

U N I V E R S I T Y O F T W E N T E
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**Different Worlds: Street Level Bureaucrats'
role and usage of expert systems**

**Master's Thesis
Programme Public Administration**

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1. Introduction

This master's thesis is the final assignment of the Master's Programme in Public Administration of University of Twente. Since my studies in public administration were concentrated on the role of various governments and new solutions in public sector, I have chosen to examine the field of e-governance in my final paper.

In the focus of my research there are street level bureaucrats and knowledge based expert systems which have recently been introduced. Besides portraying the theoretical approaches from several viewpoints, through a case study I am investigating whether my assumptions turn out to be true, and how theoretical suggestions and expectations appear in the practice.

The main reasoning line of this thesis is the so called structuration theory, according to which I assume that street level bureaucrats, working in the same field for different organizations, have divergent roles, status and discretionary power, because the expert systems they use are expected to determine work processes, and bureaucrats shape the system by their use of software as well.

In the introduction which serves as the first chapter, I give a description of the relevance of the topic and my research, and as well as that of dilemmas in e-government issue, furthermore I introduce detailed research questions and hypothesis. The following second chapter serves as theoretical part of this master's thesis, where problems are approached from the aspect of structuration theory concerning technologies, from that of the theory of street level bureaucracy. Further elaboration will take place on the role of the law and the styles of policy implementation. The third chapter describes the method of research, which is based on case studies and serves as an introduction to the empirical part of the thesis. Following the detailed description of the empirical findings in the three Hungarian cases in the fourth chapter, a comparative analysis of the cases will reflect on the theoretical considerations by investigating the research questions. Finally the sixth chapter summarises the findings by answering the research questions and suggesting further elaboration and research.

1.1 Relevance of the issue

E-government is a term given to those movements and new governance forms which proposed a more extensive use of information and communication techniques (ICT) after the eighties of the twentieth century. E-government serves also as a measurement for making

public services efficient and customer friendly, consequently it is a tool in the toolkit of New Public Management wave of administrative modernization.

Using information and communication technology in the public administration and keeping up with private sector organizations was always a crucial issue for governments in the second half of the 20th century, since all core tasks of a government (making decisions, giving information, delivering public services Pratchett, 2002. p220.) can be backed up with new technical developments. In several cases it is impossible to decide whether the applied ICT system is rather supporting a better service delivery or it is more a management control system, since these new complex systems integrate several functions.

While initially the automatization of work processes was the reason for using ICT and later the primary function was information exchange, now we are living in an age, where researchers are focusing on the phenomenon organizational transformation as a result of using management control and information/communication technique. (Bellamy Taylor, 1998 p.150)

In this age of integrated governmental data systems and institutional transformation several questions can emerge concerning quality of democracy and freedom as well as the changing role of public administration staff: the bureaucracy.

There are debates not only about the current use of ICT systems and handling of data, but about future as well, since from viewpoint of several researchers e-governance and the use of new technologies are the driving force in reforming public administration.

This special, well educated, experienced and legally defended staff of public administration serves as a basic element of bureaucracies. There have been several and far-reaching organizational changes carried out in the administration of social assistance, thus street level bureaucrats have also been concerned and consequently their roles, powers and special legal status that had been prevailed long before have been changing now. This problem raises many practical and normative questions.

Although a part of the problem considering the changes brought by expert systems was studied by researchers, the interaction of the introduced expert systems (structure) and bureaucrats (agent) hasn't been researched lately. From this later approach I will examine in my final thesis the new roles of street level bureaucrats that emerged after introducing decision supporter technology. Furthermore I am excited if the discretion of bureaucrats has disappeared, and I will search answer to the question whether or not expert systems can take over (some of) the tasks of bureaucrats.

The changing role of public administrators will be examined based on the well elaborated and discussed structuration theory (it will be presented later). According to the theory we can ask what kind of effect users –in this case the street level bureaucrats- can have on the technology they use, consequently what kind of power and discretion they may have after introducing highly developed management control as well as information and communication technology. Field studies about municipalities will reflect on the theoretical background and will provide further aspects through particular practical settings making thereby the issue more complex and colourful. Findings of this analysis –based on the empirical data - can be a starting point of normative debates and decisions concerning the organization and the tasks of public administration and other questions in connection with democracy, such as transparency, privacy issues, deliberative democracy etc.

1.2 E-governance: main issues, questions, predictions

In the introduction I have already referred to the classification of development in ICT use in the time-maturity frame that is after the era of automatization and later information revolution, nowadays we are challenged by the phenomena of transformation of daily operations. This third, most mature phase in the classification is accompanied by more complex and numerous issues than those researchers and bureaucrats had to face in the first two phases. In the following I am briefly presenting these considerations listed under the labels ‘privacy’, ‘organization’ and ‘democracy’ and these will be elaborated from the viewpoint of the research question of my thesis.

Privacy

Under privacy issue there can be also numerous aspects mentioned. Firstly, citizens are afraid that their personal data might not only be used for the purpose they have been given. Besides data misuse they are also afraid that the information provided by completing forms is not covering their actual state of affairs or conditions, accordingly they can be put into categories that does not actually suit their status. This fear of government’s categorization is also present when various public bodies integrate their data systems (as it appears also in one of the examined cases in this thesis) or provide one particular service, they are also checking eligibility of clients (and all their circumstances) in various ways. That makes people feel that their freedom is getting more and more restricted.

A further anxiety is in connection with arguments that consider e-governance as a driving force in reforms. Namely newly developed software can facilitate a new particular usage of information that is illegal, but since there is temptation to use that feature of the software, bureaucrats will put the legalization of this new means of information handling to the political agenda and will manage to legalize it at the end. A new act which is restricting the liberty of people could have never been adopted before and otherwise. This example turns out to be a self generating process –as (Killian and Wind, 2002, p. 281.) mentions it– and subsequently it will be accompanied with more and more restrictions on citizens’ privacy.

Privacy issue is also at stake when we are focusing on the role of street level bureaucrats, since they are the (only) ones who contact citizens, who ask for data and who are using integrated data systems. There can emerge some questions such as: can street level bureaucrats play a coordinator role, can they protect personal data, and ease citizens’ anxiety about categorization and misuse of their data?

Organization

One of the main ideas of the New Public Management (wave of modernization of public administration) is to provide public services efficiently and in a customer friendly way, because after all, governmental services are paid by citizens through taxes. With other words, using the slogan of the German Minister of Interior: “instead of people let us the data move!” (Volker, 2002, p.5.)

Significant organizational changes have been carried out in order to achieve goals, such as that of the German Minister, but not mainly because of the requirements of adopted information systems, but because an efficient service providing needs a different workflow.

Governments have been changing their work organization; they ruin old connections and processes and create new ones instead. The main movement is to create one stop (front)offices which are backed up by back offices at various levels of integration. (see Millard, 2002).

While trying to be more customer friendly and efficient governments have been providing wide range of online services (through their homepages) starting from giving simple information through online documents, registrations and communication to services with the highest interactivity level (See more: Volker, 2002).

There are also several questions concerning the organizational aspect of e-governance. There must be several trade-offs taken into consideration when deciding about e-governmental developments. For example there are services which have to be provided on larger scale and

others which need the knowledge and specific attention of locals (See more Leenes and Svensson, 2005).

As a result of working with ICT systems some NPM 'revolutionary' notions also have to be revised. According to reformist theories, a government has to outsource all the activities, which can be provided more efficiently by other agents, and keep only the core competences. This notion was in line with the traditional doctrines saying that politics and administration furthermore policy making and implementation have to be separated from each other. The new settings and circumstances, however, make the implementation the core competence of bureaucracy again (also because of privacy issues and integrated data systems), therefore outsourcing becomes not reasonable any more. (Bekkers 2002, p.67.) If there is no more outsourcing, the problem of separating duties arises again.

The research questions of my final thesis can also be found under this ('organization') label: New way of service delivery needs different kind of planning and managing/controlling of work, consequently there appeared new ways of communication inside and also outside of an institution. Organizational boundaries are blurring and thus bureaucracies are changing, these changes do not leave the role of street level bureaucrats untouched either. We can ask, whether the former street level bureaucrats are only administrative robots, or just the opposite, their positions have been upgraded, so that they are free from administrative load and they have gained extended discretion.

Democracy

One of the most important debates is about the quality of democracy in the age of e-government. There are several arguments on both sides. Advocates of e-democracy say, that the government will be more responsive and responsible in service delivery, thus more information can be gathered for deliberation and there also will be more information available for people. Furthermore decisional processes become transparent and new channels of aggregation and articulation of interests will be created. On the other side critics say that the government concentrates the vast majority of its resources only on service delivery, because that makes citizens (customers) satisfied (Zuurmond, 2002, p.265). Skeptical researchers also say that human control and solidarity loses territory and gives its place to data systems which decide automatically. They also fear that freedom of people is getting more restricted, and democratic decisions are not an outcome of a deliberative process any more, but are made by available technical solutions. A further anxiety is that all fields of policy would have the organization and management style as the world of business,

consequently fields where the “professional” way of policy implementation is dominant (as it was in higher education before) will all disappear.

In connection with the discretion of street level bureaucrats, there can be raised a normative question raised, whether the process through which lowest level bureaucrats have less and less word in decisions is desirable or unintended.

1.3 Research Question

Occidental countries have introduced new information technologies in the systems of social assistance. The main characteristics of these technological improvements are that they provide legal help and are able to make decisions according to rules and regulations, hence administration becomes quicker and efficient, frauds can be also easier detected and bureaucrats can be controlled, as well. These developments must have also significantly changed work processes in hierarchies and have affected the expectations of state administration and the role of public administration staff as well. This very change is in focus of my thesis.

Although similar improvements have been applied in different countries and governments in the same field, there can be several differences in the use of technique.

In this study I want to research, how the role and discretion of street level bureaucrats is affected by introducing expert systems, and whether or not eventual changes show particular tendencies and trends.

Supportive questions:

- What kind of new roles, tasks of frontline public administration staff have emerged after introducing knowledge based systems?
- Has the discretion of the street level bureaucrats disappeared? If yes, where does the necessity of making decisions concerning special cases turn out?
- To what extent can a knowledge based/expert system take over street level bureaucrats’ work?

Based on the theory of structuration, in this context that users shape the structure themselves by different use of technology and that way of using affects users as well, I assume that street level bureaucrats in the three examined municipalities in Hungary have different roles, power and discretion, although they have introduced similar expert systems.

