered carefully when designing information systems for electronic documents. In addition, paper documents do not need secure – and possibly lagging – online access to information databases.

The disadvantages of paper documents are evident when the case file size increases. On the whole, it is time-consuming to search for a certain item in a large case file, such as a witness statement, and even more time is wasted when this process is repeated by all parties in all stages during the criminal case workflow. Moreover, travelling parties, such as the prosecutors and members of court of appeal, need to carry the case material to the court house, which is often located in another town and may require long-distance travel.

Another time-consuming task is related to scheduling. The judge's assistant schedules and re-schedules parties and court rooms. Re-scheduling a court session by phone or e-mail causes delays of days, or even weeks. Electronic calendars are available, but their use is not very popular, due to usability and organizational factors. Besides the parties involved in the case, witnesses, experts, and interpreters may be needed during the session, and their availability and travel time and expenses must be considered. Prosecutors also face uncertainty in whether the scheduled (or re-scheduled) court room includes a certain evidence presentation device, and may have to prepare alternative means to present data beforehand.

Although the interviewees and workshop participants considered the available desktop computers adequate for their core tasks, nearly everyone had usability issues with the word processing and case management systems. OpenOffice Writer, which was the officially supported word processing software in most judicial agencies, was found difficult to use when it came to adjusting page margins and other page layout settings. The need to adjust the settings was a typical task especially when a file created in Microsoft Office Word was imported into Writer. In district courts, the judges and their assistants might even be struggling together with the settings for a considerable amount of time.

The case management systems Sakari and Tuomas were also found to be rigid. The text processing capabilities of the systems were considered unsatisfactory, and the information systems were slow to respond. The assistants reported that saving a court records document in the Sakari system during a court session might cause a long delay. While waiting for the system to become responsive again, the session could have already proceeded. Furthermore, the few employees using portable computers had had problems accessing the information systems remotely. Working time was thus allocated to secondary computer management tasks instead of the case itself.

### **3.3 Vision of processing a criminal case in 2015**

It was envisioned that in 2015, criminal cases would be processed smoothly and swiftly from pre-trial investigation to verdict.

**Prosecutor.** Pre-trial investigation material is electronically transmitted from the police information system to the prosecutor's office; the data format is structured and concise. Contact information of persons involved is up-to-date both in population registers and in the police system. The prosecutors' task load is considered when cases are distributed to individual prosecutors using automated lists.

Clear cases can be forwarded with a mouse click and an accelerated process enables resolving cases in 1-3 days. In demanding cases, the police and the prosecution co-operate in preparing the pre-trial investigation material into a plaint. All material is in an electronic databank allowing swift browsing and easy access between linked documents.

**Courts.** All case material arrives at the district court in electronic format, with the plaintiff's prayers and scanned or photographed evidence enclosed. The material is automatically forwarded to a selected paralegal assistant's computer. If a prosecutor sends multiple plaints concerning one defendant, assistants can transfer

them to document templates with ease and without manual intervention. The assistant sends summons, writs, and notices electronically via e-mail, electronic letters (the Netposti service available in Finland) or other equivalent secure media, for example using an electronic client identifier for citizens.

The electronic documents have a clear structure and interactive links. The judges have a sufficient number of displays, which enables work on several e-documents and the examination of electronic law simultaneously. Instead of summoning parties to a court room, preparation for trial can be done orally in an office room using videoconference systems. In demanding cases, preparation for trial is done in writing. Work is mostly done within offices and court rooms.

**Court session.** All parties use electronic calendars. The assistants' scheduling task is facilitated by offering an overlapping view of suitable time-slots. Booking and rebooking court rooms and mobile evidence presentation equipment are integrated in the calendars.

Court room technology supports working with electronic material. A wireless network is available to all parties. An electronic databank is accessible in the court room, thus making paper files obsolete. Personal working copies of the electronic documents can be supplemented with notes.

Desks are equipped with accessory displays, necessary cabling, and power outlets for laptops. Displays have an important role in examining evidence and complaints. Remote hearing is done via video (instead of telephone), which also enables mediation of body language. In addition, the videoconferencing system can be used for remote interpreting, mediating experts' reports or even prosecutors' addresses.

