

Preparing Knowledge Management for Law Practice

Martin Apistola Anja Oskamp
Computer/Law Institute
Vrije Universiteit Amsterdam
The Netherlands
 {m.apistola, a.oskamp}@rechten.vu.nl

Abstract. Law practice is paying more and more attention to the deployment of knowledge management (KM). However, the deployment of knowledge management is often based on an ad hoc decision. We claim that the application of KM in law practice needs a good preparation, which is important, but often no part of KM methods. There is still no specific KM method for law practice and most methods approach knowledge management only as a support of the entire organisation. Such an approach of knowledge management is in our view too limited. Knowledge management for an entire organisation may for instance not be fully appropriate to support management of specific legal tasks using specific knowledge. For the development of a KM method for law practice, AI and Law research should be useful.

1 Introduction¹

Law practice is paying more and more attention to the deployment of knowledge management (KM).² A cause of the increasingly popularity is the use of information technology (IT), which makes more and more knowledge, information and data available [25]. Knowledge is even being considered as the most important asset of legal organisations [12], [18]. When knowledge is so important, it should be handled with care. This should also apply to the methods and tools (e.g. knowledge management and IT) which support working with knowledge. But in law practice not much use is made of methods and techniques to support knowledge management nor of IT support [7], [23], [24]. A reason for this may be that there still is no method for knowledge management available for law practice. Risks of not using a method, and thus making decisions on an ad hoc basis, are for example that users do not want to use (new) information technologies and knowledge is not shared in the right way

¹This paper is based on the first ideas of a PhD. research which started March this year. This paper is meant to explore some of these ideas and to start a discussion on how KM is, or should be, developed and deployed for law practice and how AI and Law research can contribute. Such a discussion could contribute to the way (future research on) KM for law practice is developed and deployed.

²Some publications on knowledge management: [35], [9], [20], [6]. We also see the creation of new functions like knowledge manager and knowledge management departments [1].

across the organisation because employees are not stimulated to do this. A solution we suggest is to develop a method for knowledge management in law practice which supports the execution of legal tasks. We believe that Artificial Intelligence and Law (AI&Law) research, which is aimed at the application of legal knowledge and legal IT, can offer support to the development of such a method [25]. Examples of IT results from AI&Law research are legal databases and legal knowledge based systems [25]. AI&Law research also provided insight in legal reasoning.

In section two of this paper we describe views on how knowledge management is and could be approached. In section three we describe a way to prepare KM projects. Finally, in section four, we describe our conclusions and the future of our research. This is an explorative paper explaining our first ideas on KM and law practice.

2 Views on Knowledge Management

Knowledge management can be looked at from many different points of view. Points of view are for example KM for organisations and KM support for the execution of legal tasks. The most popular, and usually the only, point of view for KM is its deployment to support an entire organisation. See for example [35], [38], [9]. In this view, KM is mainly approached top-down. This approach is, in our view and at least in the legal domain, presently too complex and too limited. The complexity becomes clear when we look at current literature on KM in which vague and global notions of KM are used to describe knowledge management. To be able to apply KM to an entire organisation, we need to reduce the complexity of the organisation as a whole and look at smaller parts of the organisation. With smaller parts we mean divisions of organisations and employees performing legal tasks. We call this approach a bottom-up approach. With the help of KM for small parts of the organisation, it should become easier to develop a knowledge management method for the entire organisation and apply it. In our research and as part of this paper we take a look at KM for the execution of legal tasks. Characteristic for these tasks are that their fundament is found in law and for the deployment of such tasks a basic level of legal knowledge and experience is necessary [21]. Legal tasks are in general aimed at adapting the law to the needs of a specific case and the adaptation (the description) of the case itself to the result wished for [22], [14]. Different kinds of legal tasks exist. Giving legal advice or actually going to court are only two examples.

