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A Decision Enhancement Service for Stakeholder Analysis to Achieve Transformations in the Public Sector

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Abstract

Sourcing has become a popular practice for public sector managers aiming for transformations to save costs and improve service delivery. Nevertheless, public sector sourcing often fails due to stakeholder resistance and power struggles, stressing the need for stakeholder analysis. This paper presents a decision enhancement service for STakeholder ANalysis called STAN. The design of STAN is based on sourcing decision issues and observations obtained from public sector sourcing cases, expert interviews and literature. Foundations are derived from the stakeholder and resource dependency theories. STAN enables to identify stakeholder consensus levels that are visualized on sourcing scenario overviews. The assumption is that providing decision-makers insight in stakeholder consensus levels enables them to effectively decide which scenario to pursue and whom to account for. Evaluation results are derived from three public sector sourcing case studies, suggesting that STAN achieves what it is designed for: providing insight in stakeholder consensus levels for decision-making.

1. Introduction

In today's network economy outsourcing and insourcing has become a popular practice for public organizations that aim to improve service delivery and save costs [1-3]. Outsourcing occurs when organizations transfer activities to other organizations. Insourcing occurs when activities are transferred within organizations, often to so-called shared service centers (SSCs) [2-4]. An insourcing example is the transfer of HRM activities from multiple Ministries to a dedicated SSC in the Dutch government which resulted in a €50 million cost-saving [5]. In the Dutch government several new SSCs are developed as part of a large transformational e-government program called "Smaller Government" that aims to achieve a total cost-saving of €800 million [6].

Transformational government aims "to transform and improve public sector service delivery" [7, p160] envisaging a "technologically enabled order of magnitude improvement" [8, p138]. Public sourcing initiatives can be placed under transformational government since they are often driven by ICT and usually bring about considerable organizational change to improve public service delivery and save costs [4]. For example SSCs are transformational as services are removed from organization units and bundled in single organization units. The transformational power of SSCs is expressed by the cost-savings they can bring about such as the €50 million saving of the aforementioned SSC for HRM.

Even though sourcing can result in major cost-savings, sourcing initiatives frequently fail. For example, the first implementation phase of the aforementioned shared service center for HRM failed in 2005 due to stakeholder resistance against power concentrations and a "one fits all syndrome" [9, p357]. Media referred to a "completely overloaded ICT operation driven far over the edge" [10].

Exploratory research clarifies that stakeholder resistance is a key cause for failure of sourcing arrangements in the public sector [9, 11]. Often sourcing failures can be traced back to a disregard of stakeholder considerations and decision alternatives by decision-makers who predominantly focus on achieving cost-savings and lack a strategy for dealing with resistance [9, 12]. In the transformational government domain to which public sourcing belongs "contradictory stakeholder objectives can represent an important barrier for realizing potential benefits from e-government initiatives" [13, p20]. Resistance to change is recognized as an impediment for transformational government projects [14].

Hence, there is a need for a stakeholder analysis method that enables identification of stakeholder resistance to enhance sourcing decision-making and, ultimately, increase chances of sourcing success. Accordingly the following research question is formulated: *what is a solution to enhance public sector*

sourcing decision-making and increase chances of transformation success?

To the best of our knowledge literature does not provide a suitable stakeholder analysis method for enhancing sourcing decision-making processes that are characterized by stakeholder resistance and power struggles. Literature presents various methods such as the “quick and dirty” [15, p35] power versus interest grids of Bryson [16] or the analytical dynamic network analysis of Bots et al. [17]. First, the power versus interest grid method seems to be widely adopted in practice, possibly due to its simplicity. However, mapping stakeholders on a grid based on their perceived power and interest levels merely enables to identify stakeholder types (players, subjects, context setters, crowd) – it does not seem to provide a basis for identifying stakeholder resistance levels and resistance strategies for sourcing decision-making. Simply put, the easy to use grids seem to “lack analytical depth” [15, p35]. Second, the analytical dynamic network analysis presents a formal conceptual language that “allows for the modeling of the perspectives of individual actors [...] which can then be compared” [15, p34]. The method seems to be suitable for identification of stakeholder resistance (i.e. perspectives) for sourcing decision-making, yet the in depth analytical aspect of the method seems to reduce adoption in practice.