The examined bureaucracies

In the empirical (second) part of my thesis I will analyse three bureaucracies –in order to answer the research question– in three independent city district municipalities of Budapest. It is common in these bureaucracies that they are administrating social assistance and they have introduced knowledge based software to support office performance. I assume, that in these bureaucracies there have been several and far-reaching organizational changes, thus street level bureaucrats have also been concerned.

Selection of cases is ideal in the sense, that these municipalities have the same size, and they are located even in the same city so that they face similar challenges and have same opportunities, hence this kind of factors which might cause differences in administration, have only a low effect.

2. Theory

This second chapter of the thesis will provide theoretical background for the practical problem/ question I am dealing with. Since the present research is carried out on the changing discretion of street level bureaucrats after having introduced knowledge based software, theory has to be elaborated on two main topics: ICT's role in organizations, and theory of (street level) bureaucracy.

The first main topic, which serves as main reasoning line, is the so called structuration theory, that was introduced by Anthony Giddens in 1984 and that emphasizes the duality of structures, namely that (briefly summarized) structures are means and at the same time outcomes of actions. Giddens' general theory was applied to changes caused by ICT developments in an organisation; this is presented afterwards by referring to Orlikowski's works. The discussion of law, regulation and features of expert systems also belongs to this enquiry.

The second main issue is the role and power of street level bureaucrats. This theory originates from Max Weber, and was discussed by several researchers. I will rather elaborate on the work of Lipsky¹ and mention recent thoughts on bureaucracy. By referring to styles of policy

¹ Michael Lipsky 1980. Street-level bureaucracy: dilemmas of the individual in public services. Russell Sage Foundation. New York

implementation I will also get closer to presenting the background of the issue raised in my thesis.

2.1 Theory of structuration

Giddens and the structuration

Anthony Giddens is one of the most productive sociologists of recent times, he has not only published 33 books, 335 articles, but also managed to build up a social theory. His two theoretical constructions, structuration theory and theory of modernity have inspired dozens of researchers in their work and have been massively criticized by colleagues.

The structuration theory was Giddens' construction and involved criticism of former dominating theories, such as functionalism, structuralism and Marxism. Giddens' theory of structuration -in contrast to the determinism of functionalism and structuralism- claims, that social structures not only determine actors, but they also change by actions, and vice-versa: structures are not clear cause of individual human actions but they influence agents.

Giddens was using this approach also to describe the relationship between the individual and the society. "Society is viewed as a structuration process, whereby human actions simultaneously structure and are structured by society." (Kaspersen, 2000, p.34.)

In redefining the concepts of actor, agency and structure, Giddens' main point is that (in contrast to the former preconditions) actors have free will and they are knowledgeable; he claims that our everyday life is full of actions that we carry out practically and so we have knowledge about them, but we don't reflect on them. Everyday usage of computers by technically analphabetic people can be mentioned as an expressive example, since they use the tool without knowing how it works. (Kaspersen, 2000, p. 37.) Giddens labels this circumstance as "practical consciousness"; this was also a starting point for the interpretations of structuration theory when studying the use of technologies (see Orlikowski later in this chapter).

Besides practical knowledge there is the "discursive consciousness", that is the voluntary element of action, it explains the motivation of action; it plays a role when people decide to change their behaviour. There is a third level of consciousness of actors, labelled as "unconscious motive" which also plays a role in the maintenance and reproduction of social life. Besides the main motives mentioned, there are also several circumstances and processes explained in Giddens' redefinition of agency which all are demonstrating that actions are

repeated in the same pattern, forming thereby a social order. However, these are also the same concepts that enable change in routines.

Analysis of agencies had a higher importance for Giddens than it had in the opinion of other social theorists. He claims, that every action can be characterised by three internal and two external processes. The **internal** ones are maintained, enacted and repeated by the agent: *reflexive monitoring* of action is a practical thing –he says– we are doing it every day, because everybody reflects on the actions he or she undertakes; we analyze our role and the outcome of action through our practical consciousness. *Rationalization of action* takes place also on practical level, but it is more about understanding the subjective reasons of actions. While the former two processes are in close connection with the practical recursive action in the very time of interaction, *motivation of action* refers to potential action. The subjective stages of actions mentioned above are accompanied by the **external** factors, such as *unintended consequences of actions* and *unacknowledged conditions of actions*. (Kaspersen, 2000, p.45-48.)

According to Giddens, structures, contrary to agencies, are existing virtually. Structures are not external conditions, they are rules that we remember when acting, and they are telling us how to act in certain situations. By saying that, Giddens creates a link between agent, agency and structure. Following this way of thinking we can come to the core of his theory, to the duality of structures: By claiming “structure is both the medium and outcome of the practices which constitute social systems” (Giddens, 1981, p.27.) Giddens replaces the former (structuralist and functionalist) notion of dualism, that is either the structure influences action or just the way around.

Other important element of structuration theory is the time-space dimension. Giddens argues that sociology should revise other theories also according to time-space setting, since all social systems as a consequence of social practices, are embedded in time and space.

While elaborating on time dimension he says that temporality coming from human nature affects social systems. The first kind of temporality is the daily life in which humans are repeating routines from day to day. The second provisional time is the length of human life which by its irreversible nature affects humans in their decisions. The third kind of temporality is connected with the life of institutions, that can be longer than the life of actors and it is called reversible time by Giddens.

Time-space dimension has an important role in Giddens’ view of social order and history. He asserts that the simplest tribal societies, that don’t even use writing, live and interact in the same time and space, while highly developed Westerner societies are interacting through

different means of communication and travel across the world, so they exist in a wider time and space dimension. This later circumstance is called by him time-space distancing, that makes societies more complex. (Kaspersen, 2000, p.51.)

Giddens also argues that although societies are strong structures themselves with their rules and cultures, when studying them their interrelations play an important role. Embeddedness and interactions have special importance in Giddens' social theory and also in his structuration theory, although interactions and multi level causality make the analysis of systems more complex and the variables have less explanatory power.

When Giddens speaks about social changes, he refers to the introduced concepts of agency and structure. From the actor side change can occur when unintended consequences draw the attention to an improper action, making thereby the actor reflect on his/her routinized action. Change can occur also through discursive consciousness, that means the actor feels like changing his behaviour. Changing motives rooted in the structure are also manifold. Interacting actors are bound to different structures, such as: meaning and communication structures (signification, S), structures of control and power (domination D) and structures of legitimization (L). These structures are connected together and following each other, for example political institutions are constituted in the order of D – S – L, while the school can be described by the sequence: S – D – L.

Structuration in technologies

Orlikowski was not the first author who applied structuration theory to use of technologies. In her work Orlikowski (2000) develops the “practical lens” through which organizational changes, usage and structure affect each other. She has improved structuration theory in this field by providing an approach applicable for ongoing changes, in contrast to former notions that could only explain different outcomes of technology use in various contexts.

The former structurational models had the core approach according to which structures are inscribed in technologies, however, users can choose from some opportunities offered, thus it can be predicted how people affect the structure. This notion had a supportive fact in the background, that conceptual artefacts can usually be interpreted and used in a wider range, contrary to physical ones, such as a software, which have a certain boundary of use.

Orlikowski's main argument in favour of using her “practice lens” is, that it makes more comprehensive research possible, since she has recognised two aspects of usage, namely on

one hand technology as an artefact and on the other hand what people actually do with the technology.

Orlikowski's "practice lens" also contradicts those formal models which claim –also as structuration advocates– that users can shape structures only in the initial phase, when a new system is being installed and is being developed. She argues that users can shape technology and so the structure itself by adding features, by using or not using particular applications and by modifying the software that was installed. The ways how people may interact with each other and with technology can not be predicted since this process is not a choice from predefined set of possibilities, but a "situated and recursive process of constitution" (Orlikowski, 2000, p.406.)

Since this thesis is the final stage of the education, that MTEC scholarship provider intended to give me in order to become a careful analytic leader in the future in Hungary, I find it wise to reflect on my working experiences in Hungarian Ministry of Education, where I was responsible for handling application programmes aiming to integrate the Roma minority into the Hungarian society. As this programme was providing schools with EU funds, it had to use the United Monitoring Information System, which helped the work of colleagues and at the same time provided information and transparency. Since this system was quite complex and hardly understandable, each working group in this application department (with 200 employees) had a particular use of technology. Managers made great effort to harmonise the use of information system.

Instead of speaking about structures embodied in technologies, that is users can choose and act (or not, or only to a certain level) according to the options offered by the built in applications of a software, Orlikowski has introduced the technologies-in-practice term which means enacted structures of use technology². She refers to case studies written by colleagues of her, proving thereby that in all cases regardless whether it happens intentionally or by chance, people do alter, ignore or choose technological properties.

Recalling the supportive argument of the former structuration models, we can say, that although software as a physical good has certain boundaries, combination of use of features

² "the sets of rules and resources that are reconstituted in people's recurrent engagement with the technologies at hand." (Orlikowski, 2000, p.408.)

makes the outcome (software usage) hardly predictable. In my former office –to continue with my own example– it has happened as follows:

Several workgroups had different perception of the technology and different preference how the work had to be completed, so they neglected or overused some features of the expert system, consequently the United Monitoring Information System was only “united” and generally applied to a certain extent. Workgroups were in daily interaction with the software developer, and they were able ask him directly to work out developments that could help the particular workgroups. Later these developments were taken over by some other workgroups as well. The unanticipated use and unintended consequences made the management unsatisfied with the new system.

Although it is relatively easy and clear task to design a software for an organization in order to back up different processes, it is not enough to focus on the technological/engineering aspect of the software. Structural studies at the end of the 20th century drew the attention to the practical experience, that is the perception of new technology as well as institutional and organizational contexts can cause unintended and undesired consequences (structures) through their interaction.

