Interpretative IS Evaluation: Results and Uses

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Abstract: One major reason for doing evaluations of information systems is to take actions based on the results of the evaluation. In order to make better use of interpretive evaluation processes in practice we need to understand what kinds of results such evaluations produce and the way that the results are used to be transformed into change and betterment in the organisation. We have developed, applied and studied a methodology in support for doing interpretive evaluation. In the paper we report the case of a performed action research study that has comprised an IS evaluation. Through this action research we have transformed the theoretical principles of the interpretive approach into a useful evaluation methodology in practice. The main emphasis in this study is on the results and the uses of the evaluation process. We make a brief theoretical overview of interpretive principles for IS evaluation and of the research on evaluation use, from the field of evaluation theory, and represent a framework for analysing influences from evaluation efforts. We use this framework to analyse and identify the results and uses of the performed evaluation in order to shed light on what kinds of results that interpretive evaluation may offer. We experienced the influence framework useful for locating and understanding the variety of results from interpretive evaluation processes. We conclude with a model depicting results and uses from interpretive IS evaluation processes. The main point we elaborate on in this paper is how evaluations influence the actions taken in the organisation in order to establish betterment. How people in the organisation use evaluation in order to establish betterment and change. Further we bounce back the insights on evaluation results and uses into the discussion on how to design interpretive evaluation processes and how to design evaluation methodology in support for those processes.

Keywords: IS evaluation, evaluation process, evaluation results, evaluation use, interpretative evaluation methodology

1. Introduction

One major reason for doing evaluations of information systems is to take actions based on the results of the evaluation. Results from evaluations form a base of knowledge that is supposed to be used to plan and perform knowledgeable actions by individuals in the organisation.

Evaluations of information systems can be performed through different approaches and methodologies and consequently evaluations aims to fulfil different kinds of purposes and produces different kinds of results (Lagsten and Karlsson 2006). The interpretive evaluation approach has been reported as a capable evaluation approach with important implications for practice (Symons and Walsham 1988; Symons 1991; Avgerou 1995; Farbey *et al.* 1999a; Hirschheim and Smithson 1999; Walsham 1999). There is a growing body of work on interpretive IS evaluation, but as Introna and Whittaker (2002) put it "most of the interpretive work on IS evaluation is interpretive in its evaluation of empirical studies, but more limited when it comes to describing IS evaluation *as* interpretation". This paper concerns the use of interpretive evaluation methodology in support for doing evaluation as interpretation.

Walsham (1999) and Hirschheim and Smithson (1999) address the problem that there does not seem to be much evidence of extensive use of interpretive evaluation approaches in practice although the approach seems well founded academically and theoretically to offer potential advantages (such as stakeholder commitment, learning opportunities). Walsham suggests that the non-use might be explained by a lack of knowledge in the IS field of the interpretive approach or that such evaluations brings into light problems that is normally hidden leading to anxiety and fear. The non-use might also be due to organisational-political motives. Hirschheim and Smithson suggests that the wide use of formal-rational evaluation methods could be explained by the ritualistic value the organisation achieve by adopting scientific (positivistic) methods and that those methods offers a rhetoric that reconciles the lack of rationality in decision making and the responsibility of the decision maker.

We suggest that one reason for the low-use is due to poor understanding of the results and uses of interpretive evaluations. The interpretive evaluation *process* is of course important to study and conceptualise, but we want to move beyond a limited process focus and direct attention to its results and uses. In a pragmatic vein, we want to study the interpretive evaluation process in the light of its uses and results. In order to do this we will provide an illustrative analysis of results and uses of a performed evaluation. In this analysis we apply a framework, from the area of evaluation research, which categorise

different mechanisms through which evaluations may achieve influence. We approach the studied evaluation from its use and consequences in the organisation, from the perspective of usefulness, which is an intentionally pragmatic stance towards knowledge and understanding. “In a nutshell, the overriding issue for pragmatists is whether or not something, be it philosophical assumptions, methodology, or information, is useful in the sense that the something in question is instrumental in producing desired or anticipated results” (Goles and Hirschheim 2000). We think the analysis will help practioners and researchers to better understand the interpretive evaluation process and contribute to better use and usefulness of interpretive evaluations in practice.

In this paper we do several things. First we make a brief overview of principles of interpretive IS evaluation in section 2 and then of the research on evaluation use where we represent a framework for analysing influences from evaluations (section 3). We shortly report the case of an action research study that has comprised an evaluation based on interpretive methodology (section 4). We use the influence framework to locate and elaborate on the results and uses of the performed evaluation in section 5. In section 6 we present a model of interpretive evaluation results and uses. We close the paper with making conclusions on how we can use conceptions of evaluation consequences in order to establish better interpretive IS evaluations in practice.

2. Interpretive IS evaluation

In the litterateur on IS evaluation there has been several calls for interpretive methodology and researchers has suggested principles to guide interpretive evaluation processes.