We see that organisations exist of different levels and groups. It is questionable whether each group can be supported by KM as applied to entire organisations. We believe that each group has, or needs own ways of KM because each group has its own specific characteristics.³

We classify four levels of groups for dealing with legal tasks: legal organisations, legal divisions and legal employees (e.g. legal experts). Legal organisations are groups of people who have chosen to strive after realising joint goals [35], [28]. For example dealing with one or more legal tasks in one or more legal domain. For this they need knowledge on the performance of legal tasks in legal domains and the support of the performance of these tasks by information technology (IT), techniques, methods and knowledge sources. Legal organisations can consist of one or more legal divisions. Legal divisions deal with one or more legal tasks in relation to one or more legal domains as dealt with by the legal organisation.

³Parts and characteristics of organisations are a.o. discussed in [19], [28].

Legal employees like legal experts deal with one or more legal tasks in relation to one or more legal domains. Legal experts can perform legal tasks for legal organisations or operate independent from legal organisations.

To illustrate the differences between groups which should be taken into account for KM, we briefly discuss some characteristics of an organisation as a whole and the organisation's operational level, as well as the implications of these characteristics for the application of knowledge management.

2.1 *Two Points of View*

Imagine the following situation. Bert got into a car accident and got physically hurt. The opposite party (Ernie) claimed that Bert caused the accident. Bert claims that Ernie is responsible and decides to seek legal advice. Bert read in the paper that a certain law firm deals with liability cases. When Bert goes to the law firm he wants to know whether he can sue Ernie for the damages. Bert arrives at the law firm. The receptionist asks him what she can do for him. Bert briefly explains the situation. The receptionist sends Bert to a division most capable to deal with the case. When Bert goes to that division, he has to explain his case more detailed so that it is possible for the division's secretary to direct Bert to a legal expert specialised in the field of liability law. Bert has to explain his situation as detailed as possible to the legal expert. The expert decides whether he is capable of giving legal advice to Bert. He makes this decision on basis of his knowledge, experience and the availability of knowledge sources, IT, techniques and methods. When the decision is made, the expert continues his task of giving legal advice.

We see that legal organisations like a law firm and the legal tasks performed within that organisation (e.g. giving legal advice) deal with different elements. Elements are structure, culture, techniques, methods, knowledge sources, tasks and information technology [28]. Such elements help to recognise a specific legal organisation. Although elements like these are important for the way KM is applied, we only take a brief look at the elements people, tasks and IT.⁴

The example shows that within legal organisations employees perform (legal) tasks. Receptionists and secretaries for example may do the first intake and provide administrative support and legal experts give legal advice. Different legal tasks can be assigned to the organisation as a whole or directly to a legal expert. We saw that Bert first came with a task assigned to the law firm as a whole. Later on this assignment was passed through to a legal expert. In other cases, Bert might have known a certain legal expert and could have gone to him straight away.

The employees within a legal organisation can be seen as sources of knowledge. They possess knowledge about the organisation as a whole (e.g. the receptionist) or about a specific legal domain (e.g. the legal expert). Other knowledge sources are paper sources and IT sources. The legal expert for example makes use of legal literature and legal databases. Each knowledge source has different characteristics and might be used for the performance of one or more (different) legal tasks. A legal expert may give advice, but may also go to court. For

⁴This is a limited view on the levels for KM approaches and characteristics of legal organisations. In a forthcoming paper we elaborate on these subjects.

both tasks he uses the same legal literature. With the help of IT, and especially legal decision support systems or expert systems, less experienced employees might perform the same tasks. Most lawyers in the law firm have a high level of knowledge and consequently will mainly use simple technologies like text editors or databases. While less experienced employees have little legal background and therefore are supported by 'high tech' technologies like legal knowledge systems.⁵

For an entire organisation it is important to know which knowledge sources are available within the organisation. Thus a legal task in first instance can be assigned to and performed by a certain knowledge source (e.g. a legal expert). In the example we saw that Bert explained his situation briefly to the receptionist. The receptionist was able to interpret Bert's case correctly and with her knowledge of the organisation as a whole was able to send Bert to the division most likely to deal with his case.

