

# A Reflection on SSM as a Critical Social Action Research Method: Towards Improvement of Project Governance

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**Abstract:** Academic research is often regarded as less than helpful for practice, while knowledge practitioners are accused of failing to apply relevant research in their industries. This study successfully bridged the theory-practice gap in that it resolved a real-world problem and added to the body of knowledge, i.e. it aided to: identify underlying social root causes of a flawed project governance process and associated decision support software; define actions for improvement; and realise generalisable theoretical and applied knowledge to improve both theory and practice. It illustrates that collaborative academic research adds value to both academia and industry. This paper discusses an empirical study where soft systems methodology (SSM) was applied as an interventionist action research (AR) method, positioned in the critical systems thinking (CST) and critical social research (CSR) paradigm. SSM is defined as a learning system that facilitates the identification of actions for improvement of problematical social contexts—it gives epistemological guidance to systematically explore perspectives of individuals involved in and affected by social (e.g. organisational) settings, to identify actions for improvement. However, SSM is found to be most often applied interpretively by academia, i.e., to understand a problem context, rather than to improve it, and by practitioners as a consulting tool. SSM successfully facilitates exploring of problematical social contexts, but, according to users of it, fail to effect real and lasting change. It is also quite difficult to extract generalisable learning from its output. In this study, the researcher argues that SSM have the potential to live up to its original intent. So, she positioned SSM in the CST/CSR paradigm by applying an enriched version of it. She guided participants to reflect on inherent flaws in the scrutinised project governance business process and associated decision support software. Hence, by applying methodological pluralism, she also guided them to reflect on actions for change in light of the organisation's socially constructed structures and their effects on involved and affected stakeholders of the process. SSM was enriched by also reflecting on the output of facilitated workshops, which aimed to identify required transformation to improve upon deficient project governance, from the perspectives of: the role of the participant(s) in the organisation; the effects that identified organisational decisions and changes may have on them; and by asking probing questions about the crux of statements made, e.g. if it is presumed to be true, what would the effect be, or vice versa. The outcome was emancipation, as key underlying social and structural causes for the organisational deficiencies surfaced.

**Keywords:** Critical social research; Action research; Critical systems thinking; Soft systems methodology; Project governance; Project decision support

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## 1. Introduction

Change and adaptation is most often viewed as necessary strategies for survival. Similarly, organisations must continuously adapt, change and transform to survive and thrive—it is needed to remain both profitable and competitive (Grama and Todericiu, 2016, Nadim and Singh, 2019). Organisational transformation efforts aim to improve organisational concerns, e.g., ineffectual business processes and information systems, and/or low productivity. Yet, these initiatives continue to fail. Beer and Nohria (2000) argued two decades ago already that “about 70% of all change initiatives fail.” It seems that little progress has been made since—organisational change efforts remain problematic (Ripamonti et al., 2016, McLean et al., 2017).

Checkland (2010) says that change for tangible, lasting improvement requires exploring complex problematical social phenomena that are often at the root of process and systems related organisational concerns. So, when attempting to resolve these, identifying and resolving the underlying (social) causes should be the first priority. It requires an understanding of the social (human) affairs and interactions causing process and systems issues (Checkland, 2010, Checkland, 2011). Similarly, Bruskin (2019) found it necessary “to study the almost missing phenomenon of organizational change failure” from the perspective of viewing change as “a natural and normal condition of organizational life”, rather than an outcome of either a number of planned steps executed linearly, or several continuously recurring development cycles.

Academic research has been criticised for having limited use in practice, while knowledge professionals have been criticised for being unaware of relevant research that could benefit their organisations. Collaborative and balanced research integrating practice and theory, that also facilitate practical understanding and appropriate

intervention, can add value to bridge the theory-practice gap (Van De Ven and Johnson, 2006). Action research (AR), when applied as a research approach and from a critical social research (CSR) perspective, can be valuable in this regard. It facilitates: understanding of identified practical problems and their broader areas of concern; planning and implementation of intervention(s) for resolution thereof; and generation of new practical and generalisable academic knowledge (Checkland and Scholes, 1990, Mathiassen et al., 2012, Elg et al., 2020).

