Updating a public procurement maturity model: The case of the MSU+ model

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Public procurement maturity in the Netherlands is commonly measured with the MSU+ model, but public organizations tend to score low in this model. Critics mention the low visibility of possible improvements in the assessment, reflected in the manner of presentation of assessment results. As MSU+ was agreed on as a measuring tool for Dutch Government organizations, it is desired to improve the model. Therefore, the purpose of this research is to identify the exact problems and possible solutions to increase the relevance and applicability of MSU+ for the Dutch public sector. A design science approach was enacted for this explorative research. The research model, based on Hevner (2004), guided the execution of a relevance, rigor and design cycle to derive at perceived problems and respective design propositions. Findings reveal that experts do not perceive the need to change the structure of the MSU+ model. Recommendations are formulated for the presentation of assessment results and for clarifying certain parts of strategic and enabling processes. Moreover, new public sector developments as sustainability, social return, best value procurement and the new Dutch procurement law should not be included more specifically in the model in order to ensure applicability across the whole public sector. This research adds to existing literature by setting direction on what to do with new public sector developments and concepts when updating procurement maturity models. In addition, public procurement maturity measurement is still in its infancy with not many applied models around the world yet, leaving the possibility of MSU+ being applied in other countries.

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1. INTRODUCTION

One of public procurement's challenges lies in being accepted as a profession (Thai, 2001). Important in this process is the need to measure the effectiveness and maturity of public procurement, because an understanding of current procurement maturity is a prerequisite for being perceived as a strategic function (Keough, 1993). However information lacks on how to ensure effective and mature public procurement (Zheng, Knight, & Harland, 2007). Previous research found a positive relationship between procurement maturity and performance, yet public procurement organizations often lack systems/indicators to measure and improve on their procurement maturity (Batenburg & Versendaal, 2008; Plomp & Batenburg, 2009). A common procurement maturity model can be used as a reference for benchmarking and communicating about common challenges (Møller, Hedegaard, Petersen, Vendelbo, & Jakobsen, 2006).

Public procurement maturity in the Netherlands is commonly measured with the MSU+ model, derived from the MSU model by Monczka (1999). Since its design in 2005, MSU+ has been applied at around 50 public entities such as municipalities and ministries (Netherlands Association for Purchasing Management (NEVI), 2009). MSU+ measures public procurement maturity through self or expert assessment with regard to eight strategic and six enabling processes (See Figure 1 and 2). Per process a maturity level from 0 to 10 can be achieved, yet the strict step principle only entails achievement of the following maturity level, if all criteria of the previous level are fulfilled.

Due to the strict step principles many public entities reached average scores of just 1 to 2 on a scale of 10 which leaves much room to improve on public procurement maturity (NEVI, 2009). As public procurement entities in the Netherlands have to comply with the guidelines of the European Union on Public Procurement, some process criteria might not be realistically achievable in public entities in the Netherlands lowering the relevance of MSU+ for the Dutch public sector as well as the applicability to public organizations. In addition, the varying size of public entities might mean that the model is not applicable to all public organizations. Furthermore, users criticize the low visibility of possible improvements in the assessment, which is also reflected in the manner of presentation of assessment results to management.

The Dutch Ministry of the Interior as well as PIANOo, the Dutch Public Procurement Expertise Centre, are aware of the associated problems with the MSU+ model and look for possible improvements of the MSU+ model in order to increase the usage spread of MSU+ across public procurement entities in the Netherlands. The Ministry prefers to improve the existing MSU+ model instead of switching to a new model, because MSU+ was designed for the public sector and has already been used at several entities, therefore keeping MSU+ allows for benchmarking across government entities. Such entities include the ministries, provinces and municipalities of which the varying size will be considered. Therefore the research question was defined as: "How can the MSU+ model be improved to increase its relevance and applicability for public procurement organizations in the Netherlands?"

The research goal is to ensure that public entities will be motivated by the results of a MSU+ assessment and to improve the fit between the model and requirements of public procurement organizations in the Netherlands.

This paper is structured as follows. The methodology section describes the applied design approach with the remaining sections following the research model in Figure 3 before ending with discussion, conclusion, managerial recommendations and future research suggestions.

1.1 The MSU+ model

The Michigan State University Model (MSU), based on private sector purchasing benchmarking by Monczka (1999), was accustomed for the public sector by Purchasing Excellence Publiek (PEP) from PIANOo and the Netherlands Association for Purchasing Management (NEVI) (2005) to MSU+. Certified auditors determine maturity levels for eight strategic (see Figure 1) and six enabling processes (see Figure 2), which are compared to best practices on a spider diagram. A table with red and green fields provides an indication of existing and non-existing criteria per process and maturity level. The model is prescriptive in nature, since it is neither based on literature nor empirically tested (Telgen, Lohmann, & Uenk, 2011). A database of MSU+ assessment results allows benchmarking across the public sector.
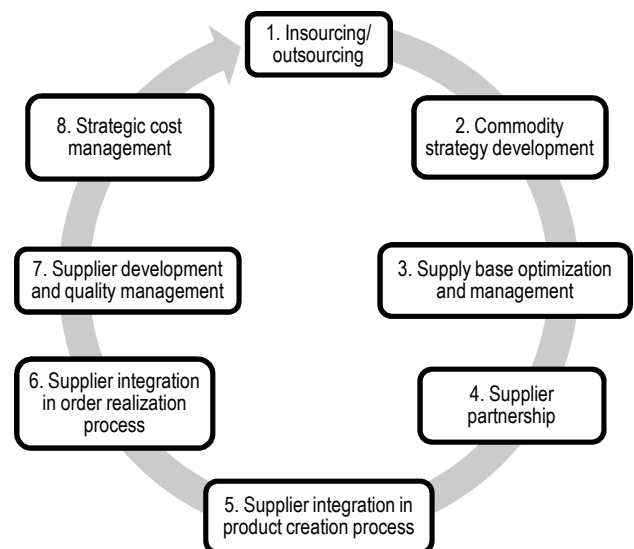

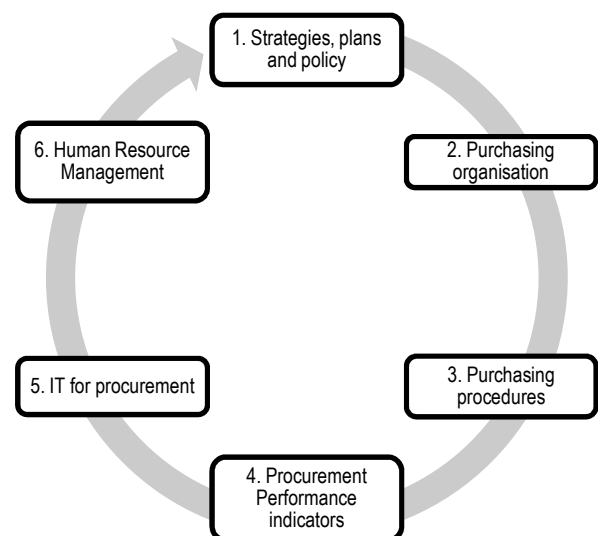**Figure 1. Strategic processes of the MSU+ model.**