Avgerou (1995) suggests a dialectic approach to undertake evaluation processes that are recognised as interpretive and political and put forward following guiding principles:

- The task of the “evaluator” is to organise and support a dialectic evaluation process, to asses methodically aspects of the system under evaluation as seen appropriate by stakeholders, and to inform about issues which, although significant according to the IS literature, might have been ignored by the participants.
- The evaluation process is participative, allowing all stakeholders to express their views and supporting them to defend their position.
- The criteria of evaluation are determined by the context and include all the concerns of the stakeholders.
- The objective is to reach consensus decisions about future systems developments, either by accepting and possibly modifying plans and proposals for new systems, or by learning the lessons of past experience.

According to Avgerou the proposed approach takes into account actions of different agents and establishes a collective responsibility for information systems changes and questions the validity of the projects initial objectives.

Jones and Hughes (2001) propose an interpretive approach that emphasises the situatedness of social action and knowledge. They argue that the social interaction and actor perception plays an important interpretive role that should be obtained and valued in the evaluation process. They characterise the interpretive evaluation process to be concerned with the context in which IS evaluation takes place, that it engages with stakeholders in process to understand assumptions and views. Furthermore the interpretive evaluation seeks multiple-stakeholder subjective views and that the process is recognised as social and political.

Additionally Jones and Hughes propose guidelines for practitioner action that maps onto the characteristics of the process:

- Articulate the importance of the stakeholder view by appointing a facilitator to elicit the views and concerns of stakeholders so that these can be disseminated. Use methods in practice similar to the GT method which provides a set of procedures for the articulation analysis and dissemination of a grounded view of stakeholders.
- Expose and document these grounded processes.
- Through seminars and group discussion expose the underlying assumptions and values.

The framework of Content, Context and Process (CC&P) (figure 1), introduced by Symons 1991, has been proposed as an analytical tool for interpretive IS evaluation. The CC&P framework elucidates the elements of IS evaluation and support the researcher with a theoretical framework for analysing evaluation in a specific context (Serafeimidis and Smithson 1996, Symons 1991, Walsham 1999). The framework can act as a foundation for discussion of the various aspects of IS evaluation in its organisational and business context (Serafeimidis and Smithson 1996). It has, for example, been used to analyse case studies in order to explain why an implementation of a new evaluation approach failed (Serafeimidis and Smithson 2000).

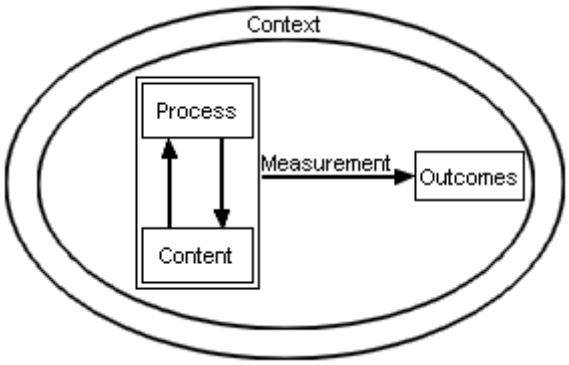

Figure 1: The elements of evaluation (the CC&P framework) (Serafeimidis and Smithson 1996).

It has been argued that the CC&P framework has implications for practice but, from our point of view, the framework is suited for analysing and understanding practical situations but is of less use when it comes to guiding evaluators and practioners in the practical art of doing evaluation. Further, the framework gives no guidance on the important matter of how the evaluation process works in order to realise betterment (the outcome box in the framework is not connected to the context in some way). As we see it, the betterment realisation process that is supposed to follow from the evaluation comprises (at least) two stages; results and effects. Firstly, there are the immediate results that are produced within the different evaluation activities; these are the direct outputs from the evaluation, the results. Secondly, there are the effects that these results have on peoples thinking and doing and further onto the wider organisation environment; these effects could be recognised as the outcomes of the evaluation. It is the effects, or the outcomes, that are the reasons for why people engage in evaluation efforts.

3. Learnings from evaluation research

In order to better understand the way evaluations are used, and how evaluations influence on people and organisations, we have turned to the literature in the field of evaluation research. Evaluation research has developed as a field from the need of evaluating public programs of social change (within schools, health-care, and welfare enterprises) in order to show if services and improvement efforts were succeeding (Stufflebeam 2001). According to Henry and Mark (2003) is social betterment the ultimate purpose of evaluations and refer to improvement of social conditions. We agree that the concern for social betterment lies behind the widespread purposes of evaluation: to inform decision making and to improve the subject or program under study. Farbey et.al. (1999b) points out that IS evaluation has a lot to learn from the field of evaluation research and state ”If IS are complex and pervasive socio-technical systems whose life extends over several months or years then IS investments can be seen as social action, based on complex technology and taking place in substantial period in time. They are thus like programmes of social action which are the subjects of evaluation research”.