2.2 *Consequences for Knowledge Management*

From the example we can see that knowledge management should be approached in different ways because we have to deal with different people, tasks, knowledge, techniques and IT. We saw employees like the receptionist or the legal expert who both have the same task of giving advice. The difference in these tasks is that the receptionist gives advice which assigns Bert to the right legal division of the organisation and the legal expert actually gives specific (legal) advice. Both employees have different backgrounds and use a different kind of IT. The receptionist does not necessarily have a legal background while the legal expert is specialised in a legal domain. For the deployment of knowledge management it should be taken into account that receptionists should be provided with knowledge to assign tasks in first instance to the right division. Therefore they apply knowledge which is usually global. The legal expert on the other hand performs (complex) tasks like giving legal advice and consequently needs knowledge which is more complex and specific. KM should also take into account that the amount and kind of techniques used to execute tasks can be different. The receptionist uses non structured interview techniques while the legal expert uses for example structured interview techniques and decision tables. For legal tasks, (different) IT can be used in different ways. The receptionist might use a database to search for a specific division while the legal expert might use legal knowledge based systems and legal databases to give legal advice. When for instance it appears that an expert cannot make use of IT, the management of knowledge within the organisation should be able to give guidelines to the expert on where he can find relevant IT and how this IT should be used.

We saw that legal tasks and employees performing these tasks can be different. This is also true for legal organisations. Bert could also have approached a legal organisation which consists of legal volunteers with only a little legal background. These volunteers need a different kind of knowledge management. While law firms usually can afford to spend a lot of money on developing and applying knowledge management, voluntary organisations often do not have much money and need cheap means to perform their legal tasks. Moreover, the

⁵With the present state of automation the 'expertness' of 'high technologies' is still limited. They don't offer much support to highly trained professionals. More simple techniques, like databases provide the necessary information.

law firm has many legal experts and the voluntary organisation only has employees with little legal background. To perform the same legal task they need for example to be supported by cheap IT which can support them to act partly like the legal expert in the law firm.

Another difference between legal organisations is that some organisations act more open than others and are less afraid of competitors. This should also be taken into account when deploying KM. Knowledge which is freely available within one legal organisation is not necessarily freely available within the other legal organisation.

3 Preparing Knowledge Management

As we showed in section two, we should be aware of differences in the way KM could be deployed for an entire organisation or a smaller part of an organisation. Just one general approach of KM is not enough. On the basis of this idea we can make a first distinction between developing and applying KM. During development we decide whether knowledge management is really necessary. In this phase of availability of KM methods it seems wise not to interfere in either organisations or tasks when there are no problems performing the task. Most KM methods do not even look at the necessity of KM. They presuppose that KM is necessary and will start by applying the method. They often start by telling that the knowledge used in the organisation needs to be analysed. However they are vague about how and when this analysis has to take place and how to carry it out. This may be caused by the fact that it is too difficult to apply KM to an organisation as a whole (see section 2).

So first of all an agreement should be reached on if and how KM will be deployed and which groups and levels will be researched. This could result in a *project plan* based on the selection of a specific group and level. In this paper we maintain two points of view, namely that of an entire organisation and that of the employees performing legal tasks. In general the project plan contains amongst others starting points with conditions, the purpose of the project with results wished for, planning with milestones, project time, capacity and costs, project members involved and responsibilities. When we look at a KM project for the entire organisation, we see that not all of these points play a (similar) role as when deployed for a KM project for the support of a legal task.

Refraining from a project plan enhances the chance of failure of the project [2]. By knowing elements like the goal of the KM project, equipment to be used, planning and costs, agreement can be reached between the person giving the assignment and the person executing the assignment on whether to deploy the project or not. The project plan can also be reused in similar situations in the future.

In the next section we describe what a project plan for KM may look like for both the entire organisation and for the support of a legal task.

3.1 An Example of a Project Plan for KM

To illustrate a project plan for KM, we use the project plan as described in SDM [8] as guideline.⁶ This project plan is meant for system development projects but we think it could also be used for knowledge management projects. The project plan describes elements (e.g.