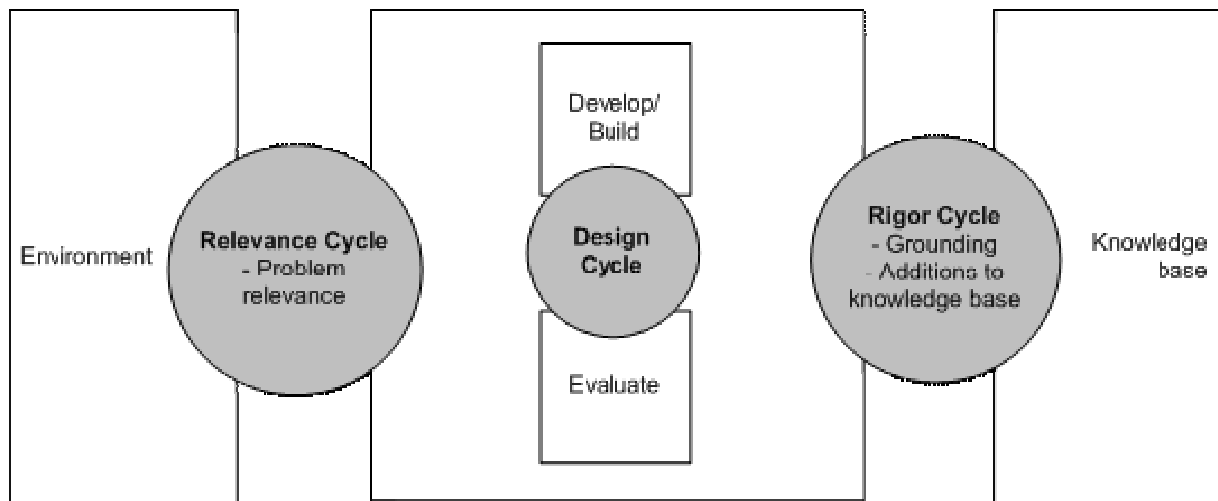**Figure 2. Enabling processes of the MSU+ model.**

Figure 3. Research model based on Hevner et al. (2004), Hevner (2007) and Bemelmans et al (2013).

2. METHODOLOGY

This research adopts a design research methodology for several reasons. First, design research is adequate for the development of a new system or new version of an existing system, as the gap between theory and practice is bridged. Second, maturity models have already been approached from a design perspective (Bemelmans, Voordijk, & Vos, 2013; Röglinger, 2012). Furthermore, design research is viable with only limited information, emphasizes participation and leaves room for extension of the new design outside of the first problem definition (Romme, 2003). As not much is written in scientific literature about measuring public procurement maturity, the limited amount of information could be overcome by involving experts. Lastly, a design approach is feasible as it recognizes the uniqueness of each situation, while providing an underlying focus on the goal or purpose and the possible ideal solution (Romme, 2003). Because the unique goal of the ministry is to stay with the existing model and to make use of already existing benchmark scores, a focus on these goals is important throughout the research. The final product of design research are design propositions, providing recommendations for a solution (Aken, 2004; Romme, 2003).

The research model (See Figure 3) was based on the design science research framework by Hevner, March, Park, & Ram (2004), which has been further elaborated (Hevner, 2007) and applied (Bemelmans et al., 2013). It portrays the interaction between the environment, the knowledge base and the new design of the model. All three cycles were executed in this research, however the field testing mentioned in the relevance cycle was not possible in this research due to time constraints.

2.1 Relevance and rigor cycle
In the relevance cycle the problem relevance was identified through semi-structured interviews (See Appendix 9.1) based on mentioned problems in the research proposal and in the PEP Project 1 (NEVI, 2009). Just as in proceeding interviews, the case selection of users, auditors and experts was based on availability of contacts of the Ministry of the Interior and PIANOo. The five interviewees compassed experienced auditors and experts and one-time MSU+ assessment participants. All interviews from the relevance cycle were transcribed using denaturalism (Oliver, Serovich, & Mason, 2005). Interviews were reviewed to derive at a coding scheme (See Appendix 9.2) and coded by two researchers in order to calculate interrater reliability. As a measure of interrater reliability Cohen's Kappa was calculated as this measure

considers that agreement could have happened due to chance (Cohen, 1960). Manual coding was chosen over electronic coding due to the limited amount of five interviews (Basit, 2003). As a result of the coding process, an overview of perceived problems and difficulties of MSU+ was produced (See Table 1).

In the rigor cycle, the perceived problems were translated into focus points for a literature review to identify applicable knowledge. Based on the research note about procurement maturity models (Telgen et al., 2011) other models were reviewed in order to identify possible solutions to the perceived problems. The result of the rigor cycle was a list contrasting perceived problems and possible solutions (See Appendix 9.6).

2.2 Design cycle
2.2.1 Develop/Build
In the design cycle, semi-structured interviews based on the rigor cycle were conducted first to develop improvement suggestions (See Appendix 9.3). Two semi-structured interviews with certified MSU+ auditors and experts from a consulting agency and Government led to further identification of improvement suggestions and refinement of previously identified ideas. Together with suggestions from the rigor cycle, these suggestions were formulated as design propositions in the format of "In situation S, to achieve consequence C, do A." (Romme, 2003, p. 566). The situation part of the design propositions was differentiated into four situations: first, before a MSU+ assessment; second, during a MSU+ assessment; third, after a MSU+ assessment; and fourth, in a redesign of the MSU+ model. Afterwards, the design propositions were first sorted with regard to the situation and second with regard to the problem overview (See Table 1). After the sorting, a synthesis of the formulated design propositions led to preliminary design propositions for the evaluation phases (See Appendix 9.7).

2.2.2 Evaluate
In order to evaluate and ensure reliability, the preliminary design propositions formulated in the design cycle were presented to third parties (Aken, 2005). This was done at the professional group procurement management from PIANOo and through interviews with auditors, experts and users of MSU+. The professional group was asked to rate their agreement with the presented design propositions (See Appendix 9.4), which in combination with the provided feedback led to adjusted design propositions (See Appendix 9.7). Afterwards, four semi-structured interviews were

conducted, in which interviewees were asked for a rating of applicability of the adjusted preliminary design propositions. Unclear design propositions were not rated but questioned to receive more explicit feedback (See Appendix 9.5). Feedback from both evaluation parts was combined and synthesized in order to derive at final design propositions. These propositions were presented to the Ministry of the Interior and Kingdom Relations and PIANOo, with the goal of implementing them at selected procurement organizations in the Dutch public sector, which can be used for justification of the design propositions.

3. RELEVANCE CYCLE

The relevance cycle elaborates on the relevance of the found problems. Concerning the interrater reliability, Cohen's kappa was 0.701, which can be interpreted as substantial agreement between the two raters (Landis & Koch, 1977). Problems were weighted based on frequency in the interviews; mentioned once was assigned low weight, mentioned twice led to medium weight, while at least three times mentioned meant high weight. Weighting revealed that most problems are related to themes of assessment results and content (See Table 1).

Problems falling under the content theme and under the process theme were regarded as influencing the perceived relevance and applicability of MSU+. If the content is regarded as problematic, this means there might be criteria missing, which makes it difficult to apply MSU+ during a measurement. Furthermore, if with regard to content topics are missing, organizations cannot identify themselves with MSU+, leading to low perceived relevance. In contrast, problems belonging to theme of assessment results were perceived to influence the perceived relevance of MSU+, while the context theme could neither be related to relevance nor applicability. Assessment results are the outcome of the assessment process and in order for organizations to follow-up the results, they need to be perceived as relevant. Context could neither be related to relevance nor applicability as it was only mentioned by few interviewees, visible in the low weight assigned to this.

3.1 No or low weight problems

Overall, three sub categories did not to constitute a problem. The amount of processes is regarded as fitting by all interviewees as the strategic and enabling processes of MSU+ represent the purchasing activities in public organizations. The possibility to compare to others was regarded as being sufficiently provided. This was reflected in the statement of one interviewee who described the added value of MSU+ as providing a common semantic of how procurement is looked at. Considering the type of assessment, both self and expert assessments are applicable for MSU+, however the purpose of the assessment should be considered in the choice for a certain assessment type. For benchmarking, expert assessment was regarded as appropriate, while for the purpose of self-learning either self assessment or a combination of both assessments was considered appropriate.