This research presents a decision enhancement service for STakeholder ANalysis called STAN. STAN combines the work of Keen and Sol [18] about decision enhancement with sourcing, stakeholder analysis and change management literature. STAN enables public sector sourcing decision-makers to capture interests, concerns, and resistance levels of stakeholders regarding multiple sourcing scenarios and visualize stakeholder consensus levels on scenario overviews. As such, STAN aims to enable decision-makers to pro-actively account for stakeholder considerations and decision alternatives in sourcing arrangement processes.

On an academic level this research contributes to the transformational e-government domain with a conceptual description of sourcing decision issues as well as with STAN specifically focusing on effective decision-making in this domain. This research essentially contributes to a design theory for stakeholder analysis. On a practical level this problem-driven research is relevant for decision-makers who can apply STAN to achieve successful transformations in the e-government domain.

This paper is structured as follows. Section 2 introduces stakeholder theory. Section 3 presents decision enhancement. Section 4 explains the research approach. Section 5 presents sourcing decision issues

and functional requirements for STAN, linking back to the resource dependency theory. Section 6 introduces the design of STAN. Section 7 presents evaluation results derived from public sector sourcing cases. Section 8 discusses the results. Section 9 provides a conclusion, limitations and future research directions.

2. Stakeholder Theory

Stakeholder theory (ST) of Freeman [19] explains that organizational decision-making is influenced by “the legitimate interests of all appropriate stakeholders, both in the establishment of organizational structures and general policies and in case-by-case decision-making” [20, p67]. “Literature concurs in the need for stakeholder support to create and sustain winning coalitions [...] Key stakeholders must be satisfied [...] or public policies, organizations, communities or even countries and civilizations will fail” [16, p23].

ST is successfully applied in the context of transformational e-government. From a normative perspective, scholars such as Scholl [21] and Flak and Rose [22] argue that stakeholder interests and concerns should be accounted for in e-government development projects. From a descriptive perspective, scholars such as Mitchell et al. [23] and Ghobadian et al. [24] use ST for identifying and characterizing stakeholder salience in public e-service development projects. From an instrumental perspective, tools and techniques are provided such as the aforementioned power versus interest grids of Bryson [16] for “governmental and nonprofit reforms” (p24). Hence, applying ST to the public sector sourcing domain which belongs to transformational e-government legitimates that stakeholder analysis is required to achieve consensus in sourcing decision-making processes that are characterized by resistance and power struggles.

ST provides a number of concepts that are used in this study. A *stakeholder* is an individual or group who can affect or is affected by an organizational goal [19, 21, 25]. Simply put, a stakeholder has an interest (stake) in a goal. The *interests* and *concerns* of a stakeholder determine the *level of stakeholder resistance* which is the extent to which a stakeholder is unwilling to accept a proposed course of action [26]. *Stakeholder consensus* is the degree to which a group of stakeholders is willing to commit to a proposed course of action [27].

3. Decision Enhancement

ST is positioned as particularly relevant in the context of decision-making [21, 22]. STAN is designed as a decision enhancement service for STakeholder

ANalysis following the work of Keen and Sol [18]. Building on experience gained over the years in the (group) decision support systems field (e.g. [28, 29]), they propose the design of decision enhancement studios that are (virtual) environments in which people, processes and technology are brought together to enhance complex decision-making and improve collaboration. A studio is composed of various *decision enhancement services* (building blocks) that provide functionalities for improving complex decision-making and are delivered to people following predefined process guidelines using technology. The novelty lies in the proposed 1) shift in focus from technology-oriented decision support systems to process-oriented decision enhancement services and 2) domain-specific services instead of generic systems viewing people as subjects of their surroundings.