Peter Checkland (1981) developed soft systems methodology (SSM) to facilitate the identification of actions to improve problematical social (e.g. organisational) contexts and applied it as an AR method. According to Mingers and Taylor (1992), SSM was developed as a problem-solving methodology that “leads to intervention and change the world”. Checkland (2010) argues that SSM has been applied extensively with great success in organisational and information systems research where the aim was to intervene and improve. Mingers and Taylor (1992) conducted a survey about general uses of SSM—they found that it had been used quite widely by managers, consultants and academics. However, users of SSM seem to regard it as an interpretive method, rather than an interventionist approach (Mingers and Taylor, 1992, Ulrich, 2013, Armstrong, 2019).

Subsequently, SSM is mostly applied interpretively, rather than with a critical stance, i.e. to understand *what* to do, rather than *how* to achieve change—it aids understanding of a problem, yet seems to be inadequate to effect real and lasting change, and hence seems to be inadequate to develop generalisable knowledge. Interpretive research aims to understand social phenomena and human interaction; it does not aim to change or improve a social context (Mingers and Taylor, 1992, Ulrich, 2013, Armstrong, 2019). Contrariwise, AR, when applied from a CSR perspective, aims to identify, explore and resolve problems. So, when SSM is applied as an interventionist AR method, it must effectively enable and facilitate change. For this, it must be applied so as to embrace the principles of the critical systems thinking (CST) paradigm, i.e. critical awareness, emancipation and pluralism.

In this paper, the researcher reflects on the usefulness of SSM to live up to its original intent and bring about desired organisational change. She believes that it can be achieved when positioned in and applied from an inclusive CST and CSR perspective, and by enriching SSM to also consider effects of organisational hierarchical and power structures. She applies methodological pluralism by supplementing the SSM process with reflections on three additional perspectives, as per the work of Ulrich (1983), i.e. considering the role of the participant in the organisation; considering the effects that the organisational decisions may have on him/her; and by asking if... then questions, e.g. if this statement made is accepted to be true, what would the implication be, as well if the statement is untrue, what would the implication be for him/her, as well as for the organisation.

This paper is structured as follows: The theoretical underpinnings of the study are discussed in Section 2. Section 3 outlines the research approach to realise methodological pluralism—the researcher explains the application of methodological pluralism, i.e. the enriched version of SSM as an interventionist AR method. Section 4 briefly explains the research problem and context—it positions the practical problem to be resolved in the broader research context. Section 5 discusses the empirical study, i.e. the application of the enriched SSM. Section 6 discusses the conclusions—it refers to the resolution of the problem, the advantages gained by enriching SSM and the generalisable knowledge extracted. Section 7 gives a summary of the study.

## 2. Theoretical underpinnings

The theoretical underpinnings of this paper are: critical social research (CSR) and action research (AR) as founded in critical systems thinking (CST) for organisational change and learning; and soft systems methodology (SSM) as an interventionist, i.e. a critical social action research (CSAR) method. These are discussed next.

### 2.1 CSR and AR as founded in CST for organisational change and learning

Organisational change efforts continue to be problematic and interventions continue to fail, at great expense to the affected organisations (Ripamonti et al., 2016, McLean et al., 2017, Bruskin, 2019). Practical research to close the theory-practice gap is needed to rectify this—academia should do more collaborative and practical research to benefit industry, and knowledge workers should become aware of and utilise relevant research that benefit their industries (Van De Ven and Johnson, 2006). Interventionist research, e.g. CSR approaches, can be valuable in this regard. These efforts should not be confused with typical consulting, where interventions involve action, but may fail to create lasting improvement. It differs in that CSR brings about practical improvement, as well as extraction and abstraction of explicit research lessons—it facilitates intervention, and also yields generalisable practical and theoretical learning (Checkland, 2011, Mathiassen et al., 2012, Elg et al., 2020). Interventionist CSR

is founded in the CST paradigm and thus aims to remove oppressing structures so as to emancipate the oppressed. Emancipation is achieved in the CST paradigm by means of awareness and pluralism. CST entails a philosophical framework that facilitates social and human improvement through critical and social awareness; and methodological and theoretical pluralism—it is dedicated to social and human emancipation. It emerged in the 1970s and continues to be applied by problem solvers in various fields (Ulrich, 2013, Irawan and McIntyre-Mills, 2016, Fixsen et al., 2020, Monat et al., 2020).

