Information Systems Methodologies

Assessment 5

Evaluation of SSADM and ETHICS using NIMSAD framework

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# Table of Contents

1. Introduction .................................................................................................................. 2
2. Outline .......................................................................................................................... 3
   2.1 SSADM .................................................................................................................... 3
      2.1.1 History .............................................................................................................. 3
      2.1.2 Structure .......................................................................................................... 3
      2.1.3 Techniques ....................................................................................................... 4
   2.2 ETHICS .................................................................................................................... 4
      2.2.1 History .............................................................................................................. 4
      2.2.2 Structure .......................................................................................................... 5
      2.2.3 Techniques ....................................................................................................... 6
3. Evaluation ...................................................................................................................... 6
   3.1 The problem situation ............................................................................................. 8
      3.1.1 SSADM ........................................................................................................... 8
      3.1.2 ETHICS .......................................................................................................... 9
   3.2 Methodology user ..................................................................................................... 9
      3.2.1 SSADM ........................................................................................................... 10
      3.2.2 ETHICS .......................................................................................................... 10
   3.3 Methodology ........................................................................................................... 12
      3.3.1 Situation of concern ......................................................................................... 12
      3.3.2 Performing diagnosis ....................................................................................... 14
      3.3.3 Defining prognosis ......................................................................................... 14
      3.3.4 Defining problems ......................................................................................... 16
      3.3.5 Deriving notional system ............................................................................... 16
      3.3.6 Performing conceptual/logical design .............................................................. 17
      3.3.7 Performing physical design ............................................................................. 18
      3.3.8 Implementing design ...................................................................................... 18
   3.4 Evaluation ................................................................................................................ 18
4. Results ........................................................................................................................... 19
5. Conclusion ...................................................................................................................... 21
6. References ..................................................................................................................... 23
7. Bibliography ............................................................................................................... 24
1 INTRODUCTION

The purpose of this essay is to evaluate SSADM and ETHICS system development methodologies using NIMSAD framework. Evaluation will, in addition, consider similarities and differences in structures of both methodologies. The reader is assumed to know about NIMSAD framework and its elements and stages. A brief overview will be given before the evaluation to refresh readers’ knowledge. It is interesting to see from theoretical view what are the similarities and differences between methodologies due to the vast availability of so many different ones. It is worth mentioning that almost every practical use of a methodology modifies it to suit some particular needs of an organization, therefore, comparison as this one, is only suitable for the academic perspective. Any application of a methodology will add elements from other methodologies known to an organization, thus merging concepts of different methodologies, which makes it even harder to be able to make such evaluation and comparison. For this assay, both methodologies are taken as they are described in educational books, which is seldom a case in industrial applications. In order to be able to make evaluation and comparison of applied methodologies in industry, an extensive knowledge of that particular application would be needed.

This essay is divided into three major parts, where “outline” chapter would guide user through structures of chosen methodologies, giving basic overview. Evaluation chapter will go in details of evaluations of the methodologies using NIMSAD framework, going element-by-element, stage-by-stage, highlighting how methodology copes with that specific aspect and giving additional thought on consequences of the results. Results chapter will collect all the major points, identified in the evaluation chapter and try to present it to the reader in the most convenient way to summarize the results and ideas in previous chapters.
2 Outline

2.1 SSADM

2.1.1 History
According to (Avison & Fitzgerald, 2006), SSADM is a blended methodology, because it contains parts of other methodologies (i.e. Prince method). Evolution of SSADM began from traditional approaches to software projects that were used to create computerized models of administrative functions for organizations. The focus of traditional approaches was to mimic functions of manual systems and deliver an electronic infrastructure for these.

In the work of (Press & Constantine, 1979), where author expressed his criticism, in particular that traditional approaches were monolithic, redundant, inconsistent, ambiguous and difficult to maintain, against traditional approaches, more modular approaches took place, where the aim was to split the whole system into blocks of self standing part of the whole system.