4. Approach

This research uses design science of Hevner and Chatterjee [30] effectuated with the inductive-hypothetic strategy of Sol [31]. The design science philosophy essentially involves “learning through the act of building” [32, p489]. Following the inductive-hypothetic strategy, this research starts with observations based on which a design (hypothesis) is developed and evaluated, and as such is divided into the following three phases (see Table 1):

1. Exploration and understanding: identification of public sector sourcing decision issues and observations and functional requirements;
2. Design: development of STAN;
3. Evaluation: in public sourcing case studies.

Table 1. Approach

Phase	Instrument	Outcome
1 Exploration and understanding	Literature review, case studies, expert interviews	Sourcing decision issues, observations, requirements
2 Design	Literature review, fictional scenario	Design of STAN
3 Evaluation	Literature review, expert panel, case studies	Evaluation results

Note that this paper presents a part of a research project in which a so-called decision enhancement studio for sourcing in the public sector is designed and evaluated [12]. This paper specifically focuses on the stakeholder analysis aspect of this studio.

5. From Exploration and Understanding to Design

The design of STAN is based on results from the exploration and understanding research phase being sourcing decision issues and observations derived from three public sourcing case studies, thirteen expert interviews, and literature. This section provides an overview of the issues and observations, a theoretical explanation and functional requirements.

5.1. Issues and Observations

The following sourcing decision issues are identified:

- *Stakeholder resistance*: sourcing usually brings about considerable organizational change which often results in stakeholder resistance and power struggles in public sector decision-making processes [11].
- *Tunnel vision*: public sector sourcing decision-makers tend to adopt tunnel visions predominantly focusing on cost-savings while disregarding decision alternatives and stakeholder considerations [33].
- *Lack of overview*: public sector sourcing decision-makers often lack overview in messy decision processes, possibly due to the many stakeholders usually involved [12].

In addition two observations are identified:

- *Non-linear, dynamic, and varying sourcing decision-making processes*: public sector sourcing decision-making processes can be described as: 1) non-linear cyclical in which decision-makers move back and forth through analysis, decision-making and transformation phases [12], 2) dynamic changing along the way referring to the remark that “stakeholders’ goals, interests and perception might change over time” [25, p55], and 3) varying due to different organizational contexts.
- *Adoption*: the public sector does not have a positive track record regarding the adoption of group decision support systems [12].

Note that the issues and observations were first identified in the case studies and interviews and hereafter related to literature. For example an expert interviewee clarified that managers often disregard decision alternatives, which is related to the tunnel vision concept [33].

5.2. Resource Dependency Theory

The sourcing decision issues and observations predominantly revolve around stakeholder resistance and power struggles. A theoretical explanation is drawn from the resource dependency theory (RDT) of Pfeffer and Salancik [34]. RDT explains that organizations depend on each other for providing necessary resources to survive and grow [35]. “Many public organizations ignore the fact that they are dependent on others in their development projects” [36, p234]. Organizations aim to maximize their power by acquiring and maintaining external resources, decreasing their resource dependence on others and increasing the resource dependence of others on them [37]. Applied to public sector sourcing, RDT explains that the transfer of activities and resources from individual organization units to another organization (outsourcing) or to a shared service center (insourcing) decreases the power of the individual units. The transfer increases their resource dependence on others which is why stakeholder resistance and power struggles can be expected in sourcing decision-making processes. Sourcing “distorts the power maximisation efforts of the individual organisation units which can be a significant cause for resistance” [11, p95].

5.3. Functional Requirements

The following functional requirements are formulated for the design of STAN:

1. *Stakeholder resistance*: create a stakeholder analysis solution that provides insight in stakeholder resistance levels (i.e. levels of consensus) for public sector sourcing decision-making based on identification of stakeholder concerns and interests (based on the stakeholder resistance issue).
2. *Alternatives*: create a stakeholder analysis solution that focuses on enhancement of public sector sourcing decision-making through analysis of multiple sourcing arrangement scenarios. The essential aim of stakeholder analysis, or any analysis for that matter, is to provide information for boundedly rational decision-making after all [38, 39] (based on the tunnel vision issue).
3. *Overview*: create a stakeholder analysis solution that provides overview for public sector sourcing decision-makers, to avoid bogging down into specific details. Visual overviews are recommended to incite visual thinking [18] (based on the overview issue).