⁶Aspects of project planning and control are also described in [10].

goals of the project, costs, etc.) which at least should be agreed up on before starting the 'real' KM project. There is no particular order in which the project plan is developed. According to us some of the elements are relevant for both a KM project plan for the entire organisation and for a KM project for the support of a legal task. The different levels of these project plans may cause different views of the various elements.

Background

In this part of the plan a brief first introduction is given to the current situation of the organisation. Such an introduction is both relevant to a KM project for the support of a legal task as to a KM project for the entire organisation to know whether the same idea exists about the organisation and about problems. Problems occurring at the level where legal tasks are performed may influence the entire organisation and vice versa.

In case of the law firm we could see that the firm has just started and has legal experts in the area of liability law. A major problem within the firm is that these legal experts are often out of the office. It is important however that, when such a situation occurs, other employees (non legal experts) still can give advice to clients like Bert.

Goal of the lawfirm

The goals of the organisation are relevant to know as that they must be in line with the goals of KM solutions to be developed and applied. This is both relevant to a KM project for the support of a legal task and to a KM project for the entire organisation. When both seem to have very different thoughts about the goal of the organisation, it is questionable whether KM can be deployed in the right manner. The goal of the law firm could be to offer high quality legal support for reasonable prices in such a way that the firm can establish a strong position in the market.

Goals of the KM project

The goals of a KM project for the entire organisation and for the support of a legal task should be in line with the goals of the organisation. To increase the success of the KM project, both the organisation and of the project group should have the same understanding of the goals of the KM project. The goal of the KM project is for example to find a KM solution for the way legal knowledge is managed within the law firm.

Surroundings of the project

There should be agreement on the scale the KM project aims for. This is both relevant to a KM project for the support of a legal task and to a KM project for the entire organisation. Researching large and complex area's may for example need much effort and ask for many legal experts and may therefore cost much more than a smaller area to be researched. For a KM project for the entire organisation it may be relevant to have a global understanding of who was involved in a specific KM project for the support of a legal task and how much such a project costs. Such knowledge may be useful for similar future projects. The KM solution could be developed for the execution of one legal expert task within the firm. Later on a KM solution will be developed for the entire firm.

Starting points / conditions

Organisations can have several demands and restrictions related to their problems. To increase the success of the KM project, the results should meet these demands. When looking at a KM project for the entire organisation, guidelines for demands may exist while a KM project for the support of a legal task asks for different, detailed demands. The most relevant starting point of a KM project for the entire organisation is for example that knowledge of legal experts is kept within the firm and can only be used by non-legal experts within the firm to give legal advice. Conditions are for example that the law firm in The Hague is used as a 'pilot', and KM solutions are applicable to other area's of the firm.

Risks

Every project has risks. Before the project is started, these risks should be identified and analysed. Risks should be weighed and solutions need to be found for risks [15]. The relevance of a risk may be different for a KM project for the entire organisation and for a KM project for the support of a legal task. Risks of a KM project for the support of a legal task are important to the entire organisation in that risks of such a KM project may influence the entire organisation. A great risk for example is insufficient availability and commitment of management, legal experts and supporting staff.

Project organisation

Before the projects starts it is necessary to know who will be involved. This is necessary because not everyone is qualified to perform (parts) of KM projects and it should be clear whom to turn to when problems occur. For a KM project for the entire organisation, global knowledge on who is involved may be relevant, while for a KM project for the support of a legal task, it is relevant to know specific details on the persons involved. The activities of the KM project for the support of a legal task are for example executed by a project group consisting of the following persons: Chris (knowledge engineer), Charlotte (legal expert), John (director of the law firm).