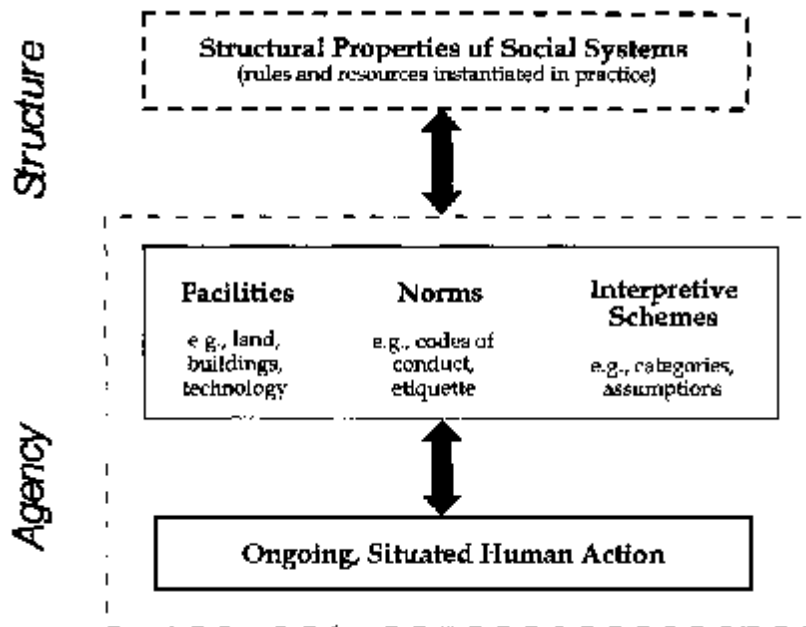
Orlikowski’s practice lens also implies that organisations with highly developed software are in a process of constant change. Users may develop new properties while ignoring old processes, therefore stability of the technology-in-use is always provisional, and it affects the life of the organization, as well. It can not be argued, however, that only technology keeps the organization moving perpetually.

There is a further important observation of Orlikowski’s analysis, namely current technology-in-use shapes later stages; recent use becomes recurrent, it enacts, shapes the structure, the organization and its culture thereby. Consequently the organization will give similar answers to future challenges; it will have its own way of reacting to developments.

The scheme that Giddens and Orlikowski use can be found under figure 1. That is how agency factor and structural factor affect each other when a technology is used: knowledgeable users act according to their practical consciousness and tacit knowledge and take the community’s facilities and norms into consideration. By acting repeatedly they are shaping the structure they are acting in. Various technologies-in-use and/or other aspects of

use can be presented in a way where many sheets containing this model scheme are put on each other.

This portrayal of structurational agency - structure relationship will help me in the following chapters to introduce, explain and to analyse real life cases, which are the object of my examination.



2.2 Perception and role of law

Contemplation on the characteristics of legal regulation is reasonable in this thesis because law significantly affects the discretion of bureaucrats and since expert systems are designed to follow legal processes.

Svensson (2002b) refers to Witteveen when depicting the continuum of thinking about law. Two extreme opinions designate the axis, where also all the other positions take place, and as we see later, because of changing perception of law, these opinions are moving along this axis.

According to the first opinion, law is the command of legislator and it should be followed by the lower level administrators. Political leaders can decide to give the right of discretion to their agents, but in this case it has to be clear and detailed. In every case the legislator has to be careful by giving commands, he/she should take into consideration all sorts of cases that

can arise. The interpretation of the text of law and/or misbehaviour of the administrator can undermine the political intention, authority and the whole democratic system.

According to the other position, authority and responsibility are manifold and occur on several levels, they have supplementary nature. Law is considered to be means of communication between partners in horizontal relationships. In this view law is a text that describes the desired outcome and its main parameters. Since in various environments and local conditions there are different ways of achieving political goals, legislator wants the executor to interpret law.

Svensson (2002b) agrees with Witteveen, who claims that –while both upper explained positions are valid– law and perception of law differs in time and fields of policy. There are legal domains with precise law and there are other areas, where the text of a law is rather a symbol, conveying only the intention of political leader.

My thesis is examining bureaucracies that are administrators of social assistance. This field I would characterise –agreeing with Svensson– rather as a legal domain, where law needs to be interpreted. The main reason supporting this opinion is that clientele is huge and has an open end because of people’s motivation in getting benefit from state, and there are interrelations among citizens as well as various other conditions, that make the precise definition of eligibility and target audience hardly manageable. Also because of the irresponsibility of indicators of clients’ eligibility, government needs the executor to interpret law by applying the idea of law instead of taking the letter of law.

However, – as already mentioned– labelling of a certain domain of law is changing in time. While welfare states were gradually extending in scale and had the tendency to provide a wider spectrum of services, interpretative view of law became valid in more and more domains. (Svensson, 2002b) Nevertheless a motion that triggers comeback of a more rigid view of law has recently appeared parallel with the “bankruptcy of welfare state”, that is accompanied by the phenomena of overused social services, of subsidy addicted citizens and of widening space for fraud. The introduced ICT/ legal expert systems are expected to hinder misuse of benefits, provide transparency and hinder non legal conform and illegal provision of benefits.

Although legal expert systems have been developed to support decisions legally and solve cases with data inputs, they would less likely to fulfil all the expectations, because of the very nature of law in this domain. As Svensson (2002b) concludes complex cases still need different handling.

2.3 Expert systems in the domain of social assistance

Expert systems are a kind of ICT developments that are supporting users in making decisions and administrate the outputs, as well. Their growing adoption has several reasons. First it can be mentioned, that after the age of e-governance, which was labelled as 'automatization', now we are in the age of data system integration and reorganization. Welfare states have gone through crisis at the end of the 20th century, therefore they have made use of these developments as a means of reforms. Administrative workload on bureaucracies has been increasing, so governments need new cheap instruments in order to be able to overcome the troubles and to keep the quality level of the services at least on a constant level. These statements are getting more and more true for the domain of administrating social services.

The main, basic services provided by expert systems are the following: They function as checklist for the consequent steps that should be made and for clients have to submit, furthermore they also determine the right order of getting information. These software give notification (also in case of already ongoing processes, when deadlines are closed) and they make a decent documentation of process and archive them, as well. (Svensson, 2002a) Expert systems are also functioning as databases, by making it easy to provide information to the management for controlling employees, and to search cases according to categories.

The example of Tessec software, which was developed in the Netherlands, helps to understand the computer programme from inside. Svensson (2002a) writes, that this system had a so called domain knowledge, that is it contained all relevant legal and practical know-how's that might be in connection with decision making. It operated along if-then rules and text sections. Then 'inference engine', a computer programme, selected the relevant rules and whether requirements of the rules were met. At the end of the process (as also at the beginning ,when questions are raised) the 'user interface engine' communicated the outcome had made by the inference engine, while it put legal reasoning in a readable form and made it possible to follow the steps and logic of reasoning.

In several cases expert systems are able to exceed human capacity in time and preciseness and they have great advantages in giving legal support. They are relieving users of administrative load (in this case the street level bureaucrats') who make thereby better use of their professionalism and experience. As Svensson (2002a) also mentions, using expert systems is now a trend in public administration and it promotes integration of governmental

data systems, as well. Installation of this kind of software can also represent a first step towards service integration (maintaining front offices and one-stop shops).

Although sociologists acknowledge several positive features of expert systems, they strongly doubt that these kind of software would be able to supplement professional public administration staff, since bureaucracies are not decision maker administrative machines, who can be replaced by smart automatized systems.

The idea of decision making expert systems has to be criticized already from theoretical point of view: first there are simple cases which can be easily handled, and there are the complicated ones, which can not be dealt with computers since relating regulations might be contradictory etc.; and second, the nature of law on the field should be taken into consideration. (Svensson, 2002a) (See meanings of law in the subchapter above.)

A more practical approach can bring the theoretical discussion to an end or open debates about other aspects. The fact that a huge number of municipalities use these software and they are satisfied with them, shows that expert systems can significantly support public administration. On the other hand it is the legal support given, the clear administration and the database feature that satisfy bureaucracies on the field of human services. (Svensson, 2002b)

There is a further related and more interesting question from the viewpoint of this thesis, that is: how expert systems affect discretion and role of street level bureaucrats.

Svensson (2002a) concludes that fear has proved to be unjustified that bureaucrats would get de-skilled and discretion would be eliminated, because although expert systems take over responsibilities and several tasks, they rather delegate more responsibilities to educated professional employees. Furthermore his research pointed out that even the control has become looser in several municipalities, by using expert systems

In the field study of this thesis I will elaborate on these dilemmas and try to answer which role experts systems have in determining certain organizational solutions and changes in responsibilities and discretion.

2.4 Theory of street level bureaucracy

Since in this thesis I investigate the motions and tendencies that affect street level bureaucrats as well as their role and discretion while using expert systems, I have to refer to the theory of street level bureaucracy. Lipsky's book, under the title *Street-level Bureaucracy: Dilemmas of Individuals in Public Services*, managed to concentrate the attention immensely on this issue, although it had been already discussed by researchers before. The main

argument of this book is that bureaucrats, who have the direct contacts to clients, have a crucial role in the outcome of the policies as they possess a certain discretion, which gives them maneuvering space.

Generally literature published on this issue agrees, that room for movement is inevitable and paradoxically, new rules laid down just to hinder it trigger even more discretion. (Evans and Harris, 2004, p. 19.)

Street level bureaucrats are the only ones contacting clients in organizations, where public services or another type of access to law and government programmes are provided. (Lipsky, 1981, p3) It would be interesting to discuss the problem, whether the new organizational solutions of the 21st century (speaking e.g. about different work order, expert systems, legal status of positions etc...) still allow the use of this simple definition or we need a more chiselled one.

Lipsky argues that managers of organizations and street level bureaucrats working for them have different interests and employees are following primarily their own interests and only in accordance with those rules or agency goals that can be controlled. (Lipsky, 1980, p.18- 19.) However, these statements can be criticised at least in the domain of social security service administration, because street level bureaucrats can be very motivated by serving an institution, which helps people in crisis situations. Although racism, prejudice can make them oppose agency goals, but we can hardly consider these actions as personal manifestation interests, these are rather conditions.

Lipsky describes that not only managers in bureaucracies are unable to control their workers, but street level bureaucrats are also left alone in translating the policy into actions or in interpreting the law. In order to be able to do their job, bureaucrats develop certain house made solutions. Their distortions of policies are often discovered, but managers treat them with implied acceptance, because otherwise the work couldn't be completed. Lipsky concludes: at the end policy is what street level bureaucrats do. (Lipsky 1980, p 18.) Ellis et al (referred by Evans and Harris 2004, p.4.) forms the discretion of street level bureaucrats as follows: they are filling the gaps in policies.

There are two basic sources of discretion according to Lipsky (1980, p.14, 161): the first is due to the condition that street level bureaucrats have to deal with clients, who are unpredictable and have various dynamic needs. The second results from legal regulation, according to which employees are educated civil servants and therefore they have to be protected against various types of 'attacks' coming from the side of politicians, managers or clients.