Meanwhile, three categories constituted only small problems as perceived difficulties with regard to the process of applying the model and the context were perceived as low. Neither did 3 out of 5 interviewees regard the strict step principle as too strict, nor was the applicability across different types of organizations in the public sector seen as problematic. "Although it's a strict step model you can still customize the model and then fit it upon your own company" (Relevance cycle: interviewee 1). Concerning the context, only one interviewee mentioned that acceptance of MSU+ in the organization is important and can be fostered through top management and third party commitment.

3.2 Problems with regard to content

Problems with regard to content showed, that 2 of the 5 interviewees perceived MSU+ as not public sector specific enough and incomplete since new public sector developments are missing in the model. Mentioned possible additions to

Table 1. Overview of perceived problems of the MSU+ model from relevance cycle.

Theme	Category	Sub category	Weighting of problem
Content	Public sector specificity	Inclusion of legislation	Low weight
		Process criteria public sector specific	Medium weight
		Completeness (New public sector developments missing)	Medium weight
		(Non-) Accessibility of high scores	Low weight
	Maturity levels	Applicability of detailedness	Low weight
		Amount of maturity levels	Low weight
	Processes	Problematic or difficult to measure processes (Strategic processes 5 and 6 and enabling processes 4, 5 ,6)	High weight
	Strict Step Principle	Freedom in the model	Low weight
Process	Applicable across whole public sector	Applicability across different public sector organizations	Low weight
	Strict Step Principle	Strictness	Low weight
Assessment results	Presentation of results	Spider diagram presentation	Low weight
		Visibility of required improvement steps	Medium weight
		Simplicity of presentation of results	Medium weight
	Benchmarking usefulness	Results follow-up	High weight
		Score perceived as grade	High weight
	Perceived Usefulness	Score recognizability	Low weight
		Low scores	Medium weight
		Feeling of satisfying the model	Medium weight
		Added value of high score	Low weight
Context	Acceptance of model across organization	Visibility of MSU+ model in organization	Low weight

MSU+ include sustainability or sustainable procurement, cradle to cradle, social return, best value procurement (BVP) and the new Dutch procurement law. All interviewees regarded certain processes as problematic or difficult to measure, namely strategic processes 5 and 6 due to the hidden relevance for the public sector while enabling processes 4, 5 and 6 were perceived as relevant, but achieving low scores during a MSU+ assessment. One interviewee mentioned that strategic processes 5 and 6 are regarded as not applicable in the public sector, as organizations restrict it to tangible products and not consider services. Both enabling process 4, procurement performance indicators, and enabling process 5, IT for procurement, were mentioned as scoring low due to low focus on these topics in the public sector and therefore it could be researched if these processes constitute a problem and could be adjusted. Enabling process 6, human resource management, is seen as badly recognized in the public sector and it is perceived that public organizations score low because procurement professionals do not receive financial rewards, making scores above maturity level 2 in most public sector organizations impossible.

3.3 Problems with regard to assessment results

Regarding the assessment results, the presentation of results was mentioned in 3 out of 5 interviews as problematic due to unclear visibility of required improvement steps. Moreover, the manner of result presentation was regarded as being possibly incomprehensible for non-experts in 4 out of 5 interviews. As one interviewee framed it: "A simplification in presenting [assessment results] would help" (Relevance cycle: interviewee 3), while the interviewee who was assessment participant, mentioned that good knowledge of MSU+ is required in order to understand the assessment results. If no interpretation of the assessment results is provided, then "it would not be clear to everyone what is meant by it" (Relevance cycle: Interviewee 4). In addition, 4 interviewees mentioned that clients perceive maturity level scores as grades, while 2 interviewees felt that low scores provide no motivation for clients and clients therefore feel like satisfying the model. One interviewee describes this as that the audited organization asks itself why it has a maturity level of 1, while the organization feels like having its processes well organized. Lastly, 3 interviewees regarded the follow-up of assessment results as problematic, as "the measurements and results get lost in the drawers afterwards" (Relevance cycle: interviewee 1).

3.4 Focus for this research

From the problem overview on the level of category, public sector specificity, presentation of results, benchmarking and perceived usefulness, as well as acceptance of the model across the organization were mentioned as attention points by interviewees in the design cycle (See Table 1). When combined with the weighting from the relevance cycle, the focus changed slightly as acceptance of the model was only mentioned once as a focus point by one interviewee and also had a low weight in the relevance cycle. However, the sub category of problematic processes had a high weight in the relevance cycle and was therefore added to the focus points.

As a result, public sector specificity, problematic processes and the theme of assessment results were considered most problematic and therefore regarded as focus points for this research. Public sector specificity included sustainability or sustainable procurement, cradle to cradle, social return, BVP and the new Dutch procurement law, while under the problematic processes the strategic processes 5 and 6 as well as the enabling processes 4, 5, and 6 were considered. The complete theme of assessment results was considered as several of the underlying categories were mentioned as attention points by interviewees and in addition most sub categories have medium to high problem weight. Moreover, the problem of the strictness of the strict step principle, which falls under the process of applying MSU+, was considered in further analysis. Although this concept received only a low weight, the opinions were very diverging and in addition this problem was mentioned beforehand as a criticism of the model.

4. RIGOR CYCLE

The existing knowledge base and especially other procurement maturity models were reviewed for improvement suggestions for MSU+ based on the problems from the relevance cycle. Telgen et al. (2011) identified five public procurement models, namely the Methodology for Assessing Procurement Systems (MAPS) by OECD (2006), the SKI Development model for public procurement in a Danish context (Møller et al., 2006), the Outstanding Agency Accreditation Achievement Award (OA4) by the National Institute of Governmental Purchasing (NIGP) (2009) as well as the Procurement Capability Review (CPR) model by the Office of Government Commerce (OGC) (2011). From the procurement maturity models of the private sector the Racecar (Veeke & Gunning, 1993), the House of Purchasing and Supply (Carter, Carter, Monczka, Slaight, & Swan, 2000), the Procurement development model (Keough, 1993), the supply-management maturity model of van Weele (Weele, Rozemeijer, & Rietveld, 1998) and the supply-management maturity model by Schiele (2007) were considered.

4.1 Public sector specificity in other models

The Racecar and CPR are applicable in the private and public sector. While the Racecar has no public sector specific elements (Telgen et al., 2011), CPR rarely mentions public sector specific criteria (OGC, 2011). Clearly visible public sector specificities are a tendering dimension in the SKI development model (Møller et al., 2006) and an authority and responsibility dimension in OA4 (NIGP, 2009). Overall, MAPS is most public sector specific, with a legislative and regulatory framework as well as an integrity and transparency pillar, which are applied on a national level (OECD, 2006). Overall the public sector models have the same public sector specificity since MSU+ is already public sector specific, although it mentions only a couple of criteria which are specific for the public sector.

4.1.1 Sustainability

Sustainability in the purchasing function can be described as sustainable procurement, which includes achieving sustainable objectives through use of all activities in the purchasing and supply process (Walker, Miemczyk, Johnsen, & Spencer, 2012). Cradle to cradle is considered as sub concept of sustainability (McDonough, Braungart, Anastas, & Zimmermann, 2003). In general, sustainability is not included in most reviewed procurement maturity models (Carter et al., 2000; Keough, 1993; NIGP, 2009; OECD, 2006; Schiele, 2007; Weele et al., 1998). In contrast, the SKI development model mentions a focus on sustainability, but provides no measurement criteria (Møller et al., 2006). IN MSU+ sustainable procurement is mentioned under the definition of procurement policy in enabling process 1. This is reflected in CPR, as CPR embraces sustainability as a broader policy goal and strategy. In addition, CPR has a key performance indicator (KPI) of achieving the sustainability targets (OGC, 2011).