Critical awareness and emancipation can in theory be achieved by means of practical and consensual discourse, which facilitates understanding and the generation of ideas for change. Critical social researchers ground their work in theory. For this, they often find the work of the German philosopher Jürgen Habermas valuable—he developed and intended his critical theory and theory of communicative action to simplify social transformation, and emancipate individuals and societies by means of rational, practical discourse and democratic, consensual communicative practices (Mingers, 1980, Delanty, 2011, Susen, 2017). However, a problem solver must remain aware that societal (e.g. organisational) knowledge is socially constructed and heavily influenced by external conditions, e.g. hierarchical and other dominating and power structures. Similarly, according to Detchessahar and Journé (2018), Habermas himself found his work to be “incompatible with any kinds of management and hierarchical organizations”. Mere discourse may fail to facilitate full and complete understanding of the external conditions that shaped involved and affected stakeholders’ worldviews and, as such, may thus fail in explaining their actions, and the unintended consequences of their actions, that affect their social realities (Orlikowski and Baroudi, 1991, Scotland, 2012, Susen, 2017). Hence, when attempting to solve organisational problems through CSR efforts, these must be fully understood, planned for and addressed during interventions. Failure to do so will hinder true emancipation and interventions will fail. Interventions will not result in real and lasting change. Even so, the author agrees with Detchessahar and Journé (2018) that practical dialogue is still possible provided that facilitated discussions are managed effectively. Emancipatory discourse can realise, provided that socially constructed structures, and their effects, are understood and appropriately reflected upon (Ulrich, 2013).

Interventionist CSR also requires, in addition to practical and emancipatory discourse, complete understanding of both the practical problem at hand and its broader problem context; the researcher therefore engages in a problem-solving cycle (to resolve the practical problem) as well as a research cycle (to learn about the broader research context) (Van De Ven and Johnson, 2006, Mathiassen et al., 2012, Mattias et al., 2020). The researcher aims to develop insight into the problem situation and broader research context; critique the research situation in order to “reveal the normative basis of the current situation found in the research site and the forms of legitimation that justify the current social order”, so as to set the research approach up around core theoretical concepts applicable to the context; and improve the problem context through transformative redefinition that entails the development of relevant knowledge and practical understanding about the practical problem as well as the applied underlying theories (Myers and Klein, 2011). In doing this, generalisable theoretical and practical research lessons can be extracted, in addition to the problem being resolved.

For this, AR is a practical research approach that aims to: effectively deal with real-world problems; facilitate iterative formulation, implementation and evaluation of actions for change; and promote active engagement and participation of involved and affected stakeholders (Denscombe, 1998, Elg et al., 2020). When applied as a CSR approach it also entails a vital, yet often neglected step in organisational research and change efforts, i.e. extraction and abstraction of explicit research lessons, which enables development of generalizable knowledge (Checkland, 1985, Checkland, 2011). Elg et al. (2020) and Mathiassen et al. (2012) also agree that AR has practical and theoretical value, and generate practical and theoretical knowledge: accordingly, an AR researcher must firstly understand the specific practical problem to be resolved, as well as its general problem context. S/he then develops and implements a practical solution to resolve the problem, i.e. iteratively implements changes, continues to evaluate the effects of the applied changes, and adjusts the approach as required, until resolution. In doing so, both practical and theoretical knowledge that will be valuable to resolve the organisation’s problem, as well as add to the body of knowledge for the research community, are developed.

## **2.2 Soft systems methodology as a critical social action research method**

Checkland (2010) argues that SSM offers practical and theoretical value to (critical social) action researchers and enable intervention in order to improve problematical organisational concerns. For this, he suggests the cyclical application of the FMA framework, i.e. a methodology (M), positioned in a theoretical framework of ideas (F) to resolve an area of concern (A)—it is illustrated in Figure 1 (Checkland and Holwell, 1998).

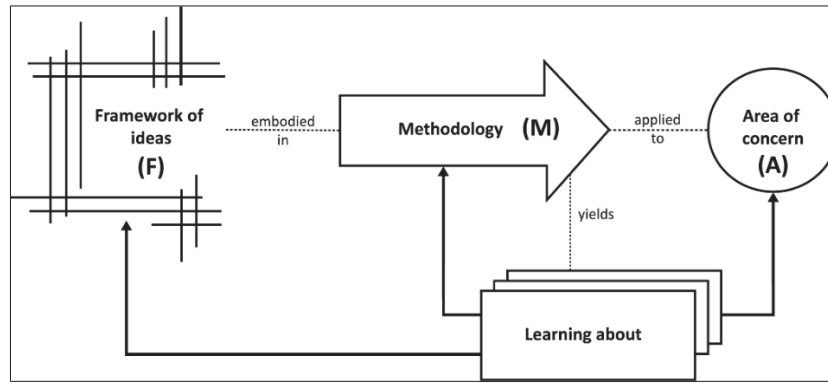


Figure 1: FMA framework, adapted from Checkland and Holwell (1998)

So, when conducting organisational AR, Checkland (2010) proposes positioning it in the FMA framework, with SSM as the guiding methodology (M), and the CST/CSR paradigm as the philosophical framework of ideas (F). SSM is then applied to facilitate discourse about a problem from its historical (as-is) cultural, social and political perspectives, and comparing it to models of an ideal (to-be) world, thus identifying relevant changes to be implemented for improvement—it is illustrated in Figure 2.