### **3.4 Interlinked and well-structured electronic documents with online access, to enable smooth workflow**

The envisioning process relied largely on the fact that the AIPA system was estimated to be implemented in 2015, which was the target year in the first stage of the workshop. Even though the renewal of the justice chain information system is considered important, the expectations for the AIPA system were cautious, since information system reforms, especially those that cross agencies' boundaries have rarely succeeded as planned.

The AIPA system (or other equivalent information or case management system) was seen as the most important enabler for new work practices. It would combine information from population registers and systems the police use, and the same system would cover the whole criminal justice chain within the judicial agencies. The amount of manual work – especially when a case crosses the boundary between two agencies – would be greatly reduced. Prosecutors emphasized the importance of well-structured documents, which could even have 'smart' attributes.

Using the AIPA system efficiently requires working online and remote access to databases. The tools mentioned in the workshop were portable computers, meaning laptops for prosecutors and judges, and wireless networks. The assistants of district and appellate courts did not see any added value in laptops, but thought they could benefit from tablet computers, which would be easy to carry around and to use side by side with desktop computers.

Smoother workflow in the criminal justice chain could also be facilitated by more extensive use of electronic calendars and videoconferencing systems in the court rooms. The existing e-calendars are not used by all agencies' employees and therefore they cannot be solely used for booking court sessions among parties. The defendant's counsel is obviously outside the agencies' network and appointments have to be scheduled manually. Because court room booking systems are currently separate from personal e-calendars, the judges' assistants saw it as extra work to use dual calendars. Moreover, the personal e-calendars could only be used from the assistants' personal desktop computers, and therefore their use was often skipped.

The use of videoconferencing systems in court sessions aroused debate. There was consensus that experts could be heard by phone or video, and that preparations for trial could be done using shared electronic documents and video-mediated meetings of the parties. District court judges felt strongly that evaluation of defendants' statements or interaction is impossible via video without impacting the main hearing. Moreover,

current legislation guarantees the defendant the right to be heard in person. Prosecutors and members of court of appeal, however, saw it possible for themselves to be virtually present in the court room via video, lessening the need for travel. Videoconferencing technology has already evolved considerably over the past few years, and if or when the legislation is changed to allow for more freedom, the technology will have had time to overcome issues related to video quality and transmission delays.

#### **4. Discussion**

Although participants in the workshop were urged to project into the future, their visions on new work practices and ICT tools were quite modest. The purpose of the first and second stages of the workshop, which concentrated on the 4-year time span from 2011 to 2015, was to get a realistic view of a smooth workflow in the criminal justice chain. What was less expected was that even the third phase, with an unlimited time span, elicited realistic and quite cautious visions on uses for new technology. For example, the introduced possibilities for IT-supported decision-making or high-tech court room technology were not rejected outright, but neither were they discussed further by the participants. The participants were all conscious of both the costs of new equipment and the tight public-sector economic situation. It is a common notion that the public sector is quite conservative in adopting new technology, and employees are to manage with systems that are slightly outdated. Moreover, the current legislation seemed to constrain the participants' notions and limit the flight of their imagination.

The results may show some bias towards the work practices in southern Finland, where travel distances are considerably shorter than in sparsely populated areas. Considering the independence of the judiciary and the high level of autonomy each court and prosecutor's office exhibits, however, the work practices of the participants in the workshop were not significantly different on the level at which this research project examined them.

##### **4.1 Towards new ways of working with advanced information systems**

In a few years' time, the core of practicing law is unlikely to change. Pre-trial investigations will still be performed, prosecutors will prepare complaints, and judges will make decisions. As information systems become more automated, the systems will eventually replace some of the work the assistants and other administrative staff currently do. The assistants, who participated in the workshop, believed their professional role was about to shift toward assisting with and operating the ICT, such as new court room technology. It is a probable scenario, especially in the near future, because prosecutors and judges of older generations have only moderate computer skills and finding the time for ICT training is challenging.