After a while, Learmonth and Burchett Management Systems (LBMS) and the Central Computing and Telecommunication Agency (CCTA) started developing SSADM in order to standardize and structure existing techniques.

SSADM was promoted by IEEE to become a standard for system development.

2.1.2 Structure
SSADM suggests seven stages within a five-module framework that covers life cycle from feasibility to design study. This structure provides its own set of plans, timescales, controls and monitoring processes.

Stage 0 goal is to examine feasible options to be able to select an optimal one later.

Stage 1 reassesses scope of the project and logical model is constructed.

Stage 2 analyses business systems options and most relevant system is chosen after the preceding negotiation with the management.
In Stage 3 detailed requirements for IS are defined.

Stage 4 and Stage 5 are performed in parallel, where appropriate hardware and software environment is selected for the new system and relevant constraints are identified, while Stage 5 specifies how the system is supposed to work.

Stage 6 converts specified logical design to physical environment and configures final product according to the environment.

2.1.3 Techniques
SSADM offers both diagrammatic and non-diagrammatic techniques to its users.


2.2 ETHICS

2.2.1 History
ETHICS was developed as a participation methodology, which pays attention to people and procedures in an organization. In other words, methodology tries to achieve balance between three factors, namely, technology, people and organization to bring efficiency and satisfaction within work situation. ETHICS approach learned from past failures of other methodologies to consider technical and economic factors during applications. ETHICS, thus, recognized the importance of change within an organization and its effect on the business. The solution was to promote high degree of participation during development process. During the early days of the information revolution, ETHICS was concerned with the impact computerization could have on the employees and their job satisfaction. (Leitch & Warren, 2010)
ETHICS philosophy constitutes an ethical approach to systems design because of the user involvement in the process. (Mumford, ETHICS: User led Requirements Analysis and Business Process Improvement, 1997)

Earlier versions of ETHICS methodology contained seven stages, which later were extended to fifteen stages in order to take into the account such factors as availability and reliability of the proposed systems.

2.2.2 Structure
According to (Singh & Wood-Harper, 2007), ETHICS objectives include: 1. Enable future users to play major role in systems design; 2. Ensure that new systems are acceptable to users; 3. Assist users in developing skills for managing organizational change.

(Leitch & Warren, 2010) identify fifteen stages of the methodology:

Stage 1: Determine whether change is needed.

Stage 2: Identify boundaries of the system to be developed. (Systemic properties)

Stage 3: Determine how existing system operates based on sequence of events within the system.

Stage 4, 5, 6: Based on analysis of the system, determine key tasks, objectives and information needs of the system.

Stage 7: Determine hypothetical weak links in the existing system. (Diagnosis of efficiency needs)

Stage 8: Determine users perception of the current system in relation to job satisfaction. (Questionnaires) (Diagnosis of job satisfaction needs)

Stage 9: Analysis of future system requirements.

Stage 10: Prioritize/rank/weight objectives based on analysis of stages 7, 8 and 9.

Stage 11: Develop design of the system based on issues identified in previous stages. (i.e. efficiency, job satisfaction)
Stage 12: Determine technical aspects of the system, including such issues as hardware, software, HCI, etc.

Stage 13: Prepare system plan in more detail.

Stage 14: Implementation.

Stage 15: Evaluate the new system with regards to its requirements.

2.2.3 Techniques
(Bednar, Sadok, & Shiderova, 2014) imply that ETHICS and SSM share a set of techniques available for systems analysis, such as CATWOE, PRQ and Rich Pictures.

(Bergvall-Kåreborn, Mirijamdotter, & Basden, 2004) specify which terms CATWOE represents: Customer, Actor, Transformation, Weltanschauung, Owner, and Environmental constraints. Authors say that mentioned terms occupy central role during modeling that help to bring out problem situation issues and question our assumptions.

As (Garlick & Leonard, 1997) put it, Rich Pictures is a rather simple tool that reflects views and opinions of actors within the system under consideration. These multiple views are then combined to convey systems picture to analysts.