4. *Agility*: create a stakeholder analysis solution that can be repeatedly deployed for analysis in non-linear, dynamic and varying sourcing cases to adapt to change and to create change [40] (based on the non-linear, dynamic, and varying decision-making observation).
5. *Simplicity*: create a stakeholder analysis solution that is simple to use [41] having the adoption success of the power versus interest grids [16] in mind. Avoid exhausting information retrieval (based on the adoption observation).

The above shows that overall a need for a stakeholder analysis solution clearly exists for public sector sourcing decision-making.

6. Design of STAN

This section first explains the three aspects of STAN (people, process, technology) and concludes with a demonstration.

6.1. People

STAN targets decision-makers (managers) involved in public sector sourcing projects that are characterized by stakeholder resistance and power struggles. If a decision-maker involved in such a sourcing project is unsure about which sourcing arrangement scenario to pursue he or she can deploy STAN to identify stakeholder considerations for multiple scenarios and choose accordingly.

6.2. Process

STAN can be deployed individually or collaboratively in groups in dynamic and varying sourcing cases in which stakeholder resistance is recognized. This research focuses on group deployment. Table 2 presents the process guidelines of STAN, including the following so-called thinkLet collaboration patterns: generate, reduce, clarify, evaluate and build commitment [42].

Table 2. STAN process guidelines

Guideline	Pattern
1 Generate sourcing arrangement scenarios for analysis	Generate
2 Generate stakeholders to include in analysis	Generate
3 Generate stakeholder concerns and interests for each scenario	Generate

4 Choose most important concerns and interests	Reduce
5 Assign resistance levels (high, medium, low) / weighting values	Evaluate
6 Generate a scenario overview based on the stakeholder analysis results	Generate
7 Present the scenario overview	Clarify
8 Decision-making: compare the scenarios and choose a feasible scenario to pursue	Evaluate, build commitment

As shown in Table 2, STAN enables decision-makers to capture interests, concerns and resistance levels of stakeholders regarding multiple sourcing arrangement scenarios based on which scenario overviews are generated for decision-making.

6.3. Technology

STAN is delivered via a web application in which multiple decision enhancement services are incorporated: www.decisionenhancement.com. The application was developed using the open source web development platform LAMP (Linux, Apache, MySQL, PHP). For now access is restricted due to the potential sensitivity of shared data. In future the web application will open up for public usage (access will be restricted on project level).

Note that STAN is a technology-independent decision enhancement service. STAN could be made available via other technology following the aforementioned guidelines; the web application is the product of a series of design choices.

6.4. Demonstration: the Coffee Case

The following fictional and simplified Coffee case is used to explain how STAN can be deployed in practice following the aforementioned process guidelines and using the web application.

In the current situation of the Coffee case there are three ministries each arranging their own coffee. Ministry 1 has employed a coffee lady providing coffee to civil servants three times a day. Ministry 2 has luxury coffee machines on each floor providing high quality coffee. Ministry 3 has standard coffee machines on each floor providing standard quality coffee. The idea emerged to establish a SSC for coffee providing standard coffee machines on each floor of the ministries to save costs. This idea, however, caused quite some resistance. The question is whether the resisting ministries should join the SSC for coffee or if the current situation should be maintained. Taking the guidelines in Table 2 into account, STAN is deployed

in a group session with representatives of the three ministries and an expert facilitator as follows.

Process guideline 1. STAN can be deployed to analyze all kinds of scenarios / solution alternatives. For the Coffee case the following three scenarios are analyzed using the web application:

1. Scenario 1 share all: all three ministries will join the SSC for coffee;
2. Scenario 2 share partially: several ministries will join the SSC for coffee;
3. Scenario 3 share nothing: the SSC for coffee will not be established (null option).

Process guideline 2. The following three stakeholders are included: Min1 (ministry 1), Min2 (ministry 2), and Min3 (ministry 3).