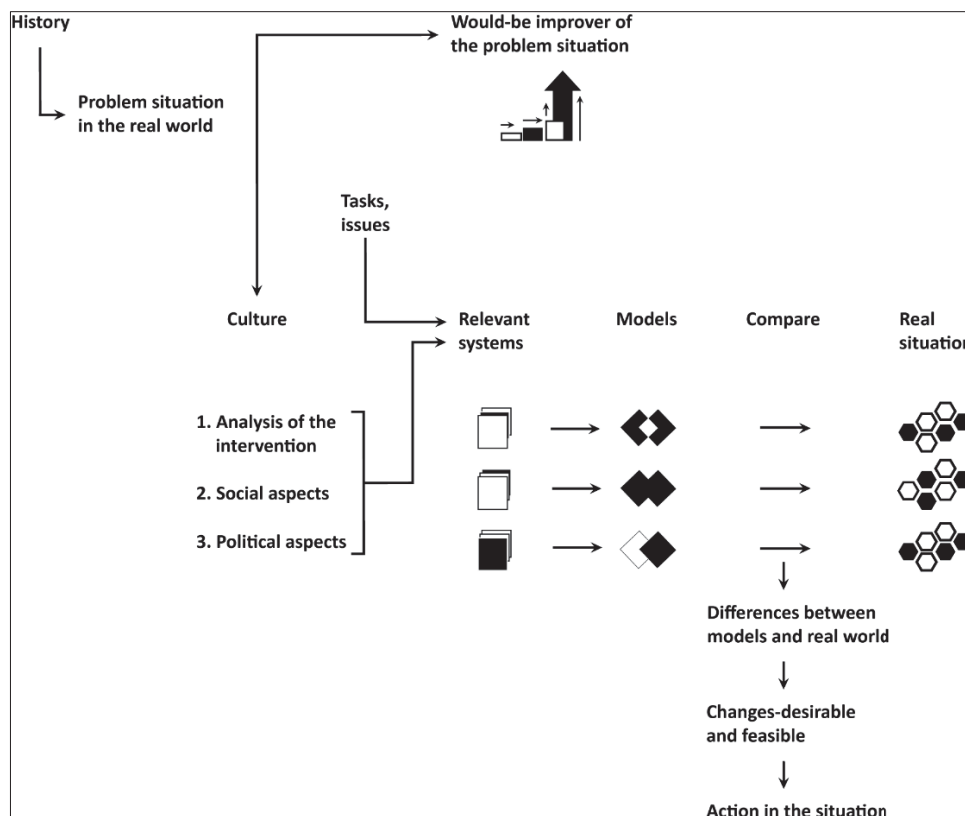


Figure 2: SSM process, adapted from Checkland and Scholes (1990)

Practical and consensual discourse is required to explore and understand these perspectives. Checkland and Scholes (1990) propose the outcomes of these facilitated discussions as “rich pictures” and “root definitions”. Rich pictures are free-hand depictions of participants’ understanding of a problem situation and associated desirable change—it is visual representations of interpreted information gathered during facilitated discussions and/or workshops held with participating stakeholders. Root definitions (RDs) are then derived and outline the identified steps to be taken to reach an ideal (to-be) state. They express purposeful transformation by stating the *what*, *why* and *how* of a transformation, i.e. the purpose that is to be achieved according to a transformation process to achieve required change. RDs are compiled by considering the following: the customers, i.e. those that want/ need change; the transformation, i.e. the required change; the owners, i.e. those with the power to mandate implementation of the transformation; the actors, i.e. those that execute the steps for transformation;

the enablers and/or constraints of the environment to be taken into account; and all relevant, yet diverse, world views of involved and affected stakeholders that shape, e.g., people's individual and collective actions.