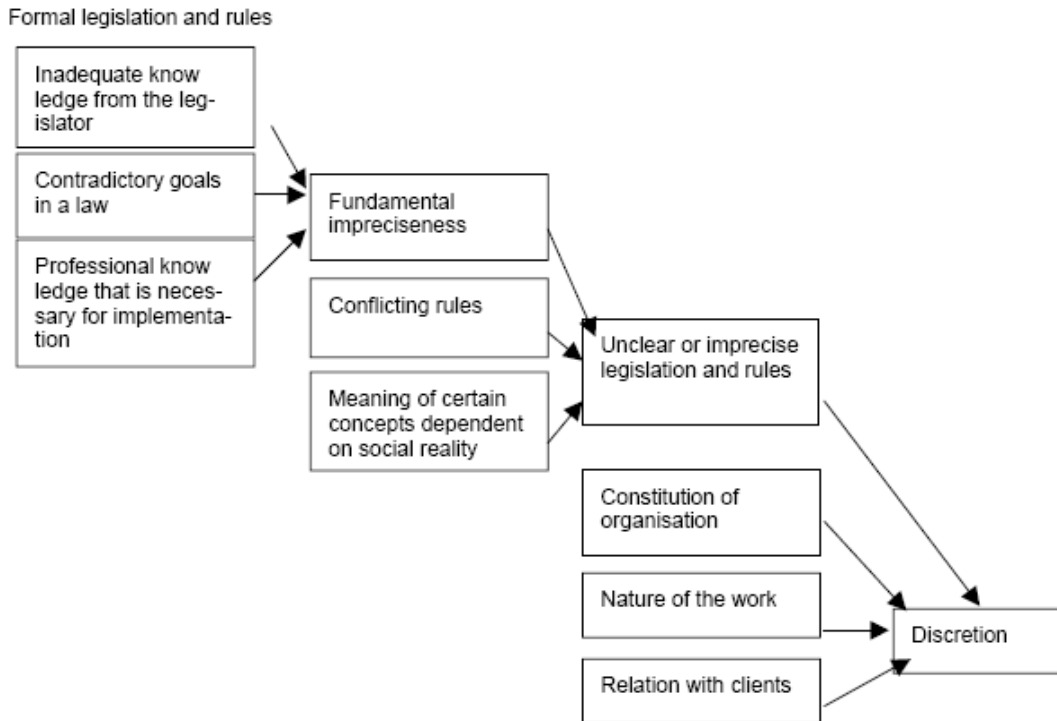
Van der Veen and Moulijn (2004, p.12) mention other factors of discretion in their detailed analysis (see also table 1.): the first source of discretion is that legal rules are often imprecise or unclear³, the second one is, that the complexity and structure of organizations can allow manoeuvring. Thirdly, they point out that street level bureaucrats are those who have the direct contact with clients, therefore some of their actions remain invisible to management; fourthly the authors claim: street level bureaucrats as professionals have to meet professional standards that often contradict legal standards.

Street level bureaucrats in the field of social assistance

The area of social assistance is a proper domain to observe and analyse discretion of street level bureaucrats. Now I will try to make clear, how sources of discretion appear in this field. First, only street level bureaucrats are in direct contact with clients, consequently their interactions, mainly those in not written form are invisible and not provable for managers. Second, employees in this field have to contact clients, to administrate procedures, to arrange clients' access to government programmes, to push the client back to the labour market, and always have to check eligibility and potential fraud. The manifold of tasks means also that rules and policies have different sources, such as labour market, social assistance, education, health care, etc., consequently in most of the cases it is not hard to find contradicting or vague rules, this is why these conditions might lead to certain discretion, as well. Complexity of organizations varies from case to case, but has a role in discretion in social assistance, as well. Finally, educated street level bureaucrats as experts of social reintegration often have to deal with the fact that legal rules make it impossible to reintegrate clients effectively, therefore bureaucrats have to interpret the law and create their own practice by using it.

³ According to a neat phrase the strike of the bureaucrats is when they follow the letter of the law.

Table 1. Sources of discretion



Source: Van der Veen and Moulijn, 2004, p.13.

Tom and Harris are (2004, p. 10.) speaking about the myth of discretion when quoting Howe, who says that because of interrelations among bureaucrats, various departmental and group solutions and organizational culture, the given manoeuvring space is lessened to a minimal discretion. To enlighten the dilemma of discretion from an other view, the authors mentioned above refer to Dworkin, who argues that discretion is not coming from the absence of rules and principles, it is rather the space between them.

Normative approach of the discretion dilemma –whether it is desirable or rather negative that street level bureaucrats have manoeuvring space – evokes a lot more discussion. “Street level bureaucrats are either very nice and invent how to deal with piles of problems fairly, appropriately and successfully, or they are favouring, stereotyping and routinizing and serve private or agency interest thereby.” (Lipsky, 1980 p.xii.)

According to Lipsky (1980, p.117.) informal practices of street level bureaucrats serve two functions: they enable street-level bureaucrats “to limit services or choose among clients” and “to obtain client co-operation”. These mentioned functions are rather negative normative aspects of discretion, namely the mean the easier cases and preferring certain clients.

On the other hand, mainly from the professional side, there are several arguments pointing out the benefits of the discretion. For example, there can be hidden facts behind clients' data, that would not be taken into consideration, if street level bureaucrats did not handle it quasi illegally, on the basis of their principles, which are usually correlating with those of the organization. The case of contradictory regulation is already mentioned, on this field without manoeuvring space available for street level bureaucrats, policies couldn't be implemented. Since it is impossible to set up categories that each client fits in well with, there will always be special cases to be handled, which may be against certain regulations but correspond the idea of law and goals of policy.

2.5 Styles of policy implementation

Although we speak about bureaucracies and bureaucratic style of policy implementation, the picture is not that clear, if we analyse the way governmental institutions are working. Terpstra and Havinga (2001. p.8-16.) examined various styles of policy implementation; they specified four types of management these are as follows: the traditional, the bureaucratic, the professional and the managerial ones. Although organizational arrangement of institutions in social assistance would fit the authors' 'bureaucracy category', if we take a closer look at the features of their classification, we have to place the examined bureaucracies somewhere between the bureaucratic and the professional type of implementation.

Looking at the first point of Trepstra's and Havinga's approach: the interpretative schemes, bureaucracy can be depicted as "Reference to formal rules and impartiality" and the professional style as "Reference to professional decisions within the legal framework". As we have already seen when analyzing law and discretion in these organizations, it is rather the professional approach that would fit the everyday experiences.

Although, on the level of norms bureaucracies of social assistance are "loyal to law and rules" instead of being "expert and purposeful" –the latter is the feature of the professional style–, yet they can be rather characterized by the professional feature labelled "individualized action aimed at the best possible result" in the practice, than by "proper application of rules irrespective of persons", which characteristic is a characteristic of the typical bureaucratic style.

Having a look at the framework of organization and supervision, we can state that these public institutions are still closer to the bureaucratic style ("Supervision by hierarchical lines

in compliance with the rules; procedures laid down in directives and laws”) than to the professional style of policy implementation (“peer review; professional organization, specialization according to expertise”). The former finding is valid even in the practice.

This analysis shows that in the everyday life bureaucracies are moving towards the professional or even towards the managerial style of implementation at least in the field of social assistance. These changes can cause increased use of ICT as well, or turning back to the reasoning: increased use of ICT and expert systems forward governmental organizations from bureaucratic towards professional and/or managerial style of control. Investigation of the three Hungarian municipalities will also reflect on this phenomenon.

3. Case selection, method of research

I have chosen to examine bureaucracies of social assistance to check theoretical expectations and to provide substance to further researches, because this is one of the fields of public services, where the role of street level bureaucrats is of central importance. Namely they have to deal with several laws, rules and regulations and also as human service providers they also have to adjust the manifold needs of clients with legal regulations. In the theoretical part I was elaborating on the dilemma of discretion by quoting inputs of Lipsky as well as Van der Veen and Moulijn. On the field of social assistance, every aspect and source of discretion can be found. The second main reason for choosing the domain of provision of social benefits was, that it is a complex area, where effect and use of expert systems are rather unpredictable, therefore, this domain and this thesis could show what are the reasons for the contradictory outcomes and opinions.

There are several possibilities how to examine the expected changes in the role of street level bureaucrats, however, time and budget limits restrict the author since this research has been conducted in order to support a master’s thesis.

One possibility could be to carry out a quantitative research based on questionnaires, which could have been constructed by observations at some organizations. The great disadvantage of this choice, however, is the low likeliness of bureaucrats to give answers to tiring questions in a written form, moreover it would force bureaucrats to present their practices according to readymade classifications, hiding thereby information about individual usage of technologies.

Furthermore, due to the impersonal questionnaires they wouldn't speak about 'illegal' aspects of their work.

A second possibility could be the analysis of client files completed before and after introduction of expert systems at an organization. It would give more accurate and objective proofs for the changing role of bureaucrats, but because of privacy reasons the access of researchers to these files is restricted, moreover it would be time consuming. Assuming that street level bureaucrats do not document their sources of discretion and the way they have used it, it is not possible to get a clear picture of changes occurred in the processes of discretion. Also the tool of observing the work of street level bureaucrats would hide the very practices of manoeuvring, because these processes are usually happen hidden from clients', and executives' eyes.

To gain the trust street level bureaucrats and to gain a broad picture of their work in the examined issues, I have chosen to make interviews with them and with their executives according to questionnaires set up in accordance with the theory. This chosen method could also be also combined with field observations.

Several arguments spoke for my deciding to investigate the Hungarian social assistance. First, in Hungary social care stands in shared responsibility of central government and municipalities, and the law gives a wide freedom to the latter ones, which serve as e administrators of social assistance, therefore they can maintain different styles of service delivery. The second reason was that I myself had been working in the Hungarian public administration, so I was in the possession of background information and knowledge, how to question these bureaucracies in order to get realistic answers. Moreover the common language as well as the lack of possible cultural differences also helped my filed studies significantly when making my interviews.

The decision to choose three city district municipalities of Budapest was meant to emphasize the possible differences in the examined issues. Namely, these municipalities are identical in most of their conditions, consequently other factors and variables can be excluded, enabling thereby a more or less 'ceteris paribus' analysis. The selection of these particular municipalities was motivated by the fact: I have lived only in these three city districts, so far. To be able to analyse the interrelationship between the street level bureaucrats and the expert systems, I have investigated the following issues:

- The functionality of the expert system and the reasons for introducing it

- Expectations concerning the interaction between the user and the system, system development
- The effect of the system in the structure of the organization
- Sources of discretion and the changes brought about by expert systems
- Organizational performance and the clients concerned.