Process guidelines 3-5. Figure 1 shows how for each of the three ministries concerns, interests and resistance levels regarding each scenario are identified using the web application. Based on the resistance levels weighting values are automatically assigned. On the left side of Figure 1 the three ministries are shown with Min1 and Min3 both having a low resistance (weighting value: 0.1) and Min2 having a high resistance (weighting value: -1) regarding scenario 1. The resistance colors in the overview (from red to orange to green) are based on the resistance weighting. On the right side of the screenshot an input form of Min2 is shown in which the concerns, interests and resistance can be edited.

Process guidelines 6-8. Using the web application a scenario overview is created based on the information provided in the previous steps (see Figure 2). The scenario overview visualizes the resistance levels of the three ministries for each scenario. The overview shows for example that scenario 1 is the least attractive due to the high resistance posed by Min2 (red color) and that scenario 2 is the most attractive (green color). As such the scenario overview provides a basis for sourcing decision-making, advising with which scenario to continue and with whom to account for when doing so. The overview acts as an eye-opener to potential stakeholder issues to account for.

7. Evaluation Results

STAN was applied to three public sector sourcing case studies (note that the expert panel results are included in [43]). This sections starts with describing how STAN was deployed in each case and finishes with a synthesis of the findings. In the cases other decision enhancement services were evaluated also, but this is outside the scope of this paper.

7.1. Case SSC Rijksincasso

SSC Rijksincasso is a sourcing initiative led by the prosecution service of the Netherlands in Leeuwarden. The project ultimately aims to move from 51 governmental agencies collecting money from civilians and organizations (e.g. traffic fines, wrongly paid social benefits or college tuition fees) to one SSC with the objective to attain a yearly cost-saving of €40 million and qualitative advantages such as combined collections [6].

STAN was deployed in a three hour group session with six employees of the prosecution service and an

expert facilitator (the researcher) to analyze which of five agencies would partake in the transfer of a sub collection process (forced collection using bailiffs) to the SSC. Taking the process guidelines in Table 2 into account, STAN was deployed as follows.

Process guideline 1. The following three scenarios were analyzed using the web application:

1. Scenario 1 share all: all agencies will transfer collection services to the SSC;
2. Scenario 2 share partially: several agencies will transfer collection services to the SSC;
3. Scenario 3 share nothing: the SSC will not be established (null option).