4.1.2 Social return

Concerning social return, neither the exact concept of social return nor a focus on social issues could be found in other

procurement maturity models (Carter et al., 2000; Keough, 1993; Møller et al., 2006; NIGP, 2009; OECD, 2006; Weele et al., 2000). Only CPR requires social issues to be addressed, however the exact concept of social return is not explicitly mentioned (OGC, 2011).

4.1.3 Best Value Procurement

Lastly, BVP is rapidly gaining popularity in the public sector even though it was not specifically designed for the public sector. BVP is used to focus on the value for money (VFM) objective (Akintoye, Hardcastle, Beck, Chinyio, & Asenova, 2003). Nevertheless, neither BVP nor VFM are mentioned in most procurement maturity models (Carter et al., 2000; Keough, 1993; Møller et al., 2006; NEVI, 2005; OECD, 2006; Schiele, 2007; Weele et al., 1998). However, OA4 has a question in its survey which asks if the purchasing function engages in BVP (NIGP, 2009). In contrast, CPR does not mention BVP but mentions VFM with regard to strategy next to including VFM in KPI's and setting individual and team targets related to VFM (OGC, 2011).

4.2 Problematic processes of MSU+

4.2.1 Supplier integration in other models

Strategic processes 5 and 6 in MSU+ concern supplier integration in the product creation process and order realization process respectively. These processes are in other models combined into overall supplier processes such as supplier cooperation and management / 'contract management' (Møller et al., 2006), suppliers market (Veeke & Gunning, 1993) or collaborate with suppliers (Keough, 1993). In the Dutch public sector, the scores on the supplier integration processes in MSU+ are mostly low, mainly caused by the fact that these processes are not considered or not sufficient attention paid to (NEVI, 2009). This is confirmed in the Danish public sector, where the same phenomenon was found (Møller et al., 2006).

4.2.2 Performance measurement, IT and HRM in other models

MSU+ assesses procurement performance indicators in enabling process 4. A process or dimension with regard to procurement performance measurement is part of most other models as well (Møller et al., 2006; NIGP, 2009; OGC, 2011; Schiele, 2007; Veeke & Gunning, 1993), however the process labels are broader, related to control or performance measurement. In addition, other models explicitly mention spend analysis under procurement performance measurement (Schiele, 2007; Weele et al., 1998).

In enabling process 5 of MSU+ IT for procurement is assessed. IT is regarded as part of procurement maturity in most other models as well (Carter et al., 2000; Møller et al., 2006; NIGP, 2009; OGC, 2011; Veeke & Gunning, 1993). The relevance cycle revealed low scores on IT for procurement in the Dutch public sector and the same phenomenon was found in the Danish public sector (Møller et al., 2006).

Lastly, in enabling process 6 of MSU+ human resource management is measured. Human resource management or a people dimension are included in other procurement maturity models as well (Carter et al., 2000; NIGP, 2009; OGC, 2011; Schiele, 2007; Veeke & Gunning, 1993).

4.3 Presentation of assessment results

Maturity assessments results are frequently represented on spider diagrams in the fields of procurement (OECD, 2006), supply chain (Manrodt & Vitasek, 2004), risk management (Zou, Chen, & Chan, 2009) and project management (Cooke-Davies & Arzymanow, 2003). Concerning the score presentation, results are either compared to targets (OGC, 2011) or to the best practice score (Guth, 2010) and then presented on a stoplight with five or three colors (OGC, 2011). In addition, other maturity models do not mention scores of the maturity levels, but assign names per stage or maturity level (Batenburg & Versendaal, 2008; Cousins, Lawson, & Squire, 2006; IBM, 1995; Keough, 1993; Møller et al., 2006; OGC, 2011; Schiele, 2007; Weele et al., 1998). All maturity models acknowledge that there is one final stage of excellence, which ensures the added value of a high score (Carter et al., 2000; Keough, 1993; Møller et al., 2006; OECD, 2006; OGC, 2011; Schiele, 2007; Weele et al., 1998).

Regarding the actual presentation of improvement points, a cascade of process criteria can be presented (Brinkkemper, 2006). An assessment report can end with an action plan (OECD, 2006), which provides insight in required improvement points and assigns priorities. Furthermore, the SKI development model assesses the readiness to implement these actions through a change dimension in the model (Møller et al., 2006). With regard to follow-up of assessment results, the purchasing absorptive capacity (Schiele, 2007) is mentioned as needing to be high enough to be able to implement changes. Concerning MSU+, the usage of Kotter's (1996) change management model (NEVI, 2009) is recommend to ensure implementation of improvement points. In addition, to increase the perceived usefulness for the assessed organization, the SKI development model distinguishes between a light and an excellence version (Møller et al., 2006), whereas MAPS leaves score aggregation open to auditors (OECD, 2006). Moreover, the importance of clearly communicating purpose, application, participation and goal of the maturity model upfront is stressed (Bruin, Freeze, Kaulkarni, & Rosemann, 2005).

5. DESIGN CYCLE
5.1 Develop/Build

The improvement suggestions from the rigor cycle were combined with suggestions from interviews of the relevance cycle next to additional interviews in the design cycle with the goal of getting further design suggestions. For all suggestions relating to the situation of a redesign of MSU+ preliminary design propositions were developed (See Appendix 9.7). During interviews many recommendations were mentioned which relate not to a model redesign and were therefore combined as tips and tricks. A distinction was made in general tips and tricks as well as tips and tricks especially for auditors and the to-be assessed organization (See Appendix 9.8).

5.1.1 Public sector specificity

Concerning the content and especially the completeness of MSU+, several design propositions relate to incorporating sustainable procurement, social return and BVP in certain strategic and enabling processes. It was recommended by interviewees not to make a separate process as the new developments mentioned above relate to existing processes and a new process would undermine the model, as the model is already based on best practices and processes in procurement. Sustainable procurement could either be included in the process description or under certain maturity levels of strategic processes 2, 3, 4, and 7 as well as in enabling process 4. "I think if it's a must to have sustainability, then it's a strict step thing. So you should place it somewhere in the maturity level as criteria" (Design cycle: interviewee 2). Next to that, social return could be included in the same manner under strategic processes 2 and 8 and enabling process 1. Lastly, BVP could be included under strategic processes 2, 4, 5 and 8. As interviewees disagreed with regard to including the concepts in

the process description or under the maturity levels, special attention was given to including sustainability, social return and BVP in the evaluation at the professional group. In addition, from the rigor cycle and interviews it did not become clear which parts of and how to include the new Dutch procurement law, which was therefore asked in the evaluation phase.

With regard to the perceived problematic strategic processes 5 and 6 as well as enabling processes 4, 5, and 6 various propositions were identified. Strategic processes 5 and 6 could be combined into one process, while the relation to policy needs elucidation in strategic process 5. Another proposition is to discard the processes, as a government was not regarded as a supply chain organization which questions the relevance of strategic process 6 for the public sector and for strategic process 5 it was questioned whether a high score is necessary. Enabling process 4 could be renamed to 'control / performance management', with an explicit requirement of executing a spend analysis. Meanwhile, interviewees advised that enabling process 4 is not the problem, but the non-existence of performance measurement in many public organizations. "The problem often is that, especially in public companies, the reporting cycle doesn't include those measurement points for purchasing" (Design cycle: interviewee 2).