Alkin and Christie (2004) organize the field of evaluation research within three main branches; use, methods, and valuing. Evaluation use has traditionally been regarded as the use of evaluation findings (in the evaluation report) for 1) *instrumental use* – findings lead to immediate actions for example program change or termination 2) *conceptual use* - or enlightenment, refers to the general learning that takes place by taking part of the evaluation findings 3) *symbolic use* – the justification of the purported rationality of an agency (Mark and Henry 2004). More recently *process use* has been added to the uses of evaluation (Patton 1997; Russ-Eft *et al.* 2002). Process use differs from the use of findings in that it refers to uses that arise from the participation in the process of evaluation (Mark and Henry 2004). Process use also indicates the perception of evaluation as an intervention with its own set of processes, outputs, and outcomes.

The instrumental use of evaluations, or the implementation of evaluation results, may not follow a straight path forward to change and betterment. “Most studies that examine the consequences of evaluation find the same thing: that decision makers seldom use evaluation evidence as the basis of immediate decisions”

(Weiss 2004). Weiss continues with saying that the times when evaluations tend to influence is often due to that the evaluation evidence strengthens already hold beliefs of decision makers or legitimises prior opinions. Sometimes evaluations can give directions in situations when the organisation is facing a crisis and no one is sure how to proceed. Occasionally new administers comes in from outside and is receptive to negative findings and new ideas.

We think that the perception of evaluation as an intervention with its own procedures, results and effects will help us to better locate and understand the way evaluations can produce change. When we perceive evaluation as intervention we take into account the influences that the evaluation activities has on people in the organisation. In section 4 we present our process model of evaluation, in line with the interventionist view, with four interrelated phases: initiate, arrange, evaluate, change & develop. These phases are processed by people participating in evaluation activities and conversation around the object of evaluation. While the evaluation precedes different kinds of results steam out from the conversation involving actors in the organisation; insights are given, understanding is raised, concepts are defined, situations are identified, misconceptions are articulated, agreements are held, purposes and objectives are negotiated, conclusions are drawn, actions are planned and taken, language and grammar for the conversation is developed. The evaluative conversation influence peoples thinking and actions and produce change on different levels in the organisational practice. Henry and Mark (2004) have developed a framework (Table 1), based on empirical investigations, of the mechanisms through which evaluation may achieve influence and changes. It includes three levels of analysis, individual, interpersonal and collective; the levels indicate the locus of the change mechanisms.

Table 1. The mechanisms and outcomes of evaluation influence (Mark and Henry 2004).

	Level of analysis		
Type of process/outcome	Individual	Interpersonal	Collective
General influence	Elaboration Heuristics Priming Skill acquisition	Justification Persuasion Change agent Minority-opinion influence	Ritualism Legislative hearings Coalition formation Drafting legislation Standard setting
Cognitive and affective	Salience Opinion/attitude valence	Local descriptive norms	Agenda setting Policy-oriented learning
Motivational	Personal goals and aspirations	Injunctive norms Social reward Exchange	Structural incentives Market forces
Behavioural	New skill performance Individual change in practice	Collaborative change in practice	Program continuation, cessation, or change Policy change Diffusion

The mechanisms are classified into four processes. General influence processes are fundamental architecture of change, likely to set into motion some change into the cognitive/affective, motivational or behavioural processes. Such processes can occur at all three levels, they are not likely to be important as change mechanisms in isolation but are of interest because the may stimulate outcomes of greater practical interest such as changes in beliefs and feelings, motivations and actions. Mark and Henry mean that the processes lead to one another and could trigger a cascade of changes in the organisation. Evaluators can, for example, benefit from the framework to better capture and plan for the consequences of an evaluation by identifying pathways of socially mediated changes that the evaluation process and findings set into motion.

The individual level refers to change in the thoughts or actions of one or more individuals, when a difference in question takes place in one individual. The source of a change in attitude could be the elaboration that is done by reading an evaluation report carefully or by participating in dialogue about criteria for the evaluation object. This change in attitude could emphasize individual aspirations and trigger behavioural changes in practice.

The interpersonal level refers to change brought about in interactions between individuals. Evaluation findings could work as authoritative arguments in persuasion processes when trying to change attitudes and behaviours of others or justifying held positions. Evaluation findings or processes can stimulate individuals to rise to action as change agents.

The collective level refers to the direct or indirect influence on the decisions and practices of organisations. This level is involved when a change process or outcome operates in the aggregate social organisational body as a formal policy change.

4. The evaluation study

Our study concerns the design of methodology for interpretive evaluation of information systems. The emerging methodology is called VISU (Swedish acronym for IS evaluation for workpractice development).