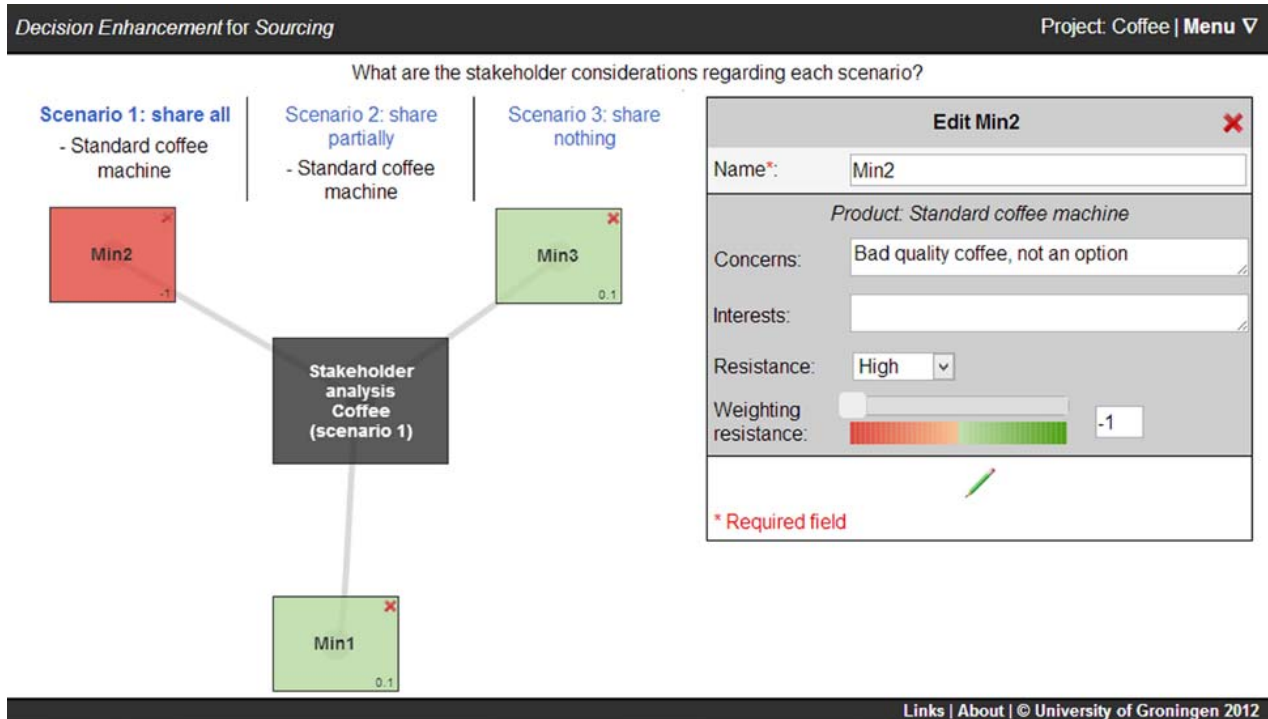


Figure 1. Input: stakeholder concerns, interests and resistance levels regarding sourcing scenarios

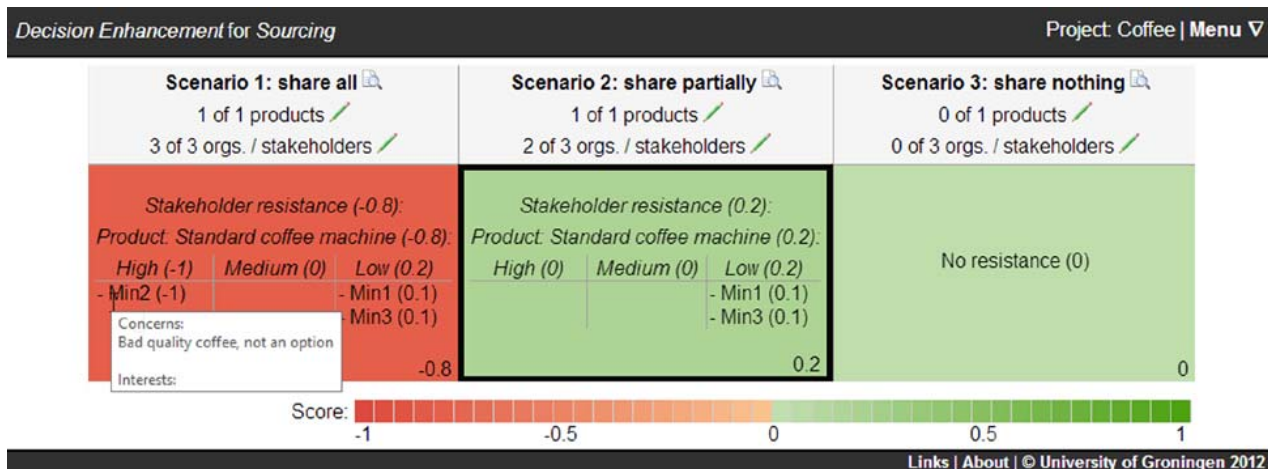


Figure 2. Output: scenario overview forming the basis for sourcing decision-making

Process guideline 2. The following stakeholders were included in the analysis: the five agencies, five ministries, the ombudsman representing civilians and the prosecution service itself.

Process guidelines 3-5. During the group session for each stakeholder concerns, interests and resistance levels regarding each scenario were identified.

Process guidelines 6-8. A scenario overview was created which showed that scenario 1 had the highest resistance (red), scenario 2 had medium resistance (orange) and scenario 3 had the least resistance (green). The overview was discussed in the group session to collaboratively decide which scenario to pursue and which stakeholders required attention.

7.2. Case Sharing Academies

The Sharing Academies case revolved around six governmental academies providing educational services such as law courses, project management or coaching. STAN was deployed for a first collaborative exploration regarding which services could be shared by the academies without speaking of institution of a new organizational arrangement. A three hour group session was held with six (deputy) academy directors and two expert facilitators (the researcher and the case study contact person).