Analysis of suggestions for enabling process 5 led to no design propositions, as not the process but the non-existence in the Dutch public sector was perceived as the problem: "I think the criteria are somewhat outdated, so it should be quite easy for all to score a 10" (Design cycle: interviewee 2). Nevertheless, in the evaluation phase certified auditors were asked if they perceive that process as difficult to measure due to possible vagueness of the process criteria. Visible everywhere in MSU+ and not only enabling process 6, the term multidisciplinary teams requires a clearer explanation and could possibly be made stricter. In addition, enabling process 6 specifically would benefit from clarification of the term reward through stating that the link with a financial reward is not obligatory. Interviewees mentioned that although the public sector cannot give financial rewards, performance or result achievement can be discussed in an annual appraisal and would therefore be judged and considered through an appraisal.

5.1.2 Process of applying MSU+
Regarding the process of applying MSU+, proposed design propositions for the strictness of the strict step principle contradict each other ranging from keeping it to loosening it. As one interviewee sees it: "If you leave the strict step principle out, then you cannot assure that the company has done everything to achieve that high maturity level" (Design cycle: interviewee 2). In addition, it was perceived that the strict step principle ensures that organizations can clearly see where they are currently standing and it ensures that scores of different organizations are comparable. In contrast, with regard to loosening the strict step principle, an interviewee argued that as most organizations are on maturity levels 1 to 4, it would be interesting to get a more extended view on these levels. This could be achieved through a distinction in mandatory and obligatory criteria, either related to a-b-c criteria or legitimacy, transparency and cost-effectiveness. One interviewee mentioned that in public organizations also the political interest influences procurement, therefore the room for the excellent organization is restricted. As a result, a closer look should be taken at the lower levels as procurement functions have control of these and can improve through doing things better, while organization wide commitment is needed for reaching higher levels.

Furthermore, for the to-be assessed organization not relevant criteria could be discarded in the assessment. Pertaining to application of MSU+ in different public sector organizations, a government version of MSU+ could be developed, which reflects in a third set of processes those processes taking place between shared service organizations (SSO's) and departments and purchasing performance centers (IUC's) respectively. This however is viewed critically by several interviewees, because "if you create your own margins within the model you can't compare your own maturity with others. So, you would be fooling yourself" (Design cycle: interviewee 2).

5.1.3 Presentation of assessment results
Relating to the presentation of assessment results, the spider diagram could be replaced by either a bar chart or a line chart, as these are more commonly used for result presentation in general, and are therefore better understandable. Moreover, the scale of the spider diagram could either be adjusted to reflect 0.5 steps or remain as it is currently. Next, one design proposition assigns names to all maturity levels of MSU+ based on other procurement maturity models. A further possibility would be to relate the stages of the supply-management maturity model of van Weele (Weele et al., 1998) to ranges of maturity levels of MSU+ to give organizations a better idea on where they should score on MSU+. This provides "an idea of which part of the model is relevant for me [as an assessed organization]" (Design cycle: interviewee 1). Another design proposition wants to replace the currently used table with red and green marked process criteria by a cascade. On the cascade all criteria falling under a maturity levels per process could be presented in green and red, existing or not existing, to clearly show which of the required criteria are not yet existing and need to be focused on after the assessment.

Several problems of MSU+ are addressed through the idea to present the results as a stoplight. This would portray per process the actual maturity level compared to the target maturity level, so a process which is on target is represented in green. Comparing to a target score would set direction for an assessed organization, as it was mentioned in interviews that the average benchmarks scores do not provide direction for the assessed organizations. Interviewees regarded it as important that before the measurement you set a target based on where you want to be in the model or based on your strategy, because "you cannot have an excellent procurement office in a still growing or exploring or mediocre organization" (Design cycle: interviewee 1). Moreover, it is proposed not to present average scores to the assessed organization or to leave score aggregation open to auditors.

Finally, in the assessment report an action plan should be presented to the assessed organization, which states per process the score, the stoplight color status, the proposed actions and the priority of those actions. However, an interviewee warns: "If you keep discussing the figures, or discussing the report or discussing whether it should be level 2, 3, 9 or 10 and you don't start an implementation within your own purchasing department, nothing works" (Design cycle: interviewee 2).

5.2 Evaluate
5.2.1 Evaluation in a professional group
The preliminary design propositions which relate to the theme of assessment results and to including sustainable procurement and social return were presented to a professional group. They were asked to indicate if they agree or disagree with these propositions. Afterwards, a discussion about how to include new developments in MSU+ was hold. These new

developments included the new Dutch procurement law and BVP.

5.2.1.1 Presentation of assessment results

Concerning the way in which the assessment results are presented, 7 out of 8 members agreed on the presentation of actual scores compared to target scores on a stoplight per process. It was advised to clearly consider what constitutes the target score, as the target could either be related to the target of the organization or to the average score of the sector. Moreover, the action plan was perceived as valuable by all 8 members; however priority determination was regarded as a possible difficulty. Therefore the adjusted design proposition states that auditors should advise on priority, but final determination of the priority should be done by the assessed organization. For the action plan, it was seen as valuable to have auditors with a good knowledge of the public sector. Moreover, assigning names to maturity levels to make the scores better recognizable was agreed on by 6 of the 8 members; however it was questioned how high the utility of this would be.

Lastly regarding assessment results, the cascade of process criteria was regarded as enlightening by 4 out of 8 members. Through a simple change in the way results are presented, it was perceived that one can more clearly see what needs to be done to achieve the next maturity level. If additional graphs are still needed besides the stoplight presentation, the spider diagram replacement with a bar chart was preferred over the line chart (5 versus 1 out of 8 members respectively), however it was recommend to turn the bar chart by 90 degrees to improve visibility of the differences of the process scores.

5.2.1.2 Public sector specificity

Concerning the completeness of MSU+, several propositions were presented. Opinions with regard to the need to include sustainable procurement and social return diverged (4 and 3 out of 8 members respectively for inclusion in MSU+). It was mentioned that there are other policy goals as well and the two concepts were partly seen as too restricted, belonging to the head concept of corporate social responsibility. Advice by the professional group ranged from sufficient representation of the concepts in criteria related to strategy, to a need for inclusion in maturity levels and process descriptions. Therefore, sustainable procurement and social return were considered again in the interview evaluation (See Appendix 9.5).

In these interviews, it was stated that BVP's inclusion in MSU+ was not seen as applicable, as different manners of procurement are already mentioned, requiring no further distinction into BVP or any other concepts. Concerning the new Dutch procurement law, it was advised to include the motivation obligation, which for example entails justification by the buying organization for choice of procedure or supplier. In several processes and maturity levels the motivation obligation could be added, ranging from thinking of it, trying to do it, before and afterwards and considering quality reasoning (See Appendix 9.5).

5.2.2 Evaluation through interviews

The interview was structured in three parts, namely presentation of found problems of the relevance cycle, a rating of agreement of presented design propositions and questions concerning design propositions. The questions in the third part were used for clarification purposes. Therefore interviewees were asked if they perceive the necessity to include corporate social responsibility and the underlying concepts of sustainability, social return and a focus on innovation. If the necessity was seen, examples of how and where to include these concepts

were shown to receive feedback. The interview ended with questions regarding the perceived relevance and applicability of the design propositions. In the following the answers of the third part and of all ratings of the second part with which at least 3 interviewees showed agreement or disagreement, are described.

Concerning the added value of this research, 3 of the 4 interviewees perceived that the presented design propositions solve the perceived design problems. More specifically, 2 interviewees felt that problems with regard to public sector specificity and the presentation of assessment results are sufficiently addressed through the design propositions, while another interviewee saw these problems addressed in a limited manner. Related to the research question, 2 of the 4 interviewees perceived that the design recommendations ensure a higher or better applicability. However the concern was mentioned that including all design propositions would lead to a lower applicability, because it would make the model too extensive. Regarding the goal to increase the relevance of MSU+ for the Dutch public sector, 2 out of 4 interviewees felt that this is achieved through the design propositions.