The knowledge engineer acts as an intermediary between parties and systems during the project [21]. The knowledge engineer has several tasks; helping the expert expressing his knowledge and way of working, point at mistakes if necessary, representing knowledge and make sure that the final result meets the demands of the end user(s) [21]. The knowledge engineer should therefore be well qualified. This means for example that he has at least basic knowledge of the domain, knowledge acquisition, representation and analysis techniques [3], [21]. But he should also have good social skills, like tact, diplomacy, patience and cooperation skills. See for example [5], [29]. Because the knowledge engineer will deal with (parts of) the legal domain, he needs to have at least a basic legal background. Someone without legal knowledge will have a lot of trouble identifying relevant legal knowledge. See for example [21], [37], [16]. Chris the knowledge engineer was asked for this project, because he is considered an expert within the field of knowledge engineering and has a basic legal background. Chris is also known to have good social skills. Chris will research the legal task because he thinks he might be able to understand the task and he has dealt with legal experts before, with success.

Methods and techniques

Before the KM project is started, it should be clear whether there are methods and techniques available which might be used during the project. When this is not the case, it should be agreed whether a specific method or technique will be developed, and conditions have to be formulated. For a KM project for the entire organisation, global knowledge on which methods and techniques are available may be relevant. For a KM project for the support of a legal task, detailed knowledge on the availability and use of methods and techniques may be more relevant.

For the development and use of methods and techniques equipped for law practice, elements stemming from the field of AI and law may be useful. This field has been occupied with the analysis and application of legal knowledge for decades. This resulted in the development of several (knowledge based) system development methods [37], [21], ontology techniques [30], [31], [33], argumentation and reasoning techniques [26], [17], [11], [14], [32]. It can be questioned though whether these methods and techniques, which are aimed at the development of legal knowledge (based) systems, are sufficient for the development and deployment of a KM method for the legal practice. Their focus is on (legal) knowledge, usually related to a small domain. We believe that we can benefit in a great deal from the AI&Law research which has been focussed on methods and techniques for working with (legal) knowledge. But data and information are also part of managing knowledge, and an important part. Methods and techniques dealing with data and information may differ from methods dealing with knowledge. Another point of attention is that most of AI&Law research may be too theoretical to be used for the support of practical knowledge management.⁷ That is, to actually support the execution of legal tasks. The differences between methods and techniques and the analysis of the parts that are suitable for KM, is part of our future research.

In this stage of research however, we found that it is difficult to give clear guidelines on which technique is best suitable in a certain situation [36]. The use of techniques depends a.o. on the task and the domain. In some (legal) domains statistical analyses are important while in other domains observations or interviews play an important role [34]. The following criteria may be useful [36]: When the technique is common in a certain legal domain and is used by the domain expert [5] this implies he has experience with this technique, and consequently it will be easier for him to transfer his knowledge. Another criterion is that it has to be clear what kind of knowledge the domain contains. One type of knowledge (e.g. procedural knowledge) may need another approach than another type of knowledge (e.g. declarative knowledge). Finally, it needs to be clear what kind of problems play a role for the domain expert. For several problems (e.g. diagnosis), specific techniques have been developed which can thus be used.

For example a specific law domain contains a lot of procedural knowledge. The knowledge has a hierarchical structure. The problem the expert has to deal with is that the law contains one major exemption which states that the law is in a certain situation not applicable. But in a typical session, this rare exception can be ignored temporarily by the expert. The expert is used to talk with clients in the form of an interview.

Based on this, Chris the knowledge engineer decides upon the techniques which he could

⁷This is certainly true for AI&Law research on legal argumentation, the development of legal knowledge based systems on the other hand proved to be more practical [27].

use best. The expert has experiences with interviewing and interviewing is a common technique in the domain. Chris decides to prepare an interview. Because the domain contains procedural knowledge and has a hierarchical structure, Chris thinks that he might use a classification network to structure the domain and task and use forward or backward reasoning techniques. By preparing more than one technique, Chris decreases chances on failure.