Process guideline 1. The following three scenarios were analyzed using the web application:

1. Scenario 1 capacity and skill: shared trainers, educational experts, professionalization of academy employees, demand management.
2. Scenario 2 the new learning: shared e-learning system and knowledge base.
3. Scenario 3 organization: shared events calendar, enrolment system, events organization, coordination and website.

Process guideline 2. The following stakeholders were included in the analysis: the six academies.

Process guideline 3-5. Stakeholder considerations regarding each scenario were obtained by the researcher in preparatory interviews with the academy directors and virtual questionnaires.

Process guidelines 6-8. A scenario overview was created which was discussed during the group session in which consensus regarding the sharing of four proposals was reached.

7.3. Case Court of Justice

At a Court of Justice in the Netherlands family law appeal hearings were conducted by three internal judges. To save costs external judges were hired

incidentally (outsourcing), usually being lawyers preparing and executing the hearings alongside two internal judges. The incidental hiring of external judges was a subject of discussion for some time between the management wanting to save costs and the internal judges wanting to maintain quality.

STAN was deployed in a three hour group session with four employees of the Court of Justice and an expert facilitator (the researcher). The goal of the group session was to analyze to what extent external judges could be hired structurally.

Process guideline 1. The following three scenarios were analyzed using the web application:

1. Scenario 1 75%: hiring of external judges in 75% of the appeal hearings;
2. Scenario 2 50%: hiring of external judges in 50% of the appeal hearings;
3. Scenario 3 0%: no hiring of external judges.

Process guideline 2. The following stakeholders were included in the analysis: chairman Family Law, internal judges, external judges and top management.

Process guideline 3-5. Stakeholder considerations regarding each scenario were identified during the group session using the web application.

Process guideline 6-8. The resulting scenario overview advised for scenario 1, triggering a heated discussion among the internal judges pursuing scenario 3 and the chairman pursuing scenario 1. The overview provided a basis for a structured discussion and eventually consensus was reached for scenario 2.

7.4. Synthesis of Findings

After each group session participants filled in questionnaires in which they were asked to evaluate 5-point Likert scale statements (from 1 strongly disagree to 5 strongly agree [44]) regarding STAN's perceived usefulness [18, 45] as well as to write down perceived advantages and disadvantages. Table 3 provides the evaluated questionnaire statements regarding STAN's usefulness, showing that STAN is positively evaluated.

Table 3. Perceived usefulness STAN

Statement	Case 1 (N=5)	Case 2 (N=7)	Case 3 (N=4)
1 Provides insight in level of consensus	μ : 4.00 σ : 0.00	μ : 4.43 σ : 0.53	μ : 4.50 σ : 0.58
2 Potentially enables monitoring stakeholder considerations	μ : 4.20 σ : 0.45	μ : 4.29 σ : 0.49	μ : 4.50 σ : 0.58

Several advantages regarding STAN were written down on the questionnaires: "due to the colors

immediate insight in attractiveness”, “provides insight in everyone’s resistance”, “pleasant way of providing insight in different considerations”, “creates a shared picture”, and “creates understanding for everyone’s views”. The following disadvantage regarding STAN was written down on a questionnaire “stakeholder considerations can change along the way (not static)”.

In addition two recommendations regarding future redesign of STAN were derived. First, the current scale used for resistance levels (high -1, medium -0.5, low 0.1) should be changed into the following: high resistance (-1.0), medium resistance (-0.5), neutral (0), enthusiastic (0.5), very enthusiastic (1.0). Second, the web application enables analysis of a maximum of around 15 stakeholders, above the visual representation would clutter. Future design should enable inclusion of more stakeholders to allow for analysis in larger e-government projects.