5.2.2.1 Public sector specificity

With regard to including new developments such as sustainable procurement, the interviews provided clear results. CSR and the underlying concepts of sustainable procurement, social return and a focus on innovation were not regarded as necessary to include in MSU+ by 3 of the 4 interviewees. This was reflected in the fact that 3 interviewees feel that these concepts are sufficiently included in the term of 'laws and regulations', which is visible in the maturity level criteria of several processes. In addition, the above mentioned concepts were regarded as currently being the focus of discussion but other concepts could possibly emerge in the next years. It was regarded as the task of the purchaser to know the for the organization applicable laws and regulations, and during the assessment it should be asked what has been done to apply the laws and regulations. Furthermore, 3 out of 4 interviewees agreed on not needing to update MSU+ with regard to the new Dutch procurement law, as it was not perceived as necessary and already included under the term of 'laws and regulations'.

Design propositions with regard to content showed that all of the interviewees did not want to make the term multidisciplinary teams stricter. One interviewee mentioned that multidisciplinary can easily be measured through posting a question if a stakeholder analysis was executed. In addition, 3 of the 4 interviewees agreed that combining strategic processes 5 and 6 would not be of added value, while all interviewees agreed that these two processes should not be discarded overall. A mentioned reason was that interviewees did not wish to change the structure of the model. Moreover, innovation was regarded as relevant for the public sector and especially for the bigger public organizations like ministries who will probably use public private partnerships more often in the future. However, 3 out of 4 interviewees agreed that at maturity level 1 of strategic process 5 an addition could be made, which states that product innovation as a topic can be visible in the purchasing policy.

5.2.2.2 Process of applying MSU+

Concerning the design propositions related to the process of applying MSU+, interviewees agreement is very high. A Government version of MSU+ with a third set of processes taking place at IUC's and SSO's was not considered as applicable by 3 of the 4 interviewees. It was recommended that auditors need to be trained in translating the general public

model to the specific environment of the to-be assessed organization instead of making several versions of MSU+.

With regard to the strict step principle, 3 out of 4 interviewees agreed that the strict step principle should remain as it is. This was reflected in the fact that all interviewees did not agree with splitting criteria per maturity level in a, b and c, nor did 3 of the 4 interviewees agree with a distinction in mandatory and optional criteria based on legitimacy, transparency and cost-effectiveness. Splitting criteria per maturity level was regarded as undermining the strict step principle and therefore the model, and was merely seen as window-dressing in order not to have a score of for example 1.

5.2.2.3 Presentation of assessment results

Related to the presentation of assessment results, 3 out of 4 interviewees did not have an opinion concerning the possible replacement of the spider diagram by a bar chart. Interviewees were questioning how difficult it actually is to understand a spider diagram and furthermore mentioned that if advisable then the bar chart should be added next to the spider diagram. However, 3 of 4 interviewees agreed that for better score recognizability, names or labels should be assigned to the maturity levels, while 3 of the 4 interviewees did not agree with relating the model of Keough (1993) or van Weele (Weele et al., 1998) to maturity levels of MSU+. Reasons for the disagreement of relating MSU+ to van Weele's model were various. They ranged from choosing only one model and thoroughly applying that, to not making MSU+ too scientific and therefore possibly being rejected by the rest of the organization or regarded as confusing. An interviewee explained his answer by stating that MSU+ has the association that a maturity level of 3 is better than a maturity level of 2, while it is difficult to convey this relation through names per maturity levels.

Clear agreement between interviewees existed with regard to replacing the table with red and green criteria per process with a cascade of the process criteria (3 out of 4 interviews). However, it was advised to pay attention that the presentation of assessment results does not become too complex. Moreover, 3 of the 4 interviewees agreed with the stoplight presentation of the maturity level score compared to a target score, with an obvious preference for the target score being related to the strategy and objectives of the organization (3 out of 4 interviews). It was agreed by 3 of the 4 interviewees that the target score should not be set as the average benchmark sector score, but if benchmarked with others, the organization should compare to the best in that sector and not the average.

6. DISCUSSION, CONCLUSION AND RECOMMENDATIONS

6.1 Discussion

The results of this research require discussion with regard to three topics.

Firstly, with regard to sustainability or sustainable procurement, it is acknowledged that this concept is increasingly utilized by government to achieve their policy objectives (Marron, 1997; McCrudden, 2004), however it is only seen as one method to achieve objectives for society with several other methods still possibly emerging such as social return (Coggburn, 2004). This poses the question which new developments and concepts should actually be included when updating procurement maturity models.

Organizations in the public sector have more regulations to comply with than private companies with regard to applying CSR in their procurement process (Pratt, Rendon, & Snider, 2012). Therefore, this argues for a sufficient inclusion of sustainability and social return under the compliance with laws and regulations in a public procurement maturity model. The exact specification on how to include sustainability in project management has been studied (Silvius & Schipper, 2010), however this detailed prescription of how to do sustainable procurement does not fit to the process model MSU+, which should be applicable across the whole public sector. If the content of MSU+ is too prescriptive, MSU+ is difficult to apply at organizations across the whole public sector. The different public sector organizations such as municipalities or ministries have various tools at their hand for fostering sustainable or social objectives (Preuss, 2009), which argues for not including specific techniques but an overall focus on sustainability or social return in MSU+.

Secondly, the results show that once a choice for a certain (public) procurement maturity model was made, the underlying basis of the model should remain the same when updating the model. This is clearly visible in all contrasting opinions about the strict step principle. Staged maturity models involve fulfilling all criteria of a maturity level or stage before proceeding to the next stage (Lahrmann & Marx, 2010; Peldzius & Ragaisis, 2011) which applies for MSU+. The opinions about the strict step principle contrast. On one hand the strict step principle provides a clear overview on where an organization stands and ensures that higher maturity levels mean higher performance. On the other hand, the strict step principle is regarded as too strict as due to small missing criteria organizations cannot proceed to a next maturity level. Interview and evaluation results show that however a change of the principle is perceived as undermining the model, proving that the structure of a procurement maturity model should not be changed in an update. It is described in the interviews that MSU+ contains "the ingredients for an excellence purchase organization. You can leave the ingredients out, but the question is, will it still be excellent?" (Relevance cycle: interviewee 1). All final recommendations relate to small additions or further clarification of terms or of the way the assessment results are represented, while the structure of MSU+ remains the same.

Thirdly, for successful benchmarking not only the model needs to be relevant, but public organizations need to commit to continuous improvement and to implementing the identified improvement points (Magd & Curry, 2003). The perceived higher relevance of MSU+ by interviewees after this research, might help that benchmarking across the Dutch public procurement sector will increase. Especially the change in the presentation of assessment results adds to the higher perceived relevance, as assessment results were found to be related to the perceived relevance of MSU+. Comparing to a specific target based on where the assessed organization expects to be and clearly showing required improvements on an action plan make MSU+ and its assessment results specific for the assessed organization, thereby increasing the perceived relevance for the assessed organization.

6.2 Conclusion

This paper has presented a design research approach to identify possible improvements for the public procurement maturity model MSU+. As the goal of the research was to ensure a better fit between public sector requirements and the model and to ensure that organizations are motivated by the assessment results, it was desired to increase the relevance and applicability of MSU+. The research question was therefore formulated as "How can the MSU+ model be improved to increase its relevance and applicability for public procurement

organizations in the Netherlands?" Half of the interviewees perceived that both relevance and applicability will increase through the presented design propositions. In addition, the majority of interviewees felt that the problems with regard to the public sector specificity and the presentation of assessment results were sufficiently addressed, while only 1 interviewee saw them solved in a limited manner. Concluding the proposed design recommendations seem to increase the relevance and applicability of MSU+.