Equipment

To be able to perform the KM project, some major elements need to be present. First of all, knowledge sources are necessary. Secondly, IT may be necessary to process data and to create milestones. Knowledge sources are those sources in which the knowledge engineer can find knowledge. The amount, diversity and availability of sources can be big [25]. Knowledge sources can be divided in the human as a source of knowledge (e.g. experts or end-users), writings as a source of knowledge (e.g. AI&Law literature) and information technology (e.g. databases containing cases or legislation).⁸

As a preparation to the KM project, it should be clear which knowledge sources can be approached in what way. For a KM project for the entire organisation it is relevant to have global knowledge on the knowledge sources available within the organisation. For a KM project for the support of a legal task it is necessary to have detailed knowledge on the availability and use of knowledge sources.

Knowledge sources can be approached directly (knowledge engineer – human, knowledge engineer – writings and knowledge engineer – IT) and indirectly (knowledge engineer – IT – human and knowledge engineer – IT- IT). Each approach needs its own technique.

Chris for example obtains knowledge from the legal expert Charlotte by using interview techniques. Chris knows Charlotte deals with liability law. Knowledge on this domain can be found in various knowledge sources. A human knowledge source is the expert, Charlotte. Other human knowledge sources are other employees of the law firm or experts of other legal organisations who deal with the same task. Writings as a source of knowledge are various publications on liability law. Chris finds these publications in the local library. Nowadays, various other publications on liability law are also available as an IT source of knowledge and information in legal databases available through the internet and available on CD-ROM's. Chris knows this because of his experience and because his interviews with Charlotte who pointed out some of these.

To access the knowledge information sources and to process the knowledge and information obtained, IT can be useful. Popular forms of IT are text editors and databases. For the KM project for the support of use will be made for example of a text editor to type the results (e.g. the results of an interview or decision tables), internet and CD-ROM's for searching legal databases, an e-mail application to send and receive information and a drawing application for the construction of networks.

Milestones

Milestones are products resulting during the KM project. These milestones are for example reports on the current situation or evaluation reports or models. Milestones are necessary for the continuation of the project. This is relevant to both the KM project for the entire organisation as to the KM project for the support of a legal task. The type of milestone may be

⁸Many examples of (legal) knowledge sources exist [21], [37], [34], [13].

different though. One could imagine that evaluation reports are of more importance to a KM project for the entire organisation than a specific decision table used for the support of a legal task.

When a milestone does not meet the demands as made clear at the start of the project, a decision can be made to stop the entire project or to take a step back to improve the delivered milestone(s). During the project the following milestones could be produced; a report of the current situation and a model of the future KM architecture.

Activities

In this part of the KM project plan the main activities of the KM project are described and planned. This means that a planning is given in which it becomes clear which activity leads to a certain milestone within a certain period of time. Planning and descriptions of activities are both relevant to the KM project for the entire organisation and to the KM project for the support of a legal task. The KM project for the entire organisation may use a global planning and description of activities in opposite to the KM project for the support of a legal task, which needs a detailed planning and description. For planning several (standard) techniques can be used. Examples of activities which will be executed after there has been an agreement on this project plan are 'describing and analysing the current situation and current use of IT' and 'developing KM architecture'.

Reports

In this part of the KM project plan it becomes clear when reports on the forthcoming of the KM project are discussed and by whom.⁹ This is may be especially important to the KM project for the support of a legal task and more than to the KM project for the entire organisation.

Educational plan

Members of the project group may need to know more about for example task analysis and knowledge management.

Costs and means

In this part of the plan it becomes clear how much time will be spend on the project by members of the project group. It should clarify if the entire project can be financed. This is both important to the KM project for the entire organisation and the KM project for the support of a legal task. For the KM project for the entire organisation it is important to have global knowledge on how much a certain KM project costs, while for the KM project for the support of a legal task it clarifies precisely what each of the parties will earn by their involvement in the project.

By filling in of one or more of these elements a decision can be made whether to proceed with the KM project. To structure the filling in of the plan, knowledge management might also be helpful.

⁹To gain insight in planning and costs, several techniques are available. See for example [10].