4.1 Study procedure

In our action research study (Susman and Evered 1978) a methodology for interpretive IS evaluation has been designed and tested during several cycles of use. VISU has been refined in several stages (Lagsten 2005) and built originally on constructivist evaluation (Guba and Lincoln 1989), Change Analysis (Goldkuhl and Röstlinger 2005) and an explicit pragmatic knowledge perspective. Constructivist evaluation contributes with principles on stakeholder perspective, dialectic process and stakeholder generated criteria. Change analysis contributes with methods and modelling techniques for capturing, modelling and analysing problems, strengths, goals and change requirements as well as guiding principles on participation. The pragmatic perspective emphasises that the evaluation knowledge created during the process is intended to be used for transformation of the studied problematic situation. Confer the notion of inquiry in Dewey (1938).

VISU is designed for taking into account, and make use of, process results of an evaluation. The principal approach is to ensemble concerns of all stakeholders of the information system in systematic dialogues. This is done by the use of dialogue-seminars. A dialogue-seminar can be compared to a focus group were a special set of questions are addressed and examined by a stakeholder group. The principles of interpretive IS evaluation (section 2) are incorporated in VISU through various components. Figure 2 presents the process model of VISU.

INITIATE	ARRANGE	EVALUATE	CHANGE & DEVELOP
Identify preconditions	Make entrance Understand the practice Create a model of the evaluation object Identify stakeholder groups Identify possible uses	Carry out dialogue-seminars with different stakeholder groups Analyse activities, problems, strengths and goals Identify change needs Shape change measures Joint valuation Make completions	Use evaluation results Report and inform

Figure 2: Process model of VISU (Swedish acronym for IS evaluation for workpractice development).

The VISU approach originally emerged in a study of project evaluation at the Swedish employment agency (Lagsten, 2005). Later it was transformed into an explicit IS evaluation approach (ibid). VISU has been tested through the use of the methodology in performing evaluation of the information system Procapita (supporting social welfare services) in a municipality in Sweden. Procapita is an off-the-shelf system from a large Swedish ERP vendor and is in use by approximately 150 municipalities in Sweden. In this studied municipality the system is used by 350 social workers (case handlers) in their daily workpractice with case handling. The clients of the service are adults or children who have difficulties in organising a normal life (due to drug-abuse, violent behaviour, insufficient provision etc.). Case handling includes writing field notes, document investigations, take decisions on measures, assess measures and take decisions on placements in institutions and residential care. The social workers carry out 40%-60% of their working hours throughout Procapita. The system has been in use in this authority since 1999.

One of the authors has had the role of the evaluator in the study. Techniques used to capture results and uses are questionnaires to participants in the evaluation, interviews and participative observations.

4.2 The evaluation

In the initiation phase the evaluator, the IS manager (assigner) and the IS operations manager together identified and defined the situation. A preconditions document were formulated and worked as a mutual commitment for the evaluation. The precondition document defined the evaluation object, the aim of the evaluation, the questions that the municipality wanted to resolve through the evaluation and the evaluation

method. The main question for the IS manager was if it was about time to terminate Procapita or if the current system satisfied the organisational needs.

In the arrangement phase an inventory of stakeholders were done. The evaluator put an effort in understanding the practice supported by the system by participating in regular meetings with the maintenance personnel and the social welfare committee, participating in Procapita education, and reading central documents. A theory based model of the case handling practice was created in interaction social workers. The evaluator contacted administrative personnel and managers in order to inform about evaluation activities and organise stakeholder participation in the forthcoming dialogue-seminars. An evaluation board was set up consisting of the IS manager, the IS operations manager and maintenance people. Stakeholders were chosen to participate in the seminars; the choice was based on their crucial interests in Procapita and on the possibility to get answers to the evaluation questions.

In the evaluation phase 16 dialogue-seminars were held. The stakeholders represented were users (five different user groups), unit managers, maintenance, and IS management. Each group (3-7 individuals) had two seminars taking two hours in general. Central organisers of stakeholder concerns are four specific VISU-questions elaborated in the seminars: What do you do while using Procapita? What problems do you perceive? What good does the system do for you? What are the goals you try to achieve? The VISU-questions are other than the evaluation questions and worked as tools for gathering information to answer those.

Every seminar was documented in a working report articulating stakeholder concerns and issues arranged by activities, problems, strengths and goals. In between the first and second seminar every participator got the report by e-mail, in the second seminar the group made refinements and validated the report. All reports were successively published on the intranet. Altogether there were about 70 individuals participating in the evaluation process. Paralleled with the ongoing dialogue-seminars the evaluation board interpreted the reports and transformed them into change requirements.