3 Evaluation

Before the evaluation, it is worth defining NIMSADs’ elements in greater detail both for readers’ reference and for a smoother transition from descriptive outline of chosen methodologies to the evaluation.

As mentioned in the introduction, the NIMSAD framework is divided into four elements. Overall aim of the framework is to assess means of a specific methodology towards problem situation. NIMSAD is a problem-independent, methodology-independent and supplementary framework that is to be used by a specific methodology user in order to be able to assess his actions towards problem at hand. While methodology provides a step-by-step prescriptive analysis and,
later development, of the system, NIMSAD gives methodology user the means for critical analysis of the problem situation, the methodology user and the methodology itself.

In particular, the forementioned elements are:

1. “The problem situation” (methodology context) considers the action world within an organization thus splitting action world and thinking world apart. The reason for inclusion of problem situation in the framework is to be able to analyze what information is being used by systems users and how it is being used to be able to reason about effectiveness of an information system in an organization. In other words, methodology user must understand organizational activities. Another crucial aspect of problem situation is to be able to identify the client and distinguish problem owner(s) within the problem situation.

2. “The intended problem solver” (methodology user) forces the methodology user to be critical about personal judgment towards problem situation, avoiding possible implicit or unconscious choices, which may put the analysis or development in jeopardy.

3. “The problem-solving process” (the methodology) contains 8 stages within 3 phases that together utilize systemic properties to solve a problem. The element ensures that methodology user derives understanding of situation of concern, abstracts essential elements that will be used in deriving a solution and understands reasons for states within situation of concern. In addition, the element will make methodology user aware of his gaps of knowledge of the situation of concern, reveal possible misunderstandings that occurred in the process and provide basis for further activities.

4. “The evaluation” of elements 1, 2 and 3 is performed in sequence of 3 levels: before intervention, during intervention and after intervention. Evaluation enables methodology user to measure the effectiveness of the results from previous elements.

This short description of the NIMSAD framework will guide the reader through the next sections of the actual evaluation of the chosen methodologies and will serve as a reference point to identify exactly which aspect of an element the evaluation considers.
3.1 The problem situation

In order to understand organizational activities and propose a relevant system for an organization, methodology user must work with systems users (problem owner(s)/problem perceiver(s)/client(s) and collect an extensive knowledge about activities within organization. In addition, problem solver must build relationships with the users of a system in order to be able to get an overview of a problem through the direct perceivers of that problem. (Jayaratna, 1994)

3.1.1 SSADM

At stage 0 (feasibility study), methodology assumes that a project that would facilitate change in an organization is already identified in strategic planning stage, which methodology does not mention, putting the responsibility upon the organization and its commonly practiced planning phases. (Aggelinos & Katsikas, 1993) In such a way, methodology draws a lower boundary on its prescriptions. This lower boundary definitely does not provide means (steps) for understanding organizational activities prior to feasibility study. This should be seen as a major shortcoming, because problem solver should be guided through building the knowledge about an organization, whether problem solver is internal or external actor to a particular organization.

As mentioned by (Hußmann, 1997), methodology performs a separate business-oriented system analysis phase. Separate, in this context, could be substituted with ‘disjoint’, since it is up to the professionals, with specific, business-oriented skills to be able to analyze a business-oriented system. NIMSAD implicitly agrees that the methodology should not go much in detail about the analysis of the particular problem situation, because, in case of complex industrial enterprise, steps of any methodology may be insufficient to be able to make a sophisticated analysis of the problem situation of such an organization.

Since the whole aspect of organizational analysis is missing, it is appropriate to assume that the methodology omits the identification of client(s), problem owner(s) within the problem situation. It is not explicitly distinguished whether the ‘separate business-oriented system analysis’ is responsible for these identification activities. (Jayaratna, 1994) mentions that very few methodologies are concerned with client(s) or problem owner(s) identification step within
the problem situation. Avoidance of this step can lead to catastrophic consequences for the problem formulation and solutions formulation made by the problem solver, because, in such case, problem solver is not able to perceive the problem from the problem owners’ viewpoint.