6.3 Managerial recommendations

The final recommendations are based on all evaluation outcomes, namely the presentation at the professional group as well as the interviews and the researcher's acquired knowledge throughout this research.
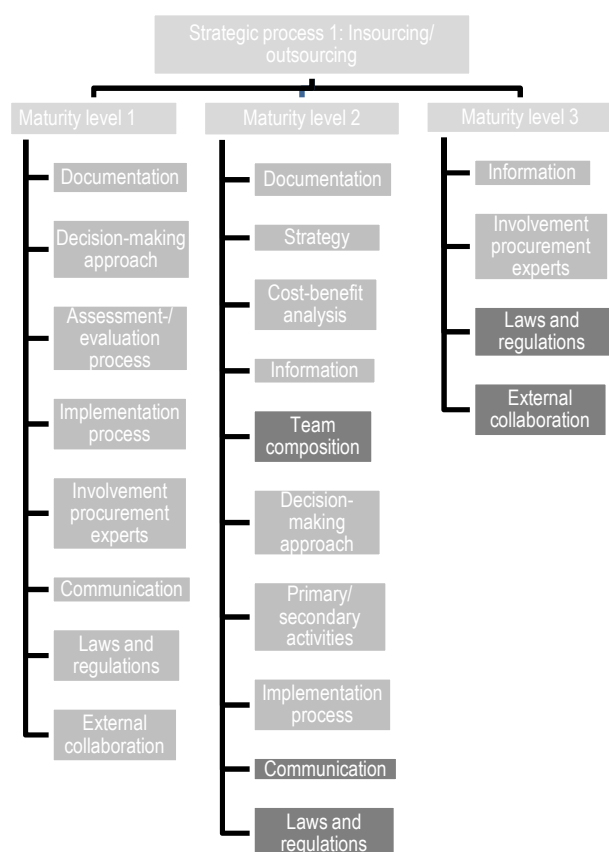

Figure 4. Example cascade of process criteria for strategic process 1[1].

6.3.1 Public sector specificity

In order not to make MSU+ too extensive and ensure that organizations in the public sector have enough freedom on how to execute sustainable procurement and social return, it is recommend to solely mention the two concepts with regard to purchasing policy. Both concepts were regarded as being sufficiently included under the term of laws and regulations. Furthermore, sustainable procurement and social return should not be added at the maturity levels but in process descriptions or the glossary to leave a free choice to every organization. Purchasing policy is defined in the glossary, where sustainable procurement is already mentioned and social return should be added. This also includes updating enabling process 1, where purchasing policy is mentioned in the process description.

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[1] This example is based on an organization with a target score of 3 for strategic process 1. This overview should be presented at least for all maturity levels up to the target level/score.

Furthermore, it is recommended to add at strategic process 2 under the process description a sentence which states that purchasing policy takes sustainable procurement and social return into consideration.

With regard to the new Dutch procurement law, it is recommended not to add it in MSU+, as the law clearly falls under the term 'laws and regulation' which can be found at several maturity levels at several processes. Laws can change or adjust quickly, which would require a regular update of the model to ensure it is relevant, which is time-consuming. BVP was regarded as a manner of procurement, which organizations can choose themselves and should therefore not be added to MSU+.

6.3.2 Problematic processes and the strict step principle

Regarding the perceived problematic processes, it is recommended to leave strategic processes 5 and 6 in MSU+. Although these are not considered relevant by all public organizations, they should be pursued by public organizations to become excellent. However, it is recommended to add to strategic process 5 at maturity level 1, that for demonstration if product or process innovation is a topic in the organization, it can be included in the policy. Concerning enabling process 4 and 5 nothing should be changed, as for both the non-existence in the Dutch public sector was seen as the cause of organizations scoring low. Meanwhile, for enabling process 6 the word reward should be more clearly explained in the process description under the explanation of the table. This explanation should include, that a reward does not need to be of financial nature and that the performance is also measured if mentioned in the appraisal. Overall, it is recommend to further specify the definition of multidisciplinary teams in the glossary, so that it is understood that team members do not need to be from different departments mandatorily but from different disciplines, for example finance and marketing.

Table 2. Example action plan for strategic processes[2].

Processes	Status	Score	Proposed actions	Priority
Strategic processes				
1. Insourcing / outsourcing	Red	1		
2. Commodity strategy development	Orange	2		
3. Supply base optimization and management	Orange	3		
4. Supplier partnership	Orange	1		
5. Supplier integration in product creation process	Green	1		
6. Supplier integration in order realization process	Orange	3		
7. Supplier development and quality management	Red	1		
8. Strategic cost management	Orange	1		

Concerning the process of applying MSU+ it is recommended to leave the strict step principle as it currently is, although very contrasting opinions exists. This is justified by the wish not to undermine the model and organizations scoring resultantly higher than they should, and also to keep MSU+ close to its origin, the MSU model, as mirroring with the private sector was regarded as important by interviewees. "The strict step principle

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[2] The status column of the action plan should, if possible, be colored in the corresponding colors instead of just mentioning the color names.

assures that you have to do all the elements, so you really have to base the process in your organization" (Relevance cycle: interviewee 3).

6.3.3 Presentation of assessment results

Concerning the presentation of assessment results, the recommendation is to leave the spider diagram for the benchmark comparison, but to add the stoplight presentation to make scores better recognizable for the assessed organization. The stoplight presentation should present the actual maturity level score compared to the target score maturity level. The target score should be set up front to the assessment by the auditor together with the to-be assessed organization based on the strategy and objectives of the organization. Determining the color of the stoplight should be based on the following rules:

1. If the actual score is equal or higher to the target score, it should be presented as green.
2. If the actual score is one point lower than the target score, it should be presented as orange.
3. If the actual score is two or more points lower than the target score, it should be presented as red.

The colors should then be represented per process in order to provide an overview which processes differ much from target and require attention, which can easily be done by coloring the process fields in Figure 1 and 2. Also related to the assessment results presentation, after having an overview which processes require attention, the missing criteria per process should be represented in a cascade instead of in the currently used table (See Figure 4).

Related to the presentation of assessment results, it is recommended that auditors present an action plan in the assessment report for both strategic and enabling processes. Of course, no actions are required if the organizations performs on target level (See Table 2). Priority should be determined based on the recommendation of the auditor of what should first require attention. The action plan table provides a clear overview, however it is recommended that overall auditors select three main recommendations to present to the organization as this was regarded as "the added value of an assessor" (Relevance cycle: interviewee 3).

6.3.4 Recommendations for the Dutch Ministry of the Interior and Kingdom Relations

The specific characteristic of IUC's and SSO's is that they are involved in the later stages of the procurement process as they are not procuring organizations, but have a more supervising role. Therefore, SSO's and IUC's should be asked if they perceive that next to the strategic and enabling processes of MSU+ also other processes take place in procurement, an example would be the sourcing process. If they perceive that for them relevant processes are missing, a third set of processes could be added to MSU+ which possibly portrays the processes taking place between SSO's and IUC's and departments respectively. Attention should be paid to adding a third set of processes, leaving all other processes and criteria of MSU+ as they are, to ensure that benchmarking with other public sector organizations is still possible.