In order to approach the problem from the and viewpoint of the two parties involved, I made interviews with executives of the organizations and with 2-3 street level bureaucrats, preferably, with those who had been working also at the time of introducing the expert system. Taking into consideration the issues to be investigated (see above), I have set up questionnaires separately for both managers and street level employees. All issues involving too 'sensible areas' were checked with control questions. Necessity of control questions was confirmed several times while making interviews. As it will turn out from the empirical part, sometimes I decided to deviate from the questionnaire due to observations made and experiences collected at the spot, either while waiting for the interviews or after having made the first ones. For example, when I realized, that street level bureaucrats are differentiated according to their different tasks and discretion, I skipped some questions and inserted additional ones.

All the interviews were made in the same week, in compliance with the appointments made with the city district municipalities in Budapest. The length of interviews varied between 25 and 45 minutes, depending on the actual workload of my interview partners. In order to gain their trust, at the beginning of each interview I spoke about my work experiences in the Ministry of Education. Since I didn't want to disturb my interview partners and also didn't want to show them what I found important by making notes, I decided to tape the discussion. Listening back the audio tapes also highlighted some small but important details, which would have been forgotten otherwise.

The following chapter will give some background information and describe my empirical findings while the 5th one will evaluate and analyze them.

4. Empirical findings

In this chapter of my final thesis the results of my field study will be presented. Background information will also be provided in order to make a sound comparative analysis possible.

Budapest, the capital of Hungary has a governmental structure in which the city is divided along historical and cultural borders into 23 districts. Each city district functions as self-governing entity with independent city councils. In order to ensure global interests of the city of Budapest and to coordinate the cooperation of city districts, there has been set up the Central Council of the Capital of Budapest, which exercises legal authority over the city district municipalities.

The three districts, which have been selected for this study, belong to the downtown area of Budapest and each of them has about the same size of population, approximately 130 000 citizens.

Provision for social assistance is considered as a shared responsibility of both central and local governments. The Central Council hasn't made a common policy in this field in the expectation, that district councils would anyhow harmonize their practices due to the close geographical location and constant interactions of city districts. However, as it will become evident in this chapter, in each district has developed its own practices, without much cooperation with the others.

The Hungarian Social Act III/1993 (Szociális Törvény) provides the framework, which lays down general guidelines, provisional minimums and also determines eligibility conditions, but at the same time gives relatively much freedom to municipalities, especially when they want to subsidize benefits from their own budget. The form used for applying for benefits is a standardized document and doesn't allow any particular local adjustments. Here an interesting point of this act should be mentioned namely the use of application form is compulsory, it precludes the possibility of applying online for social benefits.

The Personal Data Protection Act (Adatvédelmi Törvény) also regulates this domain. This act makes administration expensive and slow, because in the spirit of the law almost all information necessary for determining client eligibility have to be provided by the clients themselves. It is a social fact, which is often commented on by experts, businessmen and civil servants and all interviewees in this study also consider this protection as an overreaction to the fear of possible misuse of personal data. Another important paragraph of the Personal

Data Protection Act, –affecting e-governance to a great extent– forbids municipalities to ask clients for information that has already been stored by any other database of the council.

In addition to the state level laws there are also several municipal regulations, which make the work of law interpreter street level bureaucrats more difficult, and hinder production of expert systems used in the administration, as well. It has to be remarked, too, that these regulations tend to change with nearly every season.

4.1 Budapest 13th City District Municipality

This municipality belongs to the most developed ones in Budapest and countrywide, as well, and it promotes e-governance and lays great stress on businesslike handling of the clients. In the social assistance department of the City Council (Social Office) this kind of expressed ambition is also visible. The main building of this Municipality –where all the offices, visited by citizens are located– is renovated, the offices are furnished with modern furniture and office equipments; citizens are provided with information and can wait without any kind of stress. The Social Office has 26 employees, most of them are young women aged 24-40.

In compliance with Hungarian norms clients are not making appointments in advance, consequently they have to wait 20 minutes in average, as observed by me. 4 to 6 administrators are consulting them in the front office. These front office administrators, although they have the same legal status as civil servants, are only consulting clients at the beginning in order to complete their application for benefits. These administrative staffs is not deciding in any case, their responsibility is restricted only to the formal check of applications. Complete application files are delivered to bureaucrats sitting –also literally– in the back offices. These employees are the ones who decide on the various applications and appeals. They also contact the clients in particular cases, when the provided documents are not clear enough. The third level in this hierarchy is the director herself, who signs decision drafts, made by bureaucrats of the second hierarchical level, one by one, without checking the files carefully.

The expert system, they use at this municipality, was introduced in 1999. It is the most complex one of those I have seen in the frame of field study, since this software is integrated in the municipality-wide administration system. The whole software was chosen out of more readymade software offers, but the one finally purchased was very carefully adjusted to local conditions. In the case of social assistance the introduction of the computer programme was

accompanied by changes in the organizational structure: the old executive of Social Office was dismissed and they moved into a modern building. Adaptation to the changes took considerable time, although there was almost no opposition demonstrated against the expert system, every employer was looking forward to using it. Lack of knowledge in computer sciences wasn't present or didn't play an important role.

The applied expert system is used in everyday work and it has become indispensable and even irreplaceable by manual operation: my interviewees mentioned that in case of power-cut, they would rather wait than continue working manually by making notes.

The strengths of this expert system are its administrative help, the additionally adjusted money transfer feature, and it's being connected with the integrated municipality server. Users also appreciate the software it is being a precise checklist, for its warnings when deadlines are coming, and they benefit from its basic legal help and from its putting data in resolution drafts. Also communication among employees got a new channel through the expert system. Administrators and the bureaucrats in the back offices are all satisfied with the system, they consider it as a useful and essential tool, not as the eye of the boss, which controls them.

From the management's point of view the applied system also proved to be very effective. The system enables representatives of the city council assembly to get information instantly about many parameters and statistics about the Social Office. Although the director denied having ever made any legally improper decision in the past, to a control question she replied that the expert system significantly decreased the number of mistakes of legal nature they had made. Furthermore, the director paid a compliment to the expert system in connection with deadlines: now it is hardly happening that tasks are not completed on schedule in contrast with the former situation when that was a regular 'practice' of the office's operation. The management control was also tightened by introducing the expert system, since by this means she can check all her employees incognito, whenever she wants.

The expert system applied is not a static development but is a daily updated software, which is gradually being accommodated to local circumstances, serving thereby its users. The constant development of the expert system is provided in a quite flexible and quick manner. The IT staff of the municipality gathers requests for smaller changes from employees of the Social Office, they discuss and carry out them (in case of approval) and if they are not empowered or capable to do programming, they contact the company, which has provided the software and they order the desired changes from them. If a new module or application is needed, the director of the Office the necessary and relating suggestions to the municipality's

IT staff. Small changes accomplished one by one in the system according to proposals of employees can never make confusion, since usually everybody knows about the particular suggestions, and is informed about the developments made. Interviewees admired this flexibility and the fact that in this way they are allowed to be creative and help the work through their own practical ideas.

After initially denying having any power or discretion, my interview partners listed several practices that give them space for manoeuvring⁴. Administrators in the front office do a simple work, which is clearly regulated and easily controllable so there is only a narrow or almost no space for manoeuvring. Their possibilities in this respect are not comparable with those of the bureaucrats in the back offices. For example, when back office bureaucrats recognize to face an irregular case, they do not even put it into the expert system, since that registers every movement in form of a footprint, consequently, they can not modify or delete the data later. It is also the street level bureaucrats' responsibility to send a case before the final decision to the social committee handling the complicated cases, since this committee is empowered to decide, when the rules should be considered as conflicting ones and whether or not the case deserves special equity. Bureaucrats' suggestions are in most of the cases approved, because they are the ones providing the committee with information about the clients. Since this municipality applies field studies for checking the eligibility of clients, bureaucrats if they want, can manipulate either committee which prepares the client report or they can tell the clients how to behave to achieve a more advantageous decision concerning their case.

This municipality decided (not publicly) that they won't use the tool of checking the eligibility of clients in some suspicious cases by asking the Tax Office for further investigation, because they do not deem this an effective way. They use their 'psychological' skills to convince clients and prevent them from frauds.

In the opinion of the Social Office the municipality and the Organization itself have managed to do more work of a better quality and that serves not only as a promising basis for the future but as the manifestation of their outer legitimacy, as well. They think that policy objectives are in this way achieved and there have also been taken certain steps to handle the citizens as real clients.

⁴ A case observed by me is self-explanatory: During an interview a colleague of my interviewee entered the room with a file in her hand and asked her to handle the case with special attention. She emphasized her request with a smile and with the tone of her voice.

4.2 Budapest 11th City District Municipality (Újbuda)

The 11th District Council of Budapest has also undergone some reforms that were implemented to improve quality and effectiveness of service provision; however, the changes are detectable rather in the front office buildings and office infrastructures, than in the organizational features.

After entering the building the visitor faces a huge lounge, where administrators' desks are located and where clients are waiting. They are asked to come to the desks according to their line number. The local Social Office has consulting hours three times a week, during the other days these desks of the lounge are used by other municipality departments.

Division of work in the social office is unique and interesting. There are street level bureaucrats, who are contacting clients and doing the formal checking of applications, but they submit only approximately 80% of the cases to street level bureaucrats with higher status, who are working one floor higher in office rooms and have rarely personal contacts with the clients. In the case of the remaining 20% of the files the decision is made by the employees contacting clients, who are also entitled to do it and to submit these files for subscription to the executive of the Social Office. This mixed system is both a consequence of shortage of places in the consulting lounge and that of the introduction of the expert system. Employees are considerably motivated 35-50 years old women and men (less in number) who are using their possibility of discretion mainly in favour of clients and according to their opinion about equity and justice.

This municipality bought a readymade software in 1999 –it was being tested for two years in Debrecen⁵ before– to replace the existing administration system based on DOS operation. The new expert system is not an integrated part of the municipality IT system. A very important fact to be considered in developing this software was that in Debrecen social assistance was provided by employees, who were not civil servants, therefore they were not entitled to decide upon the cases. As a consequence the expert system had plenty of inbuilt barriers, passwords, and restrictions in the access. This is why on taking over the software from Debrecen, at the beginning the employees had the task of learning, how to use the new system while the system itself had to be constantly revised because of the restrictions.

⁵ second most populated city in Hungary

Similarly to the situation in other city councils the system administrator is an external company, but in the present case the connection with the system administrator is even more complicated, since the responsibility for supervising the municipality's IT system is also contracted out. These circumstances make it difficult to communicate and to order changes. That is why the Social Office is used to demand more and deeper changes to be carried out at once.