After the dialogue-seminars were carried out the evaluator analysed the working reports according to statements on activities, problems (400), strengths (50) and goals (70). The analysis was done, to a large degree, with the use of analytical tools from Grounded Theory (GT) (Strauss and Corbin 1998). For each stakeholder group an account was written. After having identified change needs for the different stakeholder groups, the thorny task of identifying and formulating change measures weighted together and aggregated for all stakeholder groups were conducted. A range of change measures were identified and described under following labels: 1) Wash away usability problems from the interface 2) Develop adjusted education 3) Develop conceptual models for cases and registration 4) Demand bug-free versions and fixes from the vendor 5) Establish an arena for communication between practice and maintenance 6) Explicate the interface between practice and maintenance 7) Assess and evaluate continuously. An evaluation report were written, the report contained a comprehensive model of the system from a multiple-stakeholder perspective, descriptions and analyses of problems, strengths and goals for the different stakeholder groups. The report concluded with the identified measures and a discussion on the initial evaluation questions. Seminars were held to discuss the findings. The IS manager has got the assignment from the social welfare committee to write a detailed plan on how to act upon the findings and the knowledge produced in the evaluation.

5. Analysis

In this section we employ the influence framework to analyse the results and uses that were identified during and a short time after the evaluation. The purpose here is to illustrate different influences from the performed evaluation on an individual, interpersonal and organisational level. The analysis is based on statements from participants (via a questionnaire), and on interviews and observations during the process.

5.1 Individual

General influence	"It has contributed to reflective thinking about Procapita." (User) "You get to learn new ways and shortcuts on how to handle Procapita." (User) "I think we shall benefit from this way of working in our practice" (Manager) *Commentary:* The dialogue-seminar joins stakeholders in reflective thinking and elaboration on Procapita. Due to the evaluative dialogues users get more aware of the system and their perception of system features in the workpractices as well. Participants develop new knowledge and skills through sharing experiences on handling Procapita. The way of working in the seminar becomes as well new skills for evaluative inquiry.
Cognitive and affective	"It becomes an opportunity to stop and reflect about strengths and betterment issues." (User) "It's more obvious now which problems that are general in Procapita." (User) "It has been a long journey and I have struggled back and fourth with my opinion but now I feel satisfied with the system. It's a good system." (Maintenance) *Commentary:* Participation develops personal standpoints and attitudes on what is god or bad about the system and related routines relative to what stakeholders do and try to achieve in their workpractice. The conversation explicates tacit heuristics when participants explain their standpoints to each other.
Motivational	"It makes clear what issues that is important to go on with. "(User) "A forum for discussion on measures to make it work." (User) "Necessary with more education." (User) "Gives the side effect that we discuss case handling in the group." (User) "It's also fun and educating." (Unit manager) *Commentary*: The evaluative conversation shapes personal goals and aspirations and motivates individuals to go on with specific issues revealed in the process.
Behavioural	*Commentary*: In the second of the two seminars some users reported that they have started to use the system differently due to what they learnt in the first seminar.

Figure 3: Results and uses, individual level.

5.2 Interpersonal

General influence	"Shortcomings and strengths become more evident in discussions with others." (User) "Someone in the group says something that leads to that someone else thinks of a second/third issue and so on." (User) "Everybody has the right to put forth their opinion." (User) *Commentary*: Stakeholders shape more precise accounts of the system in interaction. Minority-opinions are included.
Cognitive and affective	"Gets a joint and overall picture of the system." (User) "The maintenance personnel has adopted a new approach – they have taken on a user perspective." (IS manager) *Commentary*: Stakeholder groups develop local descriptive norms based on a larger picture and mutual understanding. Understanding of other stakeholder perspectives start to influence.
Motivational	
Behavioural	*Commentary*: The evaluation process, and the reading of working reports from the dialogue-seminars, had strong influence on the maintenance personnel who made changes during the process. The maintenance people took on a new role in working groups and started to hand over responsibility (for registry maintenance, corrections, user knowledge) to the case handling practice. Maintenance also made an assessment of a system from another vendor but that system was judged to not have enough support for "heavy operations". Several projects were formulated, some were started during evaluation process: New user roles with routine support Templates New organisation of education Log project Investigation of new module for text editing The maintenance people put forward more precise demands on the vendor and did more careful investigations in ongoing projects. Some fixes were also made in Procapita. It seems like they, through participating in the evaluation process, understood the importance of those needs and changes and got the final motives that made up their minds on which changes to go on and work with.

Figure 4: Results and uses, interpersonal level.