4 Conclusions and Future Research

This paper showed some of our ideas on knowledge management for law practice. These ideas are based on the first explorations of a PhD. research performed by the first author since March 2001.

In this paper we explored the idea that knowledge management could be used in more ways (*see section 2*). Not only can KM be deployed to entire organisations, but also to divisions and legal employees who perform legal tasks. Each of these groups has its own characteristics and to successfully perform KM projects, they should be approached according to their characteristics. Many KM methods also lack a preparation; they are developed and applied on the basis of the presumption that KM is useful. To increase the chance of success of a KM project we believe that a good preparation, including a project plan, should be applied (*see section 3*). This idea is not new; it is based on years of research in the area of software engineering. For the filling in of a KM project plan, it should also be kept in mind that we have to deal with different groups involved (e.g. the entire organisation or employees performing a legal task).

Because the PhD. research has started this year, we are still exploring (new) ways of KM for law practice. Our future research will look more closely at subjects like the practical use of linking KM support for a legal task to the KM support of an entire organisation, methods for the preparation of a KM project, other phases necessary for a KM method to support legal tasks and AI&Law methods and techniques suitable and necessary for use in such a method. At the moment the idea is to put the results of the PhD. research into law practice (e.g. a law firm) and to find out whether (AI&Law) methods, techniques and IT for example, are suitable for KM. On basis of the results, a KM method for law practice could be developed.

References

- [1] Apistola, M., Juridisch kennismanagement in de praktijk: Advocatenkantoor Stibbe, in: BNVKI Newsletter, vol. 18, No. 3, June, 2000.
- [2] Avison, D.E., Fitzgerald, G., Information systems development- methodologies, techniques and tools, London, McGraw-Hill, 1995 p.205.
- [3] Cawsey, A., The essence of Artificial Intelligence, Prentice Hall Europe, 1998.
- [4] De Veij Mestdagh, C.N.J., Juridische kennisystemen, Rekenruimte of rekenmeester?, dissertation Groningen, Deventer, Kluwer, 1997.
- [5] Doukidis, G.I., Whitley, E.A., Developing Expert Systems, Chartwell-Bratt, 1988 pp. 20-29.
- [6] Duivenboden, H. van, Lips, M., Frissen, P. (red.), Kennismanagement in de publieke sector, Elsevier Bedrijfsinformatie, Den Haag, 1999.
- [7] Edwards, D.L., Mahling, D.E., Toward Knowledge Management Systems in the Legal Domain, ACM, 1997.
- [8] Eilers, H.B., Systeemontwikkeling volgens SDM, Academic Service, Schoonhoven, 1991.
- [9] Florijn, R., Gurchom, M. van, Meulen, M. van der, Kennis leren managen – de theorie en praktijk van kennismanagement, Ten Hagen & Stam, Den Haag, 2000.
- [10] Ghezzi, C., Jazayeri, M., Mandrioli, D., Fundamentals of software engineering, Prentice-Hall, 1991 pp. 427-437.
- [11] Gordon, T.F., The pleadings game, Dordrecht, Kluwer Academic Publishers, 1995.
- [12] Gottschalk, P., Use of IT for Knowledge Management in Law Firms, The Journal of Information, Law and Technology (JILT), vol. 3, <http://www.law.warwick.ac.uk/jilt/99-3/gottschalk.html>, 1999.
- [13] Gurchom, M. van, Florijn, R., Meulen, M. van der (red.), Kennis leren managen, Ten Hagen & Stam