3.1.2 ETHICS
Stage 1 (with self-explanatory identifier: ‘Why change?’) and stage 2 (“System boundaries”) can be viewed as a threshold prior to the process of knowledge acquisition of organizations processes and activities. User participation at this stage ensures that the Design Group will be able to capture relevant to problem situation issues that prevent systems users from doing their job-related tasks as desired. Since the participants of the Design Group members are elected from the pool of representatives from various interest groups within a workplace (Burns, 1999), richer picture of the system will be possible, thus even more extensive knowledge about organizations processes.

As it can be seen, ETHICS methodology carefully approaches problem situation, gathering all possible views of the problem by including systems users with different viewpoints. Only aspect that is not covered by the methodology is the identification of the client(s) and/or problem owner(s) (Baxter, 2011). The lack of identification of important actor(s) for a particular problem situation does not lead the methodology towards inappropriate problem formulation, since this shortcoming is evened by the extensive user-participation in the process.

3.2 METHODOLOGY USER
It is desirable for the methodology user to be able to identify which characteristics of the ‘mental construct’ have the most influence on the sense making or decision-making in an environment. This skill is particularly beneficial when methodology user abstracts the information about a particular problem situation to identify the problem in an organization. This set of characteristics, such as perception, ethics, motives, prejudices, values, etc. would affect methodology users selection of the important elements within an organization. Selected elements, in turn, will make sense of a problem situation and make problem identification simpler. Methodology should be able to guide its users in the process of identification of the characteristics that will be needed when dealing with the problem situation.
Apart from cognitive analysis of the user, methodology must explicitly state what knowledge and skills the user should possess for the effective use of that methodology and explain what role the user must be prepared to take.

3.2.1 SSADM
Perhaps, due to the omission of the analysis of the problem situation, SSADM does not cover the methodology user either as both elements go hand in hand as intrinsic for knowledge acquisition step. The methodology is concerned with formal part of the development process and puts very little attention to the socio-technical part of a system. Methodology recognizes the fact that the interpretation of diagrams is an important factor in delivering the relevant product, but provides not guideline on how to manage the interpretation or perception of various results produced at different stages. Even when it comes to the user participation, methodology prescribes ‘strong’ user involvement where, from experience, problem solver decides what is necessary/relevant and what is not for the system to be designed (Hußmann, 1997). In the light of methodology’s stages, the explanation of what SSADM is, given by (The Government of the Hong Kong, 2012), highlights the essence of it, saying “SSADM is a set of standards and guidelines for the analysis and design of computer systems”. If the methodology is to consider socio-technical side of an environment, organizations that make use of the SSADM, should consider adding supplementary stages that would be dealing with both the user of the methodology and the problem situation.

The concern about the desired knowledge and skills of the SSADM user, methodology does not mention explicitly, but it can be viewed that this responsibility is being put on business analysts and is being regarded as a disjoint context, which takes place prior to the stage 0 of the methodology. The extensive use of the documentation techniques used by SSADM implies that the user is supposed to know how to interpret results of each stage, which would be a major benefit when communicating/proposing possible solutions design to the customer.

3.2.2 ETHICS
(Mumford, Designing Human Systems for New Technology - The ETHICS Method, 1983) speaks explicitly of the role the system analyst must take, in general, analyst is supposed to be shifting
his roles during the process of designing a new system. The roles of the analyst shift between the designer, teacher, adviser, learner and facilitator. This constitutes a wide spectrum of ‘ personas’ that the analyst must be willing to assume, with as wide spectrum of tasks, such as: to consult design groups, help to manage the project, facilitate communication or resolve conflicts. It may seem at first that the methodology covers this element of the NIMSAD framework quite extensively, but it does not speak explicitly on the issue of how to communicate expectations of any of the roles, taken by the analyst to the users involved in the process of designing a new system. Methodology assumes that the role will become apparent to others once it is assumed and a set of expectations would arise automatically. This shortcoming can lead to conflicts between actors, involved in the process of participation, which will have to be resolved by the analyst.