Due to the gradual curtailment of the expert system, I could observe here just an opposite motion than at the city district council described previously: instead of constant efforts aiming at adjustment and systematic development of the expert system, the software here was more and more neglected and taken for a necessary evil than a helpful tool. Both types of street level bureaucrats in the Social Office admits, that the software does provide significant help, but it is rather a kind of automatization than a supporting tool for the decisions. Furthermore it should be mentioned that the same money transfer application was adjusted here as in the 13th City District. For this administrative help they pay a high price, namely they have to input a lot of data which are useless, and have to fill in irrelevant fields in order to complete one file/case. Therefore this system is considered as a necessary but uncomfortable tool for keeping the administration in order, for avoiding paper work, and for providing the management with information. The director of the Social Office mentioned that a change (a "development") of the software is a subject of bargaining between employers and employees, and curtailments of the system are acceptable for the management as long as the requirements of a clear administration and standard quality of work are met.

The atmosphere around the expert system becomes more colourful if I mention that the employees give various nicknames to the software, they invent jokes and talk to the software. To put it in a very sarcastic way. They keep on asking the software administrator to carry out changes in order to reduce restrictions and controls in the expert system. The changes destroy step by step the system by causing damage and cutback in it. The bureaucrats call this procedure to give a kick to the software and in fact they have managed to 'kick' the system to the edge of the cleft. They say that this system can not serve them any more, and a development of it wouldn't help since a clear, simple and coherent software is needed. In doing so employees are very successful, because the management is deliberating on buying a new expert system. The office staff doesn't know what the future will bring with a new expert system, the current state of affairs is rather the consequence of a not planned sequence of common actions than that of 'strategic steps'.

I was making interviews with both street level bureaucrats consulting clients and with those of higher, and in compliance with my expectations there were differences in their having space for manoeuvring and power.

Bureaucrats, who consult clients and decide only on some of the cases, feel that the appreciation of their work in the Office is lower. Namely after initiation reforms and introduction of expert system they are the only ones now, who do the less challenging work of formal checking of applications, while their colleagues on the first floor are doing the more intellectual, comfortable and less stressful work of 'deciding'. This condition sometimes makes the former ones act rather according to their personal interests, while their colleagues of higher rank remarked to practice discretion almost only in favour of clients. Client consulting employees' main and exclusive source of discretion is that they are those, who consult the clients for the first time, and they are in the position to depict the situation to their colleagues on the first floor. They can also pick out and keep the easy or quite the contrary, just the problematic client cases for themselves.

All the employees revealed, that it was not difficult to convince the boss about their views, consequently, they felt themselves empowered to act accordingly, they considered the director as a partner, whose main role was mediating and communicating the common achievements to the higher management.

The 11th City District is not applying the scrutiny measures that are described in and suggested by the Social Act. The Social Office demands case studies only in extreme and exceptional cases, if they believe that clients try to hide their real living conditions. Furthermore they do not make use of a committee, which is supposed to decide in cases where certain legal requirements aren't met, but the benefit is essential for the client. The Social Office also doesn't check eligibility for grants either, by asking the Tax Office for special investigation. Data available at other municipality offices can not be accessed through the software as a consequence of failing general and integrated municipality-wide IT system, but since all offices are located in the same building and employees know each other, they can immediately help each other in data exchange.

Both The employees and the director think that the new expert system has not brought any significant changes in the quality and in general conditions of work; they only feel the growing workload that they try to overcome by rather making use of the hidden capacities of workers than of the expert system. Clients could sooner discover some changes –in the opinion of employees- mainly in the way how the Social Office treats them. However citizens' impression of being treated as 'adults' and 'clients' like in banks –they say so–, is

rather the result of spatial communication and interior design of the lounge, where they are consulted.

4.3 Budapest 9th City District Municipality

The 9th City District is one of the most developing areas of Budapest, although there is still space for improvement, since this city district has in its territory one of the areas stricken with the greatest poverty. However, this Municipality has the less developed and considering the number of colleagues the smallest Social Office out of the three examined ones. To put it in a sarcastic way the poor conditions of the office building as well as the way clients are welcome correlate with the life of low income families of the district. This Social Office doesn't even have a lounge for consulting clients; bureaucrats do it in their own offices, or simply in the corridor. Although the Municipality has a huge modern front office in a different building in the same street, where people can submit their applications, they are always sent to the Social Office, because there they can be better served by professionals. The street level bureaucrats are here 55-65 years old women, some of them are already pensioners.

This Municipality was the last in the row of the three examined ones to introduce an expert system. Their software was installed in 2003 and it was not accompanied by any change in work organization or in infrastructure. The director of the department presumes that there must have been some kind of corruption at the higher level of the City District Council, since the Office wasn't asked about what kind of IT supports they need. The Office was just granted an expert system and the command to use it. Not only this kind of treatment, but the very poor knowledge in use of computers resulted in fears and opposition against the new system. This kind of approach hasn't changed either so far.

The Social Office is in touch with the software developer, who is helpful, but if a significant change in the system is required, the software company, instead of acting, makes the proposal that the Municipality should buy additional software elements; otherwise the work can not be accomplished. This situation clearly shows the necessity of an own IT staff involved, because in this case the provider company were not able to make use of information asymmetry due to failing computer knowledge of bureaucrats.

The employees consider the expert system as a pure administration system, which may also be helpful when they are editing the resolutions or transferring the sums of benefits, but they admit not to use several applications, because they don't understand them. They think that the

system is replaceable at any time, and the main flow of work keeps on running according to the old paper based administration style. A system administrator access is needed, when they want to open a new client file, so street level bureaucrats have to discuss it shortly with the department leader who gives the permission. The director is using the system for providing the management with statistics, but not for checking her employees, because only in the best scenario the paperwork is followed by the data input. Executive of the Social Office has to warn street level bureaucrats to work with the software, at least they should do it parallel with the manual paperwork.

This City District Municipality is using almost all the tools allowed by the Social Act, e.g. the Committee to give subsidy for reason of equity or the case study to be prepared before providing any subsidies, although both management and employees do not believe in the effectiveness of this latter. The third control tool, that is asking the Tax Office for investigation happens, only occasionally, in very obvious cases of fraud. Discretion of bureaucrats here is coming from all those sources mentioned by theorists in the theoretical part of my thesis. Street level bureaucrats are the ones, who contact clients and they are the ones who decide. They have the impression that their power did not get cut back by the introduction of the expert system, because its practical use doesn't really affect the content of their work. In case of 'problematic clients' they use the function button which says: "any other reasons", and make thereby statistics performed by the software less informative. Peer review serves as main control mechanism, moreover bureaucrats discuss their cases with each other, hence acting in own interests is rather impossible. Their work experience inspires confidence and grants a kind of legitimacy to their acting in the eyes of the director.

Bureaucrats in this Office don't perceive changes in the legitimacy or the organizational performance. The expert system is considered as an instrument, which has benefits and also expenses, but no further significant effects. They think that they are far behind those modern municipalities, and the present state of affairs is shameful –meaning infrastructure, paperwork, lack of integrated data system and the way they welcome clients– but they deem that the quality of their work is of high standard and the way effecting policy objectives stands all demands.

5. Comparative analysis of results

The demonstrated results with different settings and practice of the city district municipalities already show that initial assumptions of this thesis probably prove to be true, however, a sound analysis is needed to exclude other factors that might be responsible for divergent practices.

5.1 Elaboration on structuration

Reforms vs. independent changes

As we have seen, in two out of three cases the introduction of the expert system was accompanied by other changes, let them call reforms. The 13th City District has installed an IT system covering the entire Municipality, office building has been renovated, the way of consulting clients has been changed, work division has been transformed into a new framework and even the director of the social affairs department has been replaced by a new leader.

Changes made by The 11th City District can be regarded as only changes and not as reforms: the building has been renovated, offices have been relocated to operate in the same building and they have also modernised the system, as well as offices for client consulting parallel with buying the independent expert system for the Social Office.

The 9th district hasn't changed anything in the work process and even the expert has not got implemented properly, therefore (and/or consequently) the paper form work process has remained dominant.

To my mind, behind the success of reform and of the expert system in the 13th City District there are the deep and irreversible changes and the pressure coming from the ICT system used council-wide. Certainly it explains only a part of the success, and it can also be stated that an expert system as a structure is not able to determine actions and actors by itself.

Initial or continuous reforms

In the theoretical part I mentioned that according to Orlikowski shaping of structures happens not only at the beginning of implementing a new technology, but it also keeps on running, continuously. The example of the 13th City District shows, that the expert system has brought different new structure and norms into the work of bureaucrats, but at the same time

it itself has also been shaped by employees, who using certain applications, an reject using other ones, or from time to time they start their work without the expert system to keep the possibility of their discretion. Consequently they are pursuing a steady modification of the system all the time with help of IT staff and the software developers. In practice of the 11th district initial and later shaping is also detectible, however it happens in a less effective⁶ way. In this case the expert system determined the spectrum of actions that could be done, but later on the bureaucrats shaped these restrictions by modifying the software. Although there has not been any significant change in the software of the 9th City District after the initial period, the low grade of embeddedness of the expert system in the work process prevents me from taking it for a clear example of the contrary notion.

To conclude, theory of structuration which claims the continuous nature of changes is supported also by results of this field study.

Structuration or else

One might argue against the structuration theory of Giddens and Orlikowski, mentioning that changes which are irreversible and the structure which has been imprinted, clearly show the explanatory power of approaches based on the structure. However, according to my interviews it become obvious, that users and expert systems were interacting with each other, all the time from the beginning up to the present. The environment, which was encouraging the modification of the software helped this interaction and thereby a successful reform implementation in the 13th District, in contrast with in the case of the two other examined municipalities.

We can also take the example of the 11th District Municipality, where the initial situation, the restricted manoeuvring space determined by the software was not accepted long, although bureaucrats were forced to use it, and they did so. Beyond employees' 'practical consciousness' their 'discursive consciousness' led them to change their behaviour and begin bargaining for changes. After a longer process, now they reached the point where the software can not fulfil the expectations of the purchaser municipality, therefore a new expert system has to be bought and installed. Although the old software could be upgraded, the milieu of opposition and lack of trust would destroy these developments, as well. In chase of purchasing a new software managers will also have to deal with these organizational habits.

⁶ It can be said that their work process is less effective, because –as it turned out from the interviews- they use much of their energies to fight against the expert system.