Even though Checkland (1985) developed SSM to be an interventionist problem solving approach, and aimed to position it in the CST paradigm, many have been categorising and applying it as an interpretive approach (Mingers and Taylor, 1992, Ulrich, 2013, Armstrong, 2019). In associating SSM with the CST strand that builds on the philosophical stance of Habermas, which aimed to achieve emancipation through practical discourse and consensual communication, the following presumption is inherently built into: the problem solver presumes that all individuals are able to free themselves from all constraints imposed upon them, if they are granted an opportunity to discuss those constraints openly and freely. Scholars working in the CST paradigm, such as Ulrich (2013), criticise such perfect and complete rationality as Utopian, i.e. ideally comprehensive, yet practically unachievable. Rational argumentation can only ever be achieved by a small minority; yet, all relevant issues of those involved in and affected by a problematical social context must be heard when seeking to improve their human and social conditions "regardless of whether or not he is able to argue his case rationally" (Ulrich, 1983).

However, on the other hand, scholars such as Detchessahar and Journé (2018) argue that, even though "the use of Habermas is quite problematic in organization studies—largely because his theory deals with democracies and free discussion, which have been presented by Habermas himself as incompatible with any kinds of management and hierarchical organizations", it remains conceptually practical and useful. They acknowledge that organisations' transformational strategies are not necessarily derived by means of consensual face-to-face dialogue, e.g., non-participation of stakeholders remains problematic and "face-to-face communication is often oriented towards stability rather than change". So, they suggest that "strategic discussions need to be managed to be effective". In managing these discussions, one must also remain cognisant that social (e.g. organisational) contexts are riddled with struggles associated with hierarchy, power and domination, which can cause a number of stumbling blocks. E.g., as eluded to, it leads to non-participation and prohibits a single, consensual version of the truth. Practical and emancipatory discourse can only realise when all involved and affected participants are afforded (and make use of) equal opportunity to present and defend their views, and when socially constructed structures and their effects on all those involved in and affected by them, are fully understood (Ulrich, 2013).

In this paper, the researcher argues that, when formulating emancipatory action for change, it is necessary to remain cognisant of the Kantian principle "of the unavoidable incomprehensiveness and selectivity of every definition of a system, and hence of the need for reflecting on the normative content of the *a priori* whole systems judgements flowing into our systems concepts". And, with this in mind, argues that, in order to be truly critical, the relevant cultural aspects, conceptual models, and desired real-world situation must also be investigated with a single guiding statement in mind: as per the question posed by philosopher Immanuel Kant more than two hundred years ago, i.e. "*How can we rationally identify and justify the normative content of our actions?*" (Ulrich, 1983). Therefore, when facilitating discussions to understand underlying causes of problems and concerns, every statement made by every participant must be scrutinised from at least three perspectives, as per the work of Ulrich (1983), to determine *who* made the statement (referring to the role of this person in the organisation); *why* s/he made the statement (referring to the direct and/or indirect effects thereof on him/her and/or the organisation), and *what/so what* (referring to the crux of the statement, i.e. if this statement is accepted to be true, what would that imply; and if it is untrue, what would that imply).

### **3. The research approach**

Project management planning and governance as well as organisational change initiatives are problematic and, for this study, are the subject fields that relate to the broader research context. This study also aimed to resolve a practical problem, i.e. an instance of this where a deficient organisational governance process and associated decision support software (DSS) were improved upon. SSM was applied to facilitate discourse, so as to improve project front-end loading by means of an improved governance process and DSS. It guided facilitated discussions with involved and affected stakeholders, including custodians and implementers of the governance process, custodians and users of the DSS, and representatives from the project and portfolio management office. The outcome of the workshops was a rich picture, which gave way to further explore the problem situation to derive RDs. SSM was enriched by also exploring RDs further from the perspectives of who, why, what/ so what, as explained in Section 2. General learning in terms of the field of study and the research approach applied were extracted. The research problem and its broader research context are discussed next.

#### 4. The research problem and context

This study focused on the following practical problem: an organisational governance process and its associated DSS were deficient and had to be improved upon. Both were too complex and ultimately ineffective in assessing and categorising the portfolio of capital projects in terms of risk profiles and levels of development during project planning and execution phases. These were applied to justify further investment decisions on resource intensive mega projects. The organisation's executive management was of the opinion that decisions were not accurately informed. Projects were wrongly assessed and categorised and hence the front-end planning as well resource loading were done improperly. It resulted in unnecessary re-work during execution and wastage of resources. Billions of US dollars are spent yearly to plan and execute these projects, so as to sustain and improve their core business, so these investments directly impacted on the organisation's profitability and bottom-line.