To conclude, the aforementioned results suggest that STAN achieves what it is designed for: providing insight in stakeholder consensus levels on visual scenario overviews for public sector sourcing decision-making. In the SSC Rijksincasso case the overview provided useful insight regarding which resisting stakeholders required extra attention. In the Sharing Academies case the overview provided insight regarding which academies were willing to share. In the Court of Justice case the overview provided a basis for a structured discussion to achieve consensus. Table 4 provides a synthesis of the findings relating the evaluation results to the functional requirements that were originally formulated for the design of STAN.

Table 4. Synthesis of Findings

Functional requirement	Evaluation
1 Provide insight in stakeholder consensus levels	Results from all three cases suggest that STAN provides insight in stakeholder consensus levels
2 Analyze multiple sourcing scenarios	The cases show that STAN is capable of analyzing multiple sourcing scenarios / alternatives to reduce tunnel visions
3 Provide visual overview for sourcing decision-making	Visual scenario overviews were created and discussed in the cases and the advantages show this aspect was well received
4 Create an agile solution	The cases suggest that STAN can be deployed in non-linear, dynamic, and varying cases
5 Create a simple to use solution	Since STAN was deployed by the researcher in the cases this aspect has not been evaluated.

8. Discussion

The goal of this research was to design a stakeholder analysis solution for enhancement of public sector sourcing decision-making to increase chances of transformation success. The design science research philosophy of Hevner and Chatterjee [30] proved suitable to accomplish this goal due to its basic tenet to acquire knowledge and understanding of a design problem and its solution through the building and application of an artefact. The inductive-hypothetic research strategy of Sol [31] served as a useful guide for effectuating the design science philosophy, moving from exploration and understanding of an issue domain to design and evaluation of a solution. Generalization of the results is a next step in the inductive reasoning process, by applying STAN to other case studies in the transformational government domain and, eventually, to other multi-stakeholder decision-making domains.

In line with many others (e.g. [13, 25]), ST and RDT proved useful for this study in their mutual objective “to predict or explain the actions of a manager faced with the difficult task of satisfying potentially conflicting interests” [24, p1522]. ST provides theoretical explanations of why stakeholder analysis is required (“to replace today’s prevailing neoclassical economic concept of the firm” [21, p735]) including a number of concepts that are used in this study. RDT explained why stakeholder resistance and power struggles can be expected when trying to achieve transformations in the public sector sourcing domain. It can be argued, for example, that in the SSC Rijksincasso case several agencies resisted the proposed transfer because the transfer would increase their resource dependence and distort their power maximization efforts.

Following the “garbage-in, garbage-out” argument [46], further information retrieval and weighting factor adjustments could be done to create more realistic scenario overviews. However, STAN needs to provide a simple to use solution to create scenario overviews for decision-making, to avoid bogging down into specific details. The scenario overviews need to provide an indication for decision-making to be done by people, not systems. “People make decisions; technology enables decision-making [...] The more important the decisions and the more complex it is, the more likely it will be that technology and theory get thrown out” [18, p27-30].

Repeated deployment is recommended to monitor changing stakeholder considerations over time, referring to the noted disadvantage that considerations can change along the way and the fourth functional requirement to account for dynamic sourcing decision-making processes. Repeated deployment adds further

weight to the requirement to create a simple to use stakeholder analysis solution.

9. Conclusion, Limitations and Future Research

STAN proposes a useful solution for conducting stakeholder analysis in the public sector sourcing domain, enabling decision-makers to identify stakeholder consensus levels that are visualized on sourcing scenario overviews. The overviews enable to decide which scenario to pursue and whom to account for in public sector transformation processes.

Three research limitations are identified. First, STAN is deployed by the researcher himself in the case studies which might have influenced the outcomes as well as disabled evaluation of STAN's perceived usability. Second, STAN has not been repeatedly deployed within a case to evaluate to what extent STAN can deal with case study dynamics. Third, STAN is applied in three cases with a small sample size; results should be regarded as anecdotic.

Recommendations for future research are 1) to redesign STAN following the case study recommendations and making the web application available for public usage and 2) to gather more case study material within the e-government domain as well as across domains (e.g. urban planning) for generalization purposes. STAN can be applied to (longitudinal) case studies to evaluate its usefulness (utility), usability (simplicity) and impact [18, 45].

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