The case of the 9th City District Council can also be described as an interaction between actors and systems (users and software). In this case, however, it became clear, that employees of the Social Office are elderly women with lack of computer knowledge, but with experiences of decades long work under the old conditions. These users are less willing to carry out the same work by fulfilling the requirements of the new work processes demanded by the expert system; therefore they make effort to avoid using it.

How did users shape the technology and how did the modified system affect them?

Orlikowski argues – as mentioned in the theoretical part – that users can shape the technology and so the structure through three ways: by adding features, using or not using particular applications and by modifying the software installed.

In all three municipalities I was told that social offices themselves have to arrange the transfer of financial support to the recipients, as well. This situation wasn't known by any software developers before, so they had to attach a new feature to each expert system, which was dealing with payments and money transfers. This new feature served as an additional guarantee that employees will use the system in any case. Although we have seen that in the 9th District it only prevents employees to neglect completely the use of the system, in the other two cases it really helped to make the expert system more helpful and effective. The practice of the 13th District is rich in these kinds of positive examples, because the existence of the integrated municipality system evoked plenty of opportunities and ideas about how to make use of information available online.

Using or not using certain applications of the software also shaped both the structure and the actors. For example, the software were programmed according to regulations (Social Act, Personal Data Protection Act) of the relevant legal domain, so programmers expected municipalities to use all the tools and control measures allowed by law, such preparation of field studies before subsidizing, control investigations to be carried out by the Tax Office or invitation of committees for deciding about equitable subsidies. However, none of the three examined municipalities used the tax control and only the 13th and the 9th District Social Offices applied preliminary checking of clients by arranging field studies. They deviated occasionally from their general practice and made use of additional tools, therefore the supporting features couldn't have been removed from the expert system. The failing data concerning the result of field studies, committee comments and Tax Office report, made expert systems confused, and so that they were not able to make proper suggestion for decisions.

Bureaucrats in the 9th City District Social Office were not only shaping the ‘technology-in-practice’ by not using certain parts of it, but they neglected almost every important parts of the system or they feed in –if at all– data with delay, making thereby the decision supporting side of the system useless.

The most expressive example of modifying technology was the practice of the Social Office in the 9th District. They purchased software, which was originally meant to handle the domain of social assistance among radically different conditions (non professional employees) in Debrecen. In order to attach the system to local conditions in Budapest, the Social Office removed restrictions in the access as well as other features of the system, thus they were practically converting a real decision maker/supporter expert system to an administration system that also supports some decisions.

Orlikowski lays special emphasis on the structuralist argument, which says that the shaped technologies are also affecting users. For example, in the case of the 13th District bureaucrats are continuously developing their expert system. By acting in that way they accept the system and shape it to obtain finally their own unique tool. This means they are establishing the culture of constant changes and making the system become a fundamental element of office work. And similarly, -although with negative results- their colleagues in the 9th District are insisting on working in the old style by avoiding typing the data into the expert system, whereby they loose real administrative or legal help.. For bureaucrats in the 11th District’s Social Office a cutback in the function of the expert system means growing power and more possibilities for discretion and finally a confirmation of their legitimacy and status.

As it can be seen, the presented examples also support the structurational notion of interaction emphasized by Orlikowski.

Predictable outcomes or too many combinations of use

Orlikowski’s work represented a novelty in the literature of structuration. According to former notions structure-agent interactions were regarded as predictable. Orlikowski argues that they are not predictable due to the great variety of possible combinations in use of the technology’s applications.

This observation also proves to be true in the introduced Hungarian cases. The point is not only whether the various features and applications of these expert systems can or can not be used, also the modification of the system results in unpredictable combinations which can cause thousands of outcomes. For example nobody might have thought that for the 9th District

Municipality expert system will primarily mean money transfer software and thereafter a simple database that only needs to be fed by bureaucrats.

Current changes shape later ones – provisional technology in use

An actual change in practical use of technology always affects the following changes as well, because it reduces the number of opportunities for the next decision situation. The 11th City District Municipality, for example deleted the function ‘social committee’ because its questions always had to be answered and filled in, although they didn’t employ social committee for deciding on equitable subsidies. This decision, however, made it impossible to make a good use of the database for statistics, since easy and complicated cases (which could be labelled/indicated in the ‘social committee module’) could not be differentiated any more. Furthermore, the removed restrictions, that enable the expert system to decide, reduced the possibility to strengthen eventually legal support functions.

5.2 Elaboration on expert systems

Expert systems installed in the field of social assistance in the examined city district councils of Budapest were similar products in the sense that they were able to provide similar legal help according to law, but they were different in their background/history and in starting configurations. The analysis from the aspect of expert systems is interesting, since expert systems serve as the ‘structure’ part of structuration theory in this analysis.

The unique characteristics of the software used by the 13th City District Social Office is its embeddedness in the municipality-wide IT system, accordingly it contains several applications which use the advantages of an integrated system: connected databases, increased communication and statistics, control, and also the spectrum of the later options are wider through these possibilities in the background. Owing to an effective cooperation between the own IT staff and the software developer the system could be changed, modified and through these developments it managed to become an essential and indispensable tool of everyday office work. It is also true that bureaucrats didn’t feed the system with data in cases, when it seemed to be more complicated to use it, or if they wanted to avoid that the system would record processes that a special attention was to be paid to. In simple cases the system was working as a decision making engine, it helped to determine the amount of subsidies, obtained data from various sources and put them into a resolution draft. Bureaucrats especially liked the checklist and other administrative functions of the system, and they did not feel that their

intellectual work had been taken over by a computer. That means the work of professional staff is still essential and can not be replaced, only supported by IT. These findings are in accordance with Swenson's findings on expert systems discussed in the theory.

The special characteristic of the expert system in the 11th City District is that it served first of all as a decision making expert system at the time of installation, since it had a software developed for conditions, where the users are not professional civil servants. Conditions in the 11th Municipality were different and so the functions and the features necessary for the software to make decisions were gradually removed, consequently the system lost the majority of its original features. The money transfer application was attached and various administrative functions were used. All the restrictions that hindered bureaucrats in making their decisions in their own way, were removed. Finally this system, which now can rather be considered as an administrative system, lost its legitimacy totally and there is an intention now to install new software. Obviously it can not fulfil the expectations and serve as a legal support system any more.

The example of the 9th City District Municipality showed that an expert system and the new kind of office operation can not be implemented by a simple act of buying software. This expert system didn't become an essential element of office operation or only to a certain extent: it had the money transfer application which couldn't have been accomplished otherwise. Since bureaucrats were avoiding the use of the system, moreover notifications, or legal warnings provided by the system were neglected through favouring paperwork, the decision making 'automat' didn't take away any intellectual or responsible work from bureaucrats. Subsequently, the system can be labelled as a money transfer system and a client database.

While judging the role of experts systems by the experiences of these case studies, I can agree with Svensson's (2002a, p13-17) conclusion(s), which say that expert systems do help significantly administration of social assistance, however, many reasons hinder them to be able to operate as automatic decision makers.

All interviewees were either satisfied and reported improving indicators, or at least acknowledged the necessity of an expert system owing to functions like decent documentation and archiving, money transfer system and integrated database. From the managerial side a better availability of information was mentioned as a very useful feature of the systems.

However, conditions which hindered the computerization of administration, were also present. Svensson's point concerning juridical objections against expert systems is certainly also applicable for the Hungarian Law and legal decision making. The sociological objection

against expert systems is also legitimate, because none of the investigated expert systems was able to consider as many aspects of one case as bureaucrats do when deciding. The theoretical point, labelled 'practical experience' proved to be valid here as well: expert systems can not cope with difficult/special cases. As a good example it is worth mentioning the 13th City District, where bureaucrats use to avoid feeding in clients' data when they 'smell' complicated cases.

5.3 Elaboration on discretionary power

Elaboration on the definition

In the theoretical parts I was using Lipsky's definition⁷ of street level bureaucracy, however, my practical observations showed that this definition needs to be elaborated. In the case of the 11th and 13th City Districts' social offices there existed different job descriptions of street level bureaucrats, since a part of them -who actually made the decisions- didn't contact clients. This condition is not only important because it implies certain bureaucrats, who do not have one of the most significant sources of discretion, but also because it refers to a change in the style of policy implementation⁸. Although in my study working with a low number of cases I can focus my attention on bureaucrats, who make decisions, while other bureaucrats with different status can also be examined, in a comparative quantitative research it would cause problems, to define exactly street level bureaucracy.

What were the sources of discretion? What has happened with discretion?

In order to analyze changes in the discretionary power of street level bureaucrats of the three Hungarian cases, I am considering the sources of discretion mentioned by Lipsky and Van der Veen discussed by me before.

Lipsky's first main point was that clients are unpredictable, so the work processes of government offices can not be adjusted to needs of various clients by making law, the process of adjusting takes place happens when bureaucrats make use of their discretionary power. In the Hungarian cases this adjusting is also necessary, especially because 18 years ago the country has changed its policies and regulations owing to the switch from a socialistic to a

⁷ Street level bureaucrats are those who are contacting the clients in organizations where public services or other access to the law and government programmes are provided.

⁸ Meaning the different styles of work organization and management, see detailed description in the theoretical part.

market economy. Taking this point of view into consideration the introduced expert systems didn't remove this source of discretion.

The second point of Lipsky, says that street level bureaucrats are educated civil servants and therefore they have to be protected against various types of 'attacks' (coming from the side of politicians, managers or clients). This fact is also valid in the social offices, examined because the lack of democratic traditions creates an instable situation, in which bureaucrats need defence. Bureaucrats have the status of 'civil servants' in Hungary and they enjoy special protection, but they are also subjected to stricter law. According to my observations in the consultation hall of the 13th District Social Office people trusted and respected officers and they didn't behave like clients, who are demanding adequate service according to their rights. It shows also that civil servants might feel power granted by legal protection and caused by 'fear' coming from the client side. In this source of discretion has not happened any change after introducing the expert system. If I compare the most modern way of consulting clients in the 13th with the least reformed system of the 9th City District, no significant differences could be pointed out in this sense, even if the client consulting personnel didn't have civil servant status in the 13th City District. Consequently use of expert systems in the Hungarian practice doesn't affect this source of discretion.

Van der Veen's and Moulijn's first point -that derives discretionary power from uncertain, imprecise and sometimes contradictory legal regulations- might seem not to have changed, since legal systems and general practices change rather slowly. However, if I take a closer look at the cases in Budapest, I can see that the applied expert systems are reducing the possibilities of combinations that bureaucrats can make by applying and preferring different regulations in favour of a particular client. Expert systems are, at least in the two districts, where they are used for a clear documentation of cases, hindering several practices what bureaucrats had before. Therefore, I consider this source of discretion as one which has become narrower, and consequently it diminishes the manoeuvring space of street level bureaucrats.