5.3 Collective

General influence	*Commentary*: The social welfare committee has decided that a detailed plan shall be drawn up on how to take care of the findings from the evaluation. The development committee is analysing the evaluation report in order to tighter anchor the evaluation findings to other change measures in the organisation. The IS manager has introduced the evaluation to the vendor; the evaluator is invited to give a seminar on the evaluation with vendor.
Cognitive and affective	*Commentary*: The evaluation has been presented to 10-15 of the largest municipalities that uses the same system. Evaluation of Procapita has become an issue in other organisations.
Motivational	*Commentary*: A month after the evaluation report were delivered the IS manager stated that "we are already in action, the benefits are concrete and the thoughts are used". The evaluation has activated different organisational structures and motivates to go on and make betterments.
Behavioural	Commentary: The IS manager has decided not to terminate the system but to renegotiate the contract with the vendor. The renegotiation has started. The evaluation process gives rise to diffusion in other areas than the focal matters of the evaluation. An information security education for 250 managers within the municipality has been held; conceptualisations produced in the evaluation are used in the education. The IS-manager explained that "the insights from the evaluation gave me the extra strength to negotiate the funding for the education that was not planned for in this budget". Another example is that a new element, evaluation, is now incorporated in the business plan.

Figure 5: Results and uses, collective level.

6. A model of interpretive evaluation results and uses

We found the influence framework to be a useful instrument in order to locate and elaborate on the results and uses of the evaluation. The framework helped us recognise influences from the evaluation on different levels and via different mechanisms. The analysis also brings an understanding on how socially mediated changes set into motion a cascade of changes in the organisation. The framework represents influences from evaluation by starting within the individual body of knowledge and feelings – we recognise this as an important acknowledgement both from this study and from other similar studies that we have performed.

It was sometimes thorny to categorise observations into entrances in the framework, especially to differentiate between cognitive/affective and motivational processes. Maybe the framework is too fine-grained for our purpose. That is why we used the dashed lines to separate between the processes.

As a contribution from our study we have created a model depicting results and uses from an interpretive IS evaluation (figure 6). The evaluation process is a temporary practice related to ordinary continual workpractices. In this case we distinguish several related workpractices as case handling (involves IS use), unit managing practice (includes governance of case handling), IS managing practice and IS maintenance practice. The evaluation practice is concerned with these continual practices and is furnished with knowledge from them through the participating stakeholders. Stakeholders/participants go back and forth between the temporary evaluation practice and their respective ordinary workpractice. They bring experiences from their practices to the evaluation and they gain insights from the evaluation dialogue-seminars which they bring back to their workpractices. The evaluation produces gradually written documentation which the participants also can bring back.

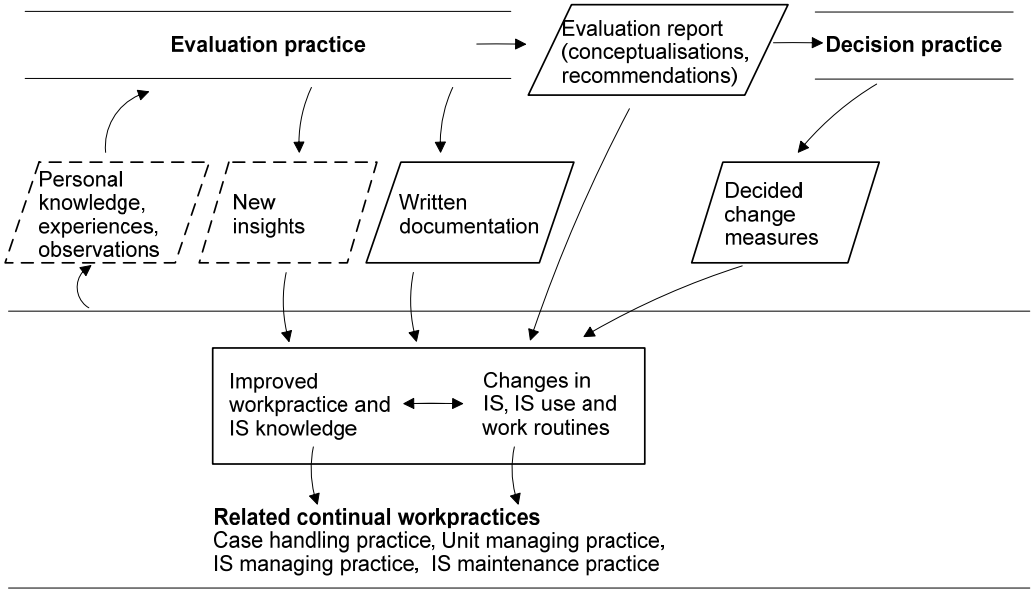

Figure 6: Evaluation results and uses.

Participation in the evaluation yields learning about their workpractice. These new insights may be turned into changed behaviour in workpractices and even in immediate changes in routines, IS uses and sometimes in IS changes. There is a flow of knowledge from the evaluation process to the ordinary workpractices during the conduct of evaluation. People may do not wait until the evaluation process has come to an end and a formal report is written, and formal decisions are taken, to start changing their workpractices. New insights are often imperative to action. People may also bring back parts of the emerging written documentation from the evaluation arena. They may show them to their colleagues and together reflect on possible interventions. What is described here are process uses in the continual workpractices during the evaluation process.