As for the mental construct of the analyst, the name of the methodology: ETHICS, tells that the process of system design must be ethical. One of the characteristics of the mental construct, identified by the (Jayaratna, 1994) is ethics, which is a standard that we expect from persons behavior. By the ethical system design, methodology strives to achieve balance between job satisfaction and effective job environment. This balance can be viewed as a result of opposite forces that try to dominate the environment and gain full control from it to fully satisfy the underlying forces needs. The ethical characteristic of mental construct of the analyst comes into play when complying to the ethics of the methodology. Analyst must be expected to support the values and ethics of the environment, where methodology is being used. In other words, for the methodology to become most efficient in the particular situation, ethics of the analyst, methodology, organization and users must all come in balance. This should be seen as an issue for the actors within the problem situation, because every actor in the scheme would have to sacrifice something in order to achieve this desired balance. The sacrifice may either be a personal motive, need, hidden agenda, or anything else that actors may wish to gain from the environment. Methodology does not go much into details regarding this major issue of achieving a balance in socio-technical environment.

Identification of characteristics of mental construct of the problem solver is affected by the role that is being assumed during the process of designing a system. Analyst is expected to be able
to shift the characteristics due to the shift in the roles that the analyst employs at various stages of the design process. This puts more stress on the political thought processes rather than intellectual thought processes, where the job of the analyst essentially becomes servicing the client(s) expectations from the role currently assumed by the analyst. In the best-case scenario, analyst should be able to adjust his intellectual thought processes as well as political ones, but, as explained by the (Jayaratna, 1994), due to the constant clashes between two thought processes, analyst will be forced to let the political one to dominate his reasoning. This is rather a pessimistic thought, but, as practice shows, at the end of the day, the analyst is there to service the needs of a client, rather than to exercise his own reasoning and cognitive abilities.

The methodology does not explicitly list which knowledge and skills the methodology user must possess, but this can be inferred from the definition of the roles that the methodology expects its users to be able to assume.

3.3 Methodology

Methodology must be able to demonstrate a strong problem-solving ability by abstracting problem situation and mapping various aspects onto systemic properties. This abstraction must proceed with regards to eight aspects, proposed by the NIMSAD framework. This section will guide the reader through the stages of the framework and analyze how prescriptive the chosen methodologies are in regards to every stage.

3.3.1 Situation of concern

3.3.1.1 SSADM

Since SSADM does not prescribe how the formulation of the mental construct is to be structured, the analyst must be competent in identifying where the boundary lies and which elements must be taken from the environment for consideration. It is hard to predict how the analyst will be able to utilize his personal experience in the process of understanding the situation at hand. It is also possible to assume that, since methodology does not guide its user through the process of identification of characteristics of the mental construct, the analyst will
be overwhelmed by the rich array of prejudices, personal motives and values that will have a negative effect on the situation of concern. Even worse, analyst may not even be aware of being affected by these factors, while methodology silently bypasses this issue.

The only chance for this issue to be avoided is if the separate business-oriented analysis process would take care of this factor. Since methodology does not talk about that process, it is not possible to reason about it.

Methodology provides a wide range of techniques for the analyst to be able to reason about the situation of concern, but the methodology user is left alone with the set of techniques, which he may (or may not) be able to use, whereas the methodology does not include any guidelines for analyst to follow in respect to mapping elements from environment onto their corresponding graphical representations.

It can be said, that the methodology is not concerned with who the analyst is, what knowledge/skills he/she may have, what roles he/she assumes or what personal characteristics he/she may have. As long as the analyst is able to represent situation by a set of techniques that methodology offers, then it should be sufficient enough to be able to proceed.