- uitgevers, Den Haag, 1999 42.
- [14] Hage, J., Reasoning with rules, An essay on legal reasoning reasoning and its underlying logic, Kluwer Academic Publishers, 1997.
 - [15] Keil, M., Cule, P.C., Lyytinen, K., Schmidt, R.C., A framework for identifying software project risks, in: Communications of the ACM, Vol. 41, No. 11, November, 1998.
 - [16] Konstantinou, V., Sykes, J., Yannopoulos, G.N., Can legal knowledge be derived from legal texts?, in: ACM, London, 1993.
 - [17] Lodder, A.R., DiaLaw – On legal justification and dialog games, dissertation University Maastricht, Maastricht, 1998.
 - [18] Matthijssen, L., Kennismanagement: B there or B2 , in: R&EM, nr. 3, December, 2000.
 - [19] Morabito, J., Sack, I., Bhate, A., Organization modeling, innovative architectures for the 21st century, Prentice Hall, 1999.
 - [20] Nonaka, I., Takeuchi, H., De kenniscreërende onderneming- hoe Japanse bedrijven innovatieprocessen in gang zetten, Scriptum Management, Schiedam, 1999.
 - [21] Oskamp, A., Het ontwikkelen van juridische expertsystemen – een theoretische beschouwing, dissertation Vrije Universiteit Amsterdam, Kluwer, Deventer, 1990 pp. 30-91.
 - [22] Oskamp, A., Tragter, M., Knowledge for automated legal problem solving: theory versus practice, ICAIL-97, ACM, Australia, 1997.
 - [23] Oskamp, A., Rechtsinformatica: Vooruitzien in de informatiemaatschappij, oratie Katholieke Universiteit Nijmegen, Kluwer, Deventer, 1998 6.
 - [24] Oskamp, A., Lodder, A.R., Tragter, M., Mutual benefits for AI & Law and Knowledge Management, Proceedings of the Seventh International Conference on Artificial Intelligence and Law, ACM, New York, 1999.
 - [25] Oskamp, A., Beheer van juridische kennis in het IT tijdperk, in: Onderneming en ICT, Berkvens, J.M.A., Faber, N.E.D., Kortmann, S.C.J.J., Oskamp, A., (red.), W.E.J. Tjeenk Willink, Deventer, 2000 301-305.
 - [26] Prakken, H., Logical tools for modelling legal argument, Dordrecht, Kluwer, 1997.
 - [27] Prakken, H., Argumentatieonderzoek in de rechtsinformatica, mogelijke toepassingen, Jurix meeting May 11, 2001.
 - [28] Samson, E.P., Organisatie, besturing en informatie, Kluwer Bedrijfswetenschappen, Deventer, 1993 p.21.
 - [29] Scott, A.C., Clayton, J.E., Gibson, E.L., A practical guide to knowledge acquisition, Addison-Wesley Publishing Company, 1991.
 - [30] Valente, A., Legal Knowledge Engineering – A Modelling Approach, dissertation University of Amsterdam, IOS Press, Amsterdam, 1995.
 - [31] Van Kralingen, R., Frame-based conceptual models of statute law, dissertation University Leiden, 1995.
 - [32] Verheij, B., Rules, Reasons and Arguments, A study of defeasible reasoning in law, dissertation Maastricht, 1996.
 - [33] Visser, P.R.S., Knowledge specification for multiple legal tasks: A case study of the interaction problem in the legal domain, dissertation Leiden, Den Haag, Kluwer Law International, 1995.
 - [34] Wahlgren, P., Automation of Legal Reasoning – A study on Artificial Intelligence and Law, Kluwer, Deventer, 1992 pp. 256-259.
 - [35] Weggeman, M., Kennismanagement – inrichting en besturing van kennisintensieve organisaties, Scriptum Management, Schiedam, 1997 p.67.
 - [36] Werff, B.M. van der, Methoden van kennisacquisitie, in: Kennis in organisaties – toepassingen en theorie van kennissystemen, Jorna, R.J., Simons, J.L. (red), Dick Coutinho, Muiderberg, 1992 pp.145-146.
 - [37] Weusten, M.C.M., De bouw van juridische kennissystemen – KRT methodologie en gereedschap, dissertation Universiteit Utrecht, Kluwer, Deventer, 1999 p. 50.
 - [38] Wiig, K.M., Knowledge Management: Where did it come from and where will it go?, in: Expert systems with applications, Vol. 13, Nr. 1, Liebowitz, J., Hoog, R. de, Spek, R. van der (eds.), Elsevier, 1997.