One essential result from the evaluation practice is of course the written evaluation report which comprises documented learnings about the evaluation object and recommendations for future actions. Such report is often handled in some official decision context; we call it a decision practice. Decision makers make deliberations based on the report and produce some formal decisions, which often will be change measures to be implemented in the ordinary workpractices. The decision practice and the continual workpractices are different workpractices, which may explain why not always the decided changes correspond to the

implemented ones. Implementers (from outside and inside the continual workpractices) usually make adaptations of the stated decisions during the implementation process.

In our model we recognise the different types of uses (process, instrumental, conceptual and symbolic) that are represented in the evaluation research literature. Process use is characterised in the flow of knowledge between the temporary evaluation practice and the related continual workpractices and in the transformation of thinking and doing in these practices due to the knowledge that is produced in the process. Conceptual use, that usually refers to that general learning that takes place from reading the evaluation report, is represented both in the learnings due to participation in the evaluative dialogues and due to the reading of documents produced in the process. Instrumental use is represented in the model by the decision practice and the flow of decided change measures into the continual work practices. The symbolic use that refers to the "evaluation ritual behaviour" of decision makers in order to justify the rationality of an agency could be more of an aspect of using the model itself and is not an aspect within the model.

In our model there is a distinction between result and effect. This is an important pragmatic insight made by for example von Wright (1971); confer also Goldkuhl (2005). The result is what is produced through an action and this is what is within the range of the actor. Effects are what arise as consequences through the use and influence of the action results. This distinction can be used to make a "macroscopic" clarification. The evaluation process will create an evaluation report as a primary result for instrumental use. It is important to conceive that uses and effects of this report may be different from what is stated within it. Suggested change measures may be rejected by the decision makers or they may be transformed in the implementation process. However, "microscopic" effects arise already in the evaluation process. Evaluation statements are interpreted by the participants and they bring this knowledge back to their continual workpractices, as described above, and process uses occur.

This distinction between results and effects must also be complemented by the pragmatic insight of action reflexivity (e.g. Mead, 1938; Giddens, 1984; Goldkuhl, 2005). The actions conducted always act back on the actors themselves. There is a natural learning inherited in all action. The actor perceives the result of her action and possible effects of it. Knowledge evolves through action (Kolb, 1984). People learn through participating in evaluation. There are not only external results as produced evaluation statements. Insights among participants arise through the process; both as consequences from listening to the evaluation dialogues and as reflections from their own active participation. As said above, these insights produce process uses.

7. Conclusions

In order to understand the consequences of interpretative evaluation processes we need conceptions on how such processes produces results and how these results are used to be transformed into effects. Conceptions, in the shape of models, frameworks and illustrations help us to recognise how evaluation outputs proceeds into evaluation outcomes. We also need vocabulary and grammar for the consequences of evaluation so that we can talk about those in a comprehensive manner.

We have suggested a model of interpretive evaluation results and uses. The model uncovers the process where evaluation outputs transforms into outcomes. The results and use model is anchored in empirical findings from interpretive evaluation processes and in literature on evaluation, knowledge and change. In our case there is gradual use of insights and documentation during the evaluation process. This may not be the result of any formal decision process. Stakeholders, participating in the evaluation, just start adjusting their behaviour according to their improved knowledge. This new behaviour may imply changes in work routines, in IS use and in the actual information system. There is also a more formal chain of actions; from evaluation to evaluation report and further to a decision practice resulting in formal decisions which can lead to implementation of planned changes in workpractices and information systems.

We think it is important to include awareness and logic about the different type of results and the different type of uses into the design of evaluations, as well as into the design of evaluation methodology. We need evaluation methodology that guides and supports an interpretive evaluation process, that recognises the process as an intervention within its own procedures and results, and that especially acknowledges the process use that take place during the ongoing evaluation. This will help us to better understand and appreciate such evaluation processes for its capability to generate change and betterment. Then, we think, we have improved the opportunities for better use and usefulness of interpretive IS evaluations in practice.

References

Alkin Marvin and Christie Christina (2004) "An Evaluation Theory Tree", *In Evaluation Roots - Tracing Theorists' Views and Influences* (Ed, Alkin M) Sage, Thousand Oaks.

Avgerou Chrisanth (1995) "Evaluating Information Systems by Consultation and Negotiation", *International Journal of Information Management,* 15(6), 427-436.

Dewey John (1938) *Logic: The theory of inquiry*, Henry Holt, New York

Farbey Barbara, Land Frank and Targett David (1999a) "The Moving Staircase Problems of Appraisal and Evaluation in a Turbulent Environment", *Information Technology&People,* 12(3), 238-252.

Farbey Barbara, Land Frank and Targett David (1999b) "Moving Is Evaluation Forward: Learning Themes and Research Issues", *Journal of Strategic Information Systems,* 8189-207.