3.3.1.2 ETHICS
ETHICS user, in turn, tries to perceive a situation through the knowledge, perceptions and feelings of people, directly involved with that situation. Despite the fact that the methodology does not explicitly mention how to handle characteristics of the mental construct of the analyst, the direct communication with people involved in the situation makes perception of the environment synchronized, more accurate and removes the chance of conflict that may arise due to the conflicts of perceptions. It can be said that the analyst inherits the boundaries of the situation of concern from the actors within that situation and later boundaries are refined by negotiation of the perceptions of various actors within the situation of concern. This process can be viewed as distributed knowledge acquisition, where all parties are affected and the consensus is reached by the continuous refinements.
3.3.2 Performing diagnosis

3.3.2.1 SSADM
As mentioned in the previous stage, SSADM provides a rich range of techniques, both diagrammatic and non-diagrammatic for the expression of the situation of concern. Methodology does not specify which techniques must be used for expression of which aspect of the situation – the choice freedom is given to the analyst. This freedom may cause problem in case in the analyst is not competent in expressing his perceptions in terms of diagrams or text. Methodology does not say how to deal with such incompetence and does not provide an alternative for users that do not possess the ability of expressing their own perceptions. Since SSADM gives general freedom to organizations where methodology is employed, it is reasonable to assume that the organization must be able to select an appropriate candidate to take the role of the analyst and provide alternatives to techniques if needed.

3.3.2.2 ETHICS
Since ETHICS deals with socio-technical side of the organization, its techniques and tools are different, compared to the ones SSADM uses. Techniques of the ETHICS are there to support the human factor in an organization. Therefore, according to (Burns, 1999), methodology is not prescriptive about its techniques, but rather uses theories and techniques from behavioral sciences, as mentioned by (Olerup, 1989).

ETHICS expression techniques results are dynamic and unreliable, because of the nature of the environment. The more interaction and less formality there is in the environment, the more unreliable results will be from the diagnosis stage. Therefore, analyst must be prepared to constantly update the perception of the system or to make the understanding of the system as general as possible, extracting the backbone of the processes (which are relatively static) and stripping down all the dynamic behavior of the situation.

3.3.3 Defining prognosis

3.3.3.1 SSADM
As it is being put by (Chemuturi, 2013), SSADM provides techniques that accurately specify business and system requirements. Methodology expresses desired situation as a set of
requirements, where requirements represent the desired state of the system. Thus, requirements are gathered after the desired state is defined, which methodology does not cover, but jumps directly into the definition of existing problems. It can be argued that SSADM allows analyst to accept the desired state as it is ‘imagined’ by the client, rather than to come to the definition of the desired state by reasoning. Due to the skipped stage, the designed system may come out as irrelevant.

In addition, (Jayaratna, 1994) specifies that additional factors may prevent diagnosis changing into prognosis, namely, the lack of elements identified by the analyst in previous stages and/or inappropriate organization of the identified elements. Methodology does not consider such cases, which is a plausible outcome, since the stages that are concerned with identification of elements are not guided by the methodology either – an extensive path is missing by the SSADM, which most certainly may lead to a disaster.

3.3.3.2 ETHICS
Methodology seeks to discover what is the desired state of the system and compares extracted information with the existing system in the design process. This is achieved through participants’ expressions in the participation process, where specifications of the existing problems and needs are gathered and agreed upon. Prognosis is achieved after steps 4, 5 and 6, where key objectives and tasks are listed and the key information needs are enumerated. Due to the nature of participation when reaching for the definition of prognosis, an extensive examination of the desired state is performed and consensus is reached. This examination helps to evade the possibility of developing irrelevant solutions, since problem owners, representatives and problem solver together agree on the desired state of the system. This brings back the fact that the end-user is the most knowledgeable in their job specifications and requirements (Elliott, 2004) and, despite the disadvantages, this knowledge should be used in prognosis definition and other stages.
3.3.4 Defining problems

3.3.4.1 SSADM

Problem definition in SSADM is conveyed to the system options via investigation of the current environment at the requirements analysis module. Methodology promotes acceptance of the desired state of the system and tries to fill in the current situation with the additional elements (or reorganize the existing elements) to reach that desired state. The lack of critical analysis of the problem situation propagates all the way until the logical system design module, therefore methodology is forced to accept the problem as it is and progress further to the specification step. (Hußmann, 1997)

As opposed to the ETHICS methodology, SSADMs system analysis lacks crucial steps of critical assessment of the existing system. The obvious consequences of the attitude methodology has towards the systems’ analysis implies poor management of the situation of concern, which leads primarily towards irrelevant target system.