This relates to a broader research context that is relevant to a wider research community, i.e. that of significant overspend due to avoidable re-work, wasted resources, improper governance, and flawed decision support information stemming from inadequate processes and/or systems. Literature confirms that mega projects are large scale and expensive projects that continue to be implemented for business and economic growth, regardless of the present state of world economics (Flyvbjerg, 2014), but that they also continue to draw concerns (Bingxiu et al., 2018, Wang et al., 2020). Ineffective project governance and project related decisions impacting negatively on project performance and hence organisations' revenues are common problems—it warrants further investigation to enhance the body of knowledge (Musawir et al., 2017, Too et al., 2017, Abbasi and Jaafari, 2018, Volden and Andersen, 2018, Zarewa et al., 2018).

#### 5. The results of the study

The facilitated workshops had three main sets of outcomes. Firstly, a rich picture was drawn. It illustrated the flaws of, according to participants, the as-is scenario, as created by the governance process and DSS. Secondly, RDs were derived to understand the as-is vs the ideal situation. It enabled understanding of the as-is vs. ideal scenario. Thirdly, the rich picture was updated to include enriched understanding and a second set of adjusted RDs were derived to define the required transformation, i.e. to understand and determine what needs to be done for improvement.

The RDs and rich picture were useful to: firstly, demonstrate the truths in the statements made by involved and affected stakeholders (since some participant groups had to be convinced of the perspectives and truths of other participant groups); and secondly, obtain buy-in for change actions to be implemented. Enrichment of the rich picture, and the second set of RDs were the outcome of: scrutiny of all statements made in the workshops that were achieved by asking: who made the statement (interpreted to mean what is the role of this person/ group in the organisation), why would they make the statement (interpreted to mean what is the direct and/or indirect effects thereof on this group or the organisation and based on the statement), and what/ so what (interpreted to mean what is the crux of the statement—if this statement is accepted to be true, what would that imply; and if it is accepted to be false, what would that imply). This is detailed next.

##### 5.1 The rich picture and its implications for the organisation

The final (and enriched) rich picture that was drawn upon conclusion of the workshops is shown in Figure 3. The rich picture was drawn following discussions by participants when prompting them about, e.g., the following social and political aspects of the organisational culture: What do you assess in terms of projects? How do you assess projects? Why do you assess projects? What is the goal of the governance process and the DSS? How do you view success for your projects? How do you view success for yourself in the organisation? And then also, after asking the critical follow-up so what questions. The process followed to derive the RD's are discussed next.

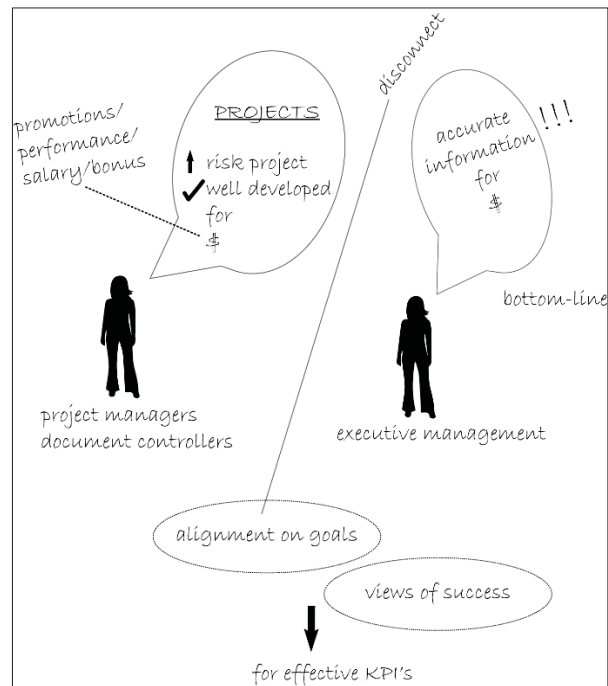


Figure 3: The rich picture

## 5.2 The root definitions

The first set of RDs followed on applying the ‘original’ version of SSM. These discussions firstly highlighted that there were two distinctly different groups, with different perceptions of what the goals were that they working towards, in the organisation. Those that were responsible to capture input data were motivated differently than those that were using the output information. In asking *who* captured input data, the answer was project managers and document controllers. They were regarded as the *actors*, wanting (in terms of *why*) their projects to be profiled as high risk and well developed. In asking *who* applied the decision support (output) information, the answer was the executive management team and investment decision makers. For executive management, the answer to *why* was, as expected, a negative impact on the bottom-line. They were regarded as the *customers*, wanting accurate information for good investment decisions. Up to this point it all still made sense, as the norm in organisations are that project managers and document controllers capture project data for governance, and management makes investment decisions on it. The process and DSS were found to be relatively complicated (as argued by the data capturers), so critical reflection on both were recommended. The RDs related to the above that were derived was formulated as follows:

1. Critically reflect on the process and DSS to explore simplification.
2. Project management teams (project managers and document controllers) capture project data in the DSS, as per the prescribed governance process, to indicate the risk profile and development status.
3. Executive management applies output from the DSS for proper resource loading and further investment (or not) on projects, i.e. they apply it to determine whether a project continues as-is, recycles, or is discontinued, so as to ensure maximum profitability and minimum wastage.

Up until this point it seemed as if the process and system being investigated did exactly what it was supposed to. E.g., it adhered to the goal of project governance, i.e. to legitimately inform project related decisions, as confirmed by literature (Too et al., 2017, Volden and Andersen, 2018). The matter of over complication had to be addressed, and the suggestion was to include consultants in this. The lingering question was, however: would this resolve the issue around the deficient decision support information? So, further exploring, following the enriched version of SSM (refer to Section 2), was undertaken. And, it was only when asking the *so what* question, i.e. what will happen if the project is *not* classified as high risk and well developed, and also what will happen if decision support information is *inaccurate*, that a significant conflict, requiring transformation, surfaced.

It revealed that the main driving force for data capturers (project managers and document controllers) appeared to have been not so much accurate and correct project assessment and classification, as it was the fact that *outcomes of projects’ risk profiles and development status’ were applied in merit and performance discussions.*

It thus directly affected both their performance bonuses and future promotion opportunities. *This was a human resources and performance management related issue that executive management were unaware of, at least to the extent that it could impact upon the data that were entered into the DSS, resulting in flawed decision support information.* In light of this, the following adjusted RD's, for transformation, were derived:

1. Project management teams (project managers and document controllers) capture truthful project data in the DSS, as per the prescribed governance process, to ensure that the project reflect accurately in terms of risk profile and development status.
2. Human resources department work with executive management and line management to adapt the performance management process, so as to reflect on actual and measurable work of employees, and decouple performance management from risk profiling/ project development status.
3. Executive management applies output from the DSS for proper resource loading and further investment (or not) on projects, i.e. they apply it to determine whether a project continues as-is, recycles, or is discontinued, so as to ensure maximum profitability and minimum wastage.

Also, when further discussing critical reflection on the process and DSS, the questions had to be asked in terms of so what, e.g. what, for whom, is to be achieved by simplification, exactly? When asking, how was it possible to inaccurately capture data to the extent that projects were wrongly assessed and wrongly categorised, and what/ how to simplify, it became clear the process and DSS were complicated to the extent that it was easy to manipulate. It gave rise the following additional RD that was defined:

1. Re-engineer the governance process and redesign the DSS to simplify them, so as to ensure that the input/ output data cannot be manipulated, and decision support information adhere to quality and integrity standards.

## 6. Discussion and conclusions

This study is an example of CSR that bridged the theory-practice gap. It resolved a practical problem and adds to the body of knowledge of research methods, as well as the field of project governance and DSS. In application of an enriched version of SSM in this study, the researcher purposely positioned it in the CST/CSR paradigm. She applied methodological pluralism—it aided to become aware of underlying social issues that caused process and systems issues in the organisation. The study objective of emancipation, rather than mere understanding of seemingly straightforward issues related directly to the process and system under investigation, was achieved. The critical application of this enriched version of SSM (i.e. to enhance SSM by adding dimensions to critique discourse as per the work of Ulrich (1983)) resulted in a very simple, yet insightful rich picture that unmistakably showed underlying social issues causing process and systems issues.

This study also adds to the body of knowledge in that it provides a novel way to enrich and apply SSM, so as to identify actions for change, in addition to understanding the problem and its context. Reflections from the perspectives of *who, why, what/ so what*, ensured that participants did not merely discuss the as-is vs ideal situation, but actively engaged in discussions about what and how to change in order to achieve aligned success, that was once all the stakeholders aligned on goals, and bought into the intervention actions to be taken. Participants agreed that they felt engaged and part of the solution. Questioning from the perspectives of *who, why, what/ so what*, enabled application of SSM from a CST/CSR perspective, and successfully guided this CSAR study. So, generalisable learning can be extracted from this study, as suggested by action researchers (Checkland, 1985, Checkland and Scholes, 1990, Checkland, 2011, Mathiassen et al., 2012, Elg et al., 2020). Further research can now be done to apply this process in other organisations that experience similar issues.