Giddens Anthony (1984) *The constitution of society. Outline of the theory of structuration,* Polity Press, Cambridge

Goldkuhl Göran and Röstlinger Annie (2005) "Change Analysis – Innovation and Evolution", *Invited paper, 14th International Conference on Information Systems Development (ISD),* Karlstad, Sweden.

Goldkuhl Göran (2005) "Socio-Instrumental Pragmatism: A Theoretical Synthesis for Pragmatic Conceptualisation in Information Systems", in *Proceedings of the 3rd Intl Conf on Action in Language, Organisations and Information Systems (ALOIS)*, University of Limerick

Goles Tim and Hirschheim Rudy (2000) "The Paradigm Is Dead, the Paradigm Is Dead...Long Live the Paradigm: The Legacy of Burell and Morgan", *The International Journal of Management Science, OMEGA,* 28249-268.

Guba Egon and Lincoln Yvonna (1989) *Fourth Generation Evaluation,* SAGE, Newbury Park.

Henry Gary and Mark Melvin (2003) "Beyond Use: Understanding Evaluation's Influence on Attitudes and Actions", *American Journal of Evaluation,* 24(3), 293-314.

Hirschheim Rudy and Smithson Steve (1999) "Evaluation of Information Systems: A Critical Assessment", In *Beyond the It Productivity Paradox,* (Eds, Willcocks and Lester) John Wiley&Sons, Chichester.

Introna Lucas D. and Whittaker Louise (2002) "The Phenomenology of Information Systems

Evaluation: Overcoming the Subject/Object Dualism", In *Global and Organizational Discourse about*

Information Technology, IFIP TC8/ WG8.2, (Eds, Wynn E*, et al.*), Barcelona, Spain, pp. 155-175.

Jones Steve and Hughes Jim (2001) "Understanding Is Evaluation as a Complex Social Process: A Case Study of a UK Local Authority", *European Journal of Information Systems,* 10 189-203.

Kolb David A (1984) *Experiential learning. Experience as the source of learning and development*, Prentice Hall, Englewood Cliffs, NJ

Lagsten Jenny (2005) *Verksamhetsutvecklande Utvärdering I Informationssystemprojekt. (In Swedish; Evaluation in Information Systems Projects, for Business Development),* Licentiate Thesis, Department of computer and information science, University of Linköping, Linköping.

Lagsten Jenny and Karlsson Fredrik (2006) "Multiparadigm Analysis - Clarity into Information Systems Evaluation", *European Conference on Information Technology Evaluation (ECITE),*Genoa, Italy.

Mark Melvin and Henry Gary (2004) "The Mechanisms and Outcomes of Evaluation Influence", *Evaluation,* 10(1), 25-57.

Mead George H (1938) *Philosophy of the act*, University of Chicago Press

Patton Michael Quinn (1997) *Utilization-Focused Evaluation the New Century Text,* 3rd ed.*,* SAGE, Thousand Oaks.

Russ-Eft Darlene, Atwood Regina and Egherman Tori (2002) "Use and Non-Use of Evaluation Results: Case Study of Environmental Influences in the Private Sector", *American Journal of Evaluation,* 23(1), 19-31.

Serafeimidis, V. & Smithson, S. (1996) "The Management of Change for Information Systems Evaluation Practice: Experience from a Case Study", *International Journal of Information Management*, Vol. 16, No. 3, pp205 - 217.

Serafeimidis, V. & Smithson, S. (2000) "Information systems evaluation in practice: A case study of organizational change", *Journal of Information Technology*, Vol. 15, No. 2, pp93-105.

Strauss Anselm and Corbin Juliet (1998) *Basics of Qualitative Research. Techniques and Procedures for Developing Grounded Theory,* SAGE, Thousand Oaks.

Stufflebeam Daniel (2001) "Evaluation Models", *New Directions for Evaluation,* Spring 2001(89), 7-98.

Susman Gerald and Evered Roger (1978) "An Assessment of the Scientific Merits of Action Research", *Administrative Science Quarterly,* 23(4), 582-603.

Symons Veronica (1991) "A Review of Information Systems Evaluation: Content, Context, Process", *European Journal of Information Systems,* 1(3), 205-212.

Symons Veronica and Walsham Geoff (1988) "The Evaluation of Information Systems: A Critique", *Journal of Applied Systems Analysis,* 15.

Walsham Geoff (1999) "Interpretive Evaluation Design for Information Systems", In *Beyond the It Productivity Paradox,* (Eds, Willcocks and Lester) John Wiley&Sons, Chichester.

Weiss Carol (2004) "Rooting for evaluation: A cliff Notes Version of My Work", In *Evaluation Roots - Tracing Theorists' Views and Influences* (Ed, Alkin M) Sage, Thousand Oaks.

Von Wright Georg Henrik (1971) *Explanation and understanding*, Routledge & Kegan Paul, London