3.3.4.2 ETHICS

Due to the fact that the methodology performs diagnosis and prognosis, the natural way of problem definition is to identify the difference between the current state of the system and desired target state (Jayaratna, 1994). ETHICS, by the means of participation, reaches the point when questionnaires are used to facilitate problem identification without the actual reasons for these problems (Adman & Warren, 2000).

ETHICS does a good job defining problems within a problem situation, which constitutes a rich ‘ad-hoc’ system analysis, where all actors implicitly identify where the actual problem lies within existing system.

3.3.5 Deriving notional system

3.3.5.1 SSADM

When the turn comes for systems specification, SSADM comes into the play fully equipped, presenting methodology user with a variety of the techniques to choose from. The only problem here is that the non-experienced user, in theory, should be confused by how non-
prescriptive the methodology had been until this stage and overwhelmed with unmanaged personal biases and prejudices that lead him/her to making, possibly unreasonable, decisions until now.

In case if analyst is mentally strong and is capable of handling the situation prior to specification, then, by proceeding further, he/she will be guided thoroughly until the implementation stage.

Requirements specification in SSADM is dealt with in detail so that no mistakes will propagate to the later stages due to the insufficient attention at early stages of systems design.

### 3.3.5.2 ETHICS

(Elliott, 2004) writes that ETHICS is useful in analyzing and establishing requirements and that the methodology ensures that users are satisfied that their requirements are met. The methodology sees requirements rather differently than SSADM. For ETHICS, requirements are deeply rooted into the balance of employees and organizations requirements, satisfaction of both sides. As the aim of the methodology is not necessarily to produce a computer-based system, due to socio-technical nature of the system, methodology seeks to achieve the desired balance between social and technical side in an organization. It can be said that there is no actual documentation of the specifications, because such factors as a) alternative approaches with the aim to optimize work situation, b) possible technology options considerations, c) conflicts resolution, cannot be modeled as there is no modeling technique that would be able to fully capture the social aspects of any system.

### 3.3.6 Performing conceptual/logical design

#### 3.3.6.1 SSADM

With the use of available documentation techniques, methodology can potentially provide actual systems implementers with a comprehensive set of documents and diagrams for detailed and almost automatic implementation possibilities. It is the job of the analyst to be specific and brief when documenting the desired system.
3.3.6.2 ETHICS
ETHICS does not offer any practical help on the implementation of the proposed system; even the notional systems definition is partly a problem for the methodology. This is a direct result of the type of the system ETHICS is designed to deal with. Social systems require more psychological change than the physical or technological one.

3.3.7 Performing physical design

3.3.7.1 SSADM
Physical design is omitted by the methodology, while this stage is passed on to the external or internal implementers of the desired system, where the documents produced at various stages of the methodology will guide towards designing the final system.

3.3.7.2 ETHICS
Same as for the conceptual/logical design, methodology does not speak of the physical design of the desired system. It might be assumed that the methodology is employed to negotiate the conditions of both organizations and employees desires to maintain the balance, where such negotiations take place in the presence of the design team and the analyst as a facilitator.

3.3.8 Implementing design
None of the methodologies perform the implementation of the results produced at previous stages.

3.4 Evaluation
The evaluation of results, produced at all steps, can be evaluated using the diagnosis on the implemented desired system, to see whether it maps one-to-one to the previously compiled prognosis. While ETHICS has an explicit stage for the prescribed evaluation, SSADM regards the desired system to be complete after the conceptual models construction phase. Therefore SSADM may be regarded as incomplete, while ETHICS advises its user to make the evaluation, but does not prescribe any means for doing that.