It can be concluded that, if SSM was applied in its original form and as a purely interpretive approach, by having pure discourse about relevant customers, actors, world views, environments, and required transformations, the underlying structural conflicts would have remained hidden. The outcome would have been understanding that the process and DSS were flawed (they were). However, the normative basis of the pre-existing situation in the organisation and the conflicts caused by differing perceptions and world views of hierarchically different layers in the organisation would not have been identified. True understanding that drives lasting change would not have been possible. Without this, a new process and DSS would have resulted in pre-'business-as-usual' shortly after implementation of it. Resolution of identified underlying causes led to emancipation and paved the way for successful reinvention of the flawed governance process and supporting DSS<sup>1</sup>.

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<sup>1</sup> The process that was followed to simplify the process and DSS is out of the scope of this paper, and still to be documented for publication.



In terms of learning about project management and governance as well as organisational change initiatives that continue to fail, the severe impact of an apparent non-related departmental process on this governance process must also be noted. In terms generalisable knowledge to be extracted, it is worth noting that such a business process and its associated software should not be viewed in isolation. This is important since researchers in the field of project management and governance agree that projects continue to be delivered with significant over expenditures and time delays, as well as limited benefits, and more empirical research is needed to refine and improve these processes (Musawir et al., 2017, Too et al., 2017, Abbasi and Jaafari, 2018, Volden and Andersen, 2018, Zarewa et al., 2018). Scholars studying organisational change also mention that these continuously fail, and more research is required to improve upon it (Ripamonti et al., 2016, McLean et al., 2017, Bruskin, 2019).

When applying an academic research approach to resolve a practical problem and generate general knowledge, dialogue must happen on at least two levels. Firstly, discussions must be guided through a facilitated effort and ideally using a logical and methodological approach to structure them. In this case, SSM was useful to guide discussions and formulate initial conceptual ideas of what ought to be changed for improvement. These were reflected in the initial rich picture and also the initial set of RDs. They confirmed what are also stated in literature in relation to project governance, and would ordinarily have been accepted as the 'full truth'—improvement actions would have been defined around these. It is, however, with the definition of improvement actions that improvement initiatives such as this often struggle to clearly define appropriately *what* ought to be done next *for improvement*, and the change management endeavour may then result in *effort*, but limited long-lasting improvement. Therefore, by then having the second, and deeper, level of discussions, and asking the critical questions so as to what would happen if the RDs were *not* true, even though they were exact and true as per the perceptions of those involved in and affected by the governance processes and DSS, as well as confirmed by literature, a significant underlying issue (conflict) aroused. That is when *critical reflection* and *transformative redefinition* became possible and occurred, i.e., when participants reflected, as per the Kantian principle, on "the unavoidable incomprehensiveness and selectivity of every definition..." In this study, it revealed an underlying, seemingly unrelated, organisational structure causing an inconsistent (flawed) effect in/for another process.

## 7. Summary

In this study the researcher successfully identified actions to improve an ineffective project governance process and associated DSS. The study was done in the CSR paradigm and methodological pluralism was achieved. SSM was enriched by exploring derived RDs further and from the perspectives of *who*, *why*, *what/ so what*, as per the work of Ulrich (1983), and taking the principle of acknowledgement of and reflection on probable imperfect understanding into account, as explained in Section 2. Underlying social issues that impacted negatively upon the process and DSS surfaced—underlying root causes that drove decisions, behaviours and actions of involved and affected stakeholders were identified. It revealed underlying social/ organisational issues that resulted in an ineffective process and system. Mere reflection on, or even re-design of the process and supporting DSS, without understanding these, would not have resulted in lasting changes.

In supplementing SSM with deeper and critical reflective questions to possibly surface underlying social issues, subsequent discussions revealed, in addition to practical issues directly related to the complexity of the process and supporting DSS, also underlying human and social phenomena, i.e. employee performance criteria driving manipulation of DSS, which had unintended and far reaching consequences for the organisation. These were key underlying causes that would not have gone unnoticed if the researcher did not ask the additional probing questions in terms of the SSM dimensions, and if she did not follow these up with questions about the *who*, *why* and *what/ so what* to explore underlying structural and organisational conflicts causing deficiencies. It provided crucial insight into the social setting and research context, and enabled critique and transformative redefinition.

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