Despite the unaltered core of judicial work, the ways of working can, however, go through massive changes with the introduction of the AIPA information system, which is, at the time of writing in the planning phase and expected to be incrementally implemented starting in 2018. The magnitude of change depends largely on how well the AIPA system can enable working with electronic documents.

AIPA is very ambitious, as it attempts to cover several parts of the criminal justice chain. In the Netherlands, similar large-scale approaches failed, but incremental ICT developments, which did not require radical reorganization of work practices, have been more successful (Langbroek and Tjaden, 2009). In Finland, the police will not be a part of the AIPA system – although documents are to be electronically transferred between AIPA and Vitja – and the chances of succeeding are greater, considering the fact that the Sakari system is already partially shared between the prosecution and the courts.

There are multiple obstacles in the way of new work practices, even if the information system is evaluated to be good as such. In addition to successful implementation, a system needs acceptance on both the individual and the organizational level.

Individuals see a new system through the user interface, which is naturally expected to be user-friendly. Any user interface can, however, be learnt and tolerated if the contents of the system compensate for a lack of usability. Currently, each court or office has evolved its own preferences on how cases are processed – partially due to the independence of the judiciary – and therefore, their ways of constructing documents differ. Thus, individual users are likely to experience discomfort in adapting to new electronic documents whose structure is unfamiliar, or, considering deeply rooted individual work practices, even 'wrong'.

The role of the organization in achieving user acceptance is important and manifold. Firstly, the organization needs to provide the users with adequate tools. To obviate the need to print documents and to utilize electronic documents effectively, anywhere and anytime, the users need portable computers, a sufficient number of displays to work on several documents simultaneously, and uninterrupted access to information systems online. Secondly, considerable training is needed before the new system can be used efficiently. The threshold for contacting user support should be especially low in the transition phase. In addition, user acceptance is likely to be better if users, or at least some of them, have been given a chance to participate in the design of the system, and the system has been piloted and iteratively improved to suit the target agencies. Thirdly, all actors in the criminal justice chain should have corresponding means to employ the information systems. And fourthly, the chiefs of courts and prosecutor's offices need to encourage their staff to tap the possibilities of the new systems and to prevent them from reverting to their old routines. To give an example of the last two points, the court sessions will last for as long as it takes for the slowest party to find a certain document in the case file.

Many of the above-mentioned issues have already been addressed by others, and we should learn from them. Legal matters matter (Henning and Ng, 2009), but merely removing legal obstacles from switching to electronic systems and paperless offices is not enough (Velicogna, 2007). The users are not motivated by off-the-shelf, uncustomizable applications (Velicogna, 2007), or applications that only replicate old documents in electronic format (Velicogna et al., 2011). Motivation could be spurred on by active discussion and agreements on new ways of working among users (Velicogna et al., 2011). In addition, standardization of information between judicial agencies seems to be possible although negotiation is needed (Langbroek and Tjaden, 2009). Therefore, communication with representatives from all agencies as well as the end users should go on before and after an ICT system is implemented, to ensure that problems and system updates are properly handled. This can maintain public support and keep users committed (Langbroek and Tjaden, 2009).

New work practices entail other organizational aspects, as well. New ways of managing the working time and working place should be considered, in conjunction with the introduction of flexible information systems, which no longer require the employees to sit in stationary physical offices. There is a changeover in the Finnish judicial agencies from traditional offices to more flexible multifunctional work places, and new ICT and information systems are the means to enable the change.

## **4.2 Conclusion**

The interviewees and workshop participants in this study had a common goal: to be able to concentrate on the core work. The era of digital systems seems to add to the workload instead of alleviating it. The current information systems serve their original purpose of storing court records, but are not compatible with efficient word processing software. At the same time, information flow has increased, but a lack of powerful search engines in the systems produces extra work. Travel, whether it is a prosecutor travelling to a court house located in a distant town or an interpreter being flown across the world, is time-consuming. Added to that, the parties' schedules are tight, and manually finding suitable times for all parties is slow. These tasks are not relevant to practicing the law and processing crime cases. New ways of working and user-friendly information systems enable a positive change, allowing the parties to better focus on their core task.

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