As another point of view, since methodologies perform in an iterative fashion, the evaluation may be considered as an implicit process, where users feedback acts as an acknowledgement.
and an evaluation process. If this is true, then this might be a better way of performing evaluation of implemented desired system, since analyst is relieved from the duty of analyzing the system again. The rationale behind that may be the fact that after an extensive amount of time spent designing the new system, analyst may become ‘hardwired’ to his prior decisions and not willing to take another look at the system any more.

ETHICS methodology performs evaluation only at one stage, namely, after intervention, while the before intervention evaluation may be considered as system analysis for both methodologies and during intervention may be reduced to reasonable, logical and meaningful decisions of system analyst. If that is the intention, then both methodologies perform their evaluations at all three stages identified by the NIMSAD framework.

4 Results

All in all, there are major differences between the two methodologies. Apart from their distinct ideologies, methodologies differ in ways they approach any given situation.

First, when looking at the problem situation and the problem solver, ETHICS dives into the subjective reflections acquired from actor involved in that particular situation, performing well with regards to the analysis of a problem at hand and a user of the methodology, whereas SSADM does not consider analyzing the both elements of the environment at all, referring frequently to the separate business-oriented system analysis phase, which does not appear in the context of the methodology. None of the methodologies, however, provide guidelines for the political interactions between the user and the actors within the environment. Not much attention is given to the personal characteristics of the mental construct of the methodology user, which are extensively described by the author of the NIMSAD framework.

Second, when the turn comes for the problem solving process, methodologies shift their attention to various phases gradually. ETHICS begins a smooth transition from the analysis of the problem situation to the identification of the actual problem within the environment and then slowly fades away close to the construction of conceptual models for the fulfillment of the
derived prognosis. SSADM, in turn, ascends rapidly at identification of the conceptual models stage. This is a result of the main differences between the two methodologies, where one, SSADM, is hard, rigorous and structural, while another, ETHICS, is soft, people-oriented and dynamic.

Identified varieties of discussed methodologies and corresponding consequences for the situation of concern that were randomly mentioned throughout the evaluation can be summarized as: for any of the two methodologies

1. client identification to support the identification of the relevant desired system
2. management of the personal characteristics that will contribute to the rational decisions of the problem solver
3. appropriate element identification within an environment that both will not complicate the system perception and will encompass the problem that lies within that environment
4. correct interpretation of the desired system
5. correct and complete representation of the existing/desired system
6. implementation of the desired system

, where the overall picture of how well methodologies perform with regard to the points identified, can be represented diagrammatically.
5 CONCLUSION

From the results chapter it can be seen how one methodology is different from the other and where similarities of the both can be found. Since both methodologies have different focus, it is expected for them to have great variations in regards to the aspects of the problem situation. These variations can be seen from the graph, where one methodology focuses on one side of the systems development, while another is concerned with other aspects. It can be inferred that the chosen methodologies were specifically designed to put their attention to particular sides of the development process (which again can be seen from the graph). No methodology can focus on all aspects of the system development process, because methodologies should be comprehensible to their users, easy to learn and easy to use. In the opinion of the author of this essay, any analyst or organization that thinks of which methodology to select for a particular problem situation should think of developing similar graph, which would compare methodologies using NIMSAD (or any other) framework, and, based on the results, choose the most appropriate methodology for a particular situation.
This essay should have given the reader overview of the two methodologies as well as the structure of the NIMSAD framework, shown how the framework can be used for the evaluation of methodologies with corresponding explanation of why a particular methodology is compliant with elements/stages of the framework or why not. Then, this essay should have given some information about how results from various elements/stages of the NIMSAD framework could be assembled together in order to deduce whether methodology passed the evaluation of the framework or not. This particular question is left alone for the reader to decide whether chosen methodologies passed or failed the NIMSAD evaluation.
6 References


7 BIBLIOGRAPHY