Complexity and structure of organization –as a further source of discretionary power mentioned by Van der Veen and Moulijn– is especially concerned, when organizational changes and adaptation of a new expert system take place. The general trend in Hungary – following the western practice from a distance– is that municipalities are restructuring their service provisions, they are creating front and back offices, promoting horizontal communication between their organizations, and integrating their data systems. This trend is detectible in the 13th City District, but only to a certain extent in the other two examined

municipalities. Yet this direction of changes and developments will followed, because only the very practice of the 13th District can be considered sustainable and successful.

These kinds of reforms are decreasing complexity of organizations by cutbacks of hierarchical levels and bureaucratic procedures and by promoting information flow and by giving more opportunity for control, whereby this source of discretion is loosing ground, as well.

Observing settings at the district councils from a third viewpoint, namely from that of the circumstance, that street level bureaucrats are the only ones who contact clients, discretion is becoming reduced again. According to my observations in the field, decision maker street level bureaucrats are less and less likely to meet clients. Managements try to make use of bureaucrats' core competences (educational background, experiences, knowing regulations) and rather set up front offices where lower educated/experienced staff can be employed for client consulting. The practice of the 11th City District Social Office by employing client consulting bureaucrats, who also decide in some cases and dispose over special discretion by 'cherry picking', is rather a unique setting.

The fourth aspect of discretion is strongly connected with the third one, since this speaks about contradictory professional and legal standards. For the first look it also seems to be a restricting source of discretionary power, because expert systems are forcing users to respond to rather legal than professional standards. However, results gathered in the field showed that bureaucrats may use or may not use the expert system (see the chapter above), or they can also use it in different ways. Therefore I consider this source as one which further widens the manoeuvring space for bureaucrats.

A further opinion can be mentioned, according to which there haven't happened significant changes in discretionary power, since street level bureaucrats are always inventing new tricks to keep their power. The practice that bureaucrats don't input data in the expert system in special cases is also a good example for a trick.

Nevertheless, new technical solutions and organizational settings also grant new opportunities for manoeuvring. For example, the integrated data system of the 13th District Council enabled bureaucrats to search for client data getting thereby information that can be important for them.

To sum up the findings considering the sources of discretion it is difficult to argue with extreme opinions such as discretion has disappeared or that it has even gained weight. However, the analysis shows that changes have happened parallel with introducing expert systems and new settings in power and relations underline the necessity of professional human contribution in the administration of social assistance. Cutback of discretion happens

in fields, where modern technology and organizational solutions make management control systems tight, while additional possibility for discretion appears, where professional background of bureaucrats is essential.

Individual vs. group discretion

It is also important to reflect here on the notion (explained in the theoretical chapters) of Evans and Harris (2004, p. 10.) which denies that bureaucrats have any discretion. Advocates of this thesis say that because of interrelations among bureaucrats and due to various departmental and group solutions as well as organizational culture, the given manoeuvring space is lessened to a minimal possibility for discretion. According to my observations, bureaucrats do have the possibility of manoeuvring; however, they are not using it for individual interests. They are practicing it alone, but as a group, they share common principles and discuss the cases they have to accomplish. Discretion used for achieving individual goals is restricted by peer control and by norms shared by the majority of street level bureaucrats in an organization. This kind of group responsibility and group discretion can be derived from several conditions: organizational culture, highly motivated civil servants, high reputation of positions, and good collegial atmosphere.

5.4 Elaboration on styles of policy implementation

The findings of the presented theories prove to be valid in the three examined cases, as well. Municipalities have gone through organizational changes and they are applying new technologies in the field of social assistance. These reforms are aiming at a decreased hierarchy and increased information flow, they are also meant to make use of employees' core competences and colleagues' intellectual capacity instead of overloading them with paperwork. Therefore with these new, but still changing settings municipalities have moved from the rather bureaucratic style of implementation towards the professional style. Although this professional style seems to be stable, in the middle or long term expectations the third, managerial style of policy implementation could play an important role. Installing expert systems and other management control systems is namely pointing towards this direction of changes. Certainly, there are several factors and circumstances that describe the practice of municipalities, but there could be a label put to each examined municipality according to the dominant features of styles of policy implementation they have in their social assistance: the

9th District's practice is rather a bureaucratic one, because there have been no significant changes made, the office work is determined by bureaucratic processes, paperwork and by vertical communication among the levels in the hierarchy; the 11th District is the professional one with powerful colleagues, who even destroyed the expert system and the 13th District is the closest to the managerial style of policy implementation out of these three city districts, because of their management control system, the horizontal communication and information flow and because of the work division they have.

6. Conclusion

Answering the research questions

After having analyzed the practice of the three city district councils of the city of Budapest, based on the theory of structuration, the theoretical discussion on expert systems as well as on the discretionary power of street level bureaucrats, I will try to give answer to the research questions.

Among similar conditions I have found different solutions, organizational settings, levels of efficiency and power relations of bureaucrats in the examined municipalities, which had introduced knowledge based supportive software to support daily operations. I concluded therefore upon these findings, that my initial assumption (visioning different settings in similar context as a consequence of technique-user interaction) proved to be true.

I have to add though, that the significance of the factors responsible for outcomes can be questioned, because while in the 13th City District Municipality there has been a deep reform implemented, that is true only to a certain extent in the 11th City District's Social Office, and no real reengineering of the organization has accompanied the introduction of the expert system in the 9th City District.

One of the supportive sub questions of the research question was to find out, what new roles and tasks of street level bureaucrats have emerged after introduction of expert systems. Since the practice showed three divergent settings, it is difficult to give a precise answer. However, after having analyzed the changes in the sources of discretion, we can forecast that more and more emphasis is given to the professional character of bureaucrats, that means, their responsibility and deliberation is desired. In this extent we can speak about a general trend.

The second sub question asking, whether discretion of street level bureaucrats has disappeared, was clearly answered by the analysis: while some sources of discretion become hindered, other sources are leaving more space for manoeuvring for bureaucrats. For the question asking where did decision on specific cases appear, I can answer that basically it remains the responsibility of street level bureaucrats, who were made free from administrative loads, such as client consulting, or it was sent to a committee which was deciding on equity cases.

Whether or not expert systems take over bureaucrats' responsibilities was asked by the third supporting question. Agreeing with Svensson's (2002a) practical findings on MR-systems, the introduction of knowledge based expert systems are accompanied by new job descriptions and changes in responsibilities, but it can hardly be considered as downgrading of bureaucrats. In the Hungarian cases, as I concluded earlier, there were sources, which became stronger in the discretionary power, however, in other fields, now there is less space for manoeuvring for bureaucrats, hence we can not speak about clear trends.

Conclusion regarding the applied theories

I have found that various kind of interactions between the expert systems and users have significant effect on the applied software and on bureaucrats using it; consequently it also affects the organizations, and the discretion of street level bureaucrats. Reforms completed in the municipalities, which included introduction of expert systems have not brought changes only in the initial periods, but later as an ongoing constant process they were shaping the structures. The practical examples also show the faithfulness of the structuration theory in the sense, that the direction and the outcome of the changes are not predictable.

Although all the three examined cases were quite different in organizational settings and in the role/power of bureaucrats, and I assume that it wouldn't be hard to find several other solutions by examining more cases, bureaucracies, which are administrating social assistance, have several common features such as operating in hierarchies along bureaucratic procedures.

Furthermore, my findings support the notion which claims the necessity of human decision making in fields such as social assistance, because expert systems can not deal with many conditions, and so human action is desired. In addition a question arises for the next decades, whether we can speak about classical street level bureaucrats if these officers don't consult clients personally any more. This dilemma can also enlighten the phenomenon of changing discretionary power from another viewpoint.

As it has been enlightened already in the elaboration on theory, usage of expert systems as decision making machines is impossible and undesired because of objections coming from various aspects. Basically we can state that the arguments supporting necessity of professional humans are the very reasons of the failure of expert systems in decision making. As a consequence (experienced also in the Hungarian cases) expert systems work as technical improvements, which support the administration, serve as a checklist database, as archive and as a management control tool. However, as a fundamental part of daily operation expert systems played an important role by determining processes, and by being part of constant improvement. These findings of mine are covering the expectations of the theory of expert systems presented earlier.

Conclusions concerning practice of public administration

In the analyzed cases we can even say that extension of power and professional discretion is supported by the government, since contrary to several other countries, the administration of social assistance is a municipal duty. That implies that the government prefers having a human service provision adjusted to local conditions, which can be realized by leaving manoeuvring space for street level bureaucrats. However, the heterogeneous administration of social assistance is not efficient, because citizens can not be well informed about benefit packages and way of administration at other municipalities, as well as they can not choose from public service providers. Since local happenings gain mostly only local publicity, poor public administration performance is not being punished. Central administrations however (possibly with outsourced duties) are forced to provide the same quality of service. Certainly my remark now deals only with this particular aspect of trade-offs between centrally or locally administrated social assistance.

Introduction of expert systems and parallel organizational reforms have in one of the analyzed cases improved efficiency, but hardly or completely not in the other two cases. It means, that by installing knowledge based decision supporter software nothing can be said concerning the outcomes, without knowing the organizational context. Furthermore as I have mentioned, complete reforms appear to be successful than changes made without strategic consideration. These findings serve as a base when making my proposal for governments: Central governments should monitor reforms being initiated in certain fields by public administrator agencies, and provide them with the best practices gathering and analyzing.

As it became evident in the analysis of the Hungarian cases, the special legal status on every position in the public administration is not necessary, and what is more it can hinder efficiency. Thus there is a need for reforming the rules of employing people in the public administration in Hungary. Two main reasons are supporting this finding of mine: First, according to the findings, the clear bureaucratic style of policy implementation does not exist any more, at least in the domain of social assistance, and second, reforms, novelties as well as expert systems make the work more diverse by demanding positions with separate responsibilities according to core competences.

Although this research has shown only a slow change in role and discretion of street level bureaucrats and a moderate use of expert systems in decision making, it is possible that in countries, where social assistance is centrally administrated and one supportive software system is used (like in Germany), outcomes of a research such as mine might find radical changes when analyzing street level bureaucrats' discretion. This master's thesis could be extended with a research focusing on the above mentioned case of centrally administrated social assistance and so these studies could be a starting point of a quantitative analysis with several cases from countries with western traditions.

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