6.4 Suggestions for further research and limitations

Several directions for future research can be formulated based on this paper. First, the adjusted MSU+ model with all proposed recommendations of this research should be tested in a pilot phase, as this was not possible in this research due to the limited amount of time. Concerning the managerial recommendations of this research, it is suggested to execute further research to identify the applicable names or labels for the maturity levels of MSU+. These names could be closely related to other procurement maturity models, however future research should closely consider the wishes of users of MSU+ to ensure the names are relevant for them. Moreover, names for all maturity levels could possibly assist in quickly identifying target scores upfront to the assessment as names can provide an idea what a maturity level contains. This would save time as not all criteria per maturity level and process need to be considered to identify a target score.

The low amount of interviews leaves the question open if the weighting of the problem would be the same if more people were asked. It could be possible that a problem is assigned low weight, because it was only mentioned once during the interviews, but can still be very relevant for the Dutch public sector. Therefore, further research should consider presenting the found problems to a bigger group of public sector employees who have experience with MSU+ to take their opinion into account about the problems and receive a rating of importance.

With regard to the update of procurement maturity models, further research should consider when an update is required and what the extent and frequency of possible updates should be. Furthermore, as MSU+ has been developed specifically for the Dutch public sector, based on the private sector model MSU, it would be interesting to research MSU+ in the international context. Two possible research scenarios in the international context are possible. First, the whole MSU+ model as it is now could be used to assess the public procurement maturity in another country to identify if the model is applicable in that national context. New design propositions can be formulated based on this. By executing case studies in several countries, the external validity of MSU+ could be increased. Second, another interesting topic for further research would be to identify all public sector specific criteria of MSU+ in order to see if these are specific for the Dutch public sector or also apply in other national contexts.

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9. APPENDIX

9.1 Interview questions in the relevance cycle

1. How have you experienced working with MSU+?
2. What do you see as problems/difficulties of the MSU+ model (ask further when first answer is said)?
3. What do you think of the number of processes of the MSU+ model (strategic and enabling)?
   a. Do you regard certain processes as problematic or difficult to measure? If yes, which processes?
   b. Do you regard certain processes as not relevant? If yes, which processes?
   c. Are there topics or processes which should be added to the model? If yes, which processes?
4. What do you think of the strict step principle?
5. MSU+ knows 10 levels of maturity. What do you think of the amount of maturity levels?
   a. Do you think the high level (for example 8 upwards) can be reached by public procurement organizations in the Netherlands? If no, why not?
6. In literature it is stated that maturity models should directly show possible improvements. What do you think of the way MSU+ displays possible improvements?
7. What do you regard as fitting for the MSU+ model: self assessment or expert assessment?
8. What do you think of the prescriptive nature of MSU+ (telling what is good, exact criteria for every level)?
9. What do you think of the way the results are presented (show example of presentation)?
   a. Does the presentation of results on a spider diagram appeal to you? If not, why not?
   b. Do you immediately see possible points for improvement the way the results are presented? If not, why not?
10. Adhering to legislation and regulations is important for public procurement organizations. What do you think of the way legislation and regulations are included in the MSU+ model?
11. How could the MSU+ model be changed in your opinion (global, spontaneous)?

9.2 Coding scheme for interviews from relevance cycle

Theme	Category	Subcategory	Explanation	Coding
Content	Public sector specificity	Legislation	Is legislation sufficiently included in the model?	Yes – No – Indifferent – Not mentioned
		Process criteria public sector specific	Are the criteria per process specific enough for the public sector?	Specific enough – Not specific enough – Indifferent – Not mentioned
		Completeness	Are new developments in public procurement represented in the model?	Yes - Topics missing (if this, which topics?) – Indifferent – Not mentioned
		Accessibility of high scores	Can Dutch public sector organizations reach high scores (6/8 or higher)?	Yes – No – Indifferent – Not mentioned
	Maturity levels	Applicability of detailedness	Is the detailedness per maturity level for every process applicable?	Applicable – Not applicable – Inconsistent across model – Indifferent – Not mentioned
		Amount of maturity levels	Is the amount of maturity levels seen as applicable?	Too many levels – Too few levels – Applicable – Indifferent – Not mentioned
	Processes	Problematic processes	Are processes seen as problematic or difficult to measure?	No – Yes (if this, which processes?) – Indifferent – Not mentioned
		Amount of processes	Is the amount of processes seen as applicable?	Too many – Too few – Applicable – Indifferent – Not mentioned
	Strict Step Principle	Freedom in the model	Is the model perceived as too prescriptive?	Yes – No – Indifferent – Not mentioned
Process	Applicable across whole public sector	Applicability across different public sector organizations	Is the model applicable for all types of public sector organizations, e.g. municipalities and ministries etc.?	Yes – No (if this, for which not?) – Indifferent – Not mentioned
	Assessment type	Self- or expert-assessment	Which type of assessment is regarded as more fitting to the model?	Self-assessment – Expert-assessment – Both/a combination – Indifferent – Not mentioned
	Strict Step Principle	Strictness	Is the strict step principle seen as too strict?	Too strict – Not too strict – Not strict enough – Indifferent – Not mentioned
Assessment Results	Presentation of results	Spider diagram presentation	Is the presentation on a spider diagram seen as value-adding?	Added value – No added value – Indifferent – Not mentioned
		Visibility of required improvement steps	Can possible improvements be seen in the result presentation?	Yes – No – Indifferent – Not mentioned
		Simplicity of presentation of results	Can clients understand the presented results without explanation?	Yes – No – Indifferent – Not mentioned
	Benchmarking usefulness	Results follow-up	Are results used for implementation and improvement?	Yes – No – Indifferent – Not mentioned
		Score perceived as grade	Do clients regard the score as a grade?	Yes – No - Indifferent – Not mentioned
		Comparability	Is it seen as useful to compare to other public organizations?	Useful – Not useful – Indifferent – Not mentioned
	Perceived Usefulness	Score recognizability	Is the meaning of a score known, for example what does a 2 convey?	Yes – No – Indifferent – Not mentioned
		Low scores	Are low scores or scoring low seen as a problem?	Yes – No – Indifferent – Not mentioned
		Satisfaction of model	Do clients perceive that they are merely satisfying the model?	Yes – No – Indifferent – Not mentioned
		Added value of high score	Does a high score mean added value or better performance for the organization?	Yes – No – Indifferent – Not mentioned
Context	Acceptance of model across organization	Visibility of MSU+ model in organization	Awareness of existence of model outside of purchasing function?	Yes – No – Indifferent – Not mentioned

9.3 Interview questions during develop/build phase of design cycle

In italics are the problem(s) on level of category mentioned that are addressed by the question.

1. Please rate the in your opinion three most attention requiring problems/difficulties (on level of category) of the MSU+ model (See Table 1).
2. *Perceived usefulness*: "Linking states of development to performance is the underlying assumption of literature on stage or maturity level models, also referred to as typologies"(Schiele, 2007). How to ensure the link between a higher score and higher performance?
   a. How to make high scores valuable?
3. *Perceived usefulness and Public sector specificity:* Scores of only 1 and 2 are perceived not motivating. Do you have an idea to solve this problem?
   a. An idea would be to split the lower levels, e.g. level 1 to 5, into sublevels, so maybe 1a, 1b, and 1c. What do you think of this idea?
   b. It was basically seen as nearly impossible for public organizations in the Netherlands to reach a maturity level higher than 8, sometimes even higher than 6. How would you approach this?
4. *Perceived usefulness and Benchmarking usefulness:* It was mentioned several times, that scores should not be seen as a grade. In addition, the meaning of scores was perceived as low, meaning that a high score is not seen as valuable. How would you solve this problem?
   a. What would you suggest to do to ensure that the benchmarking of the MSU+ model provides direction for the organization?
   b. An idea is to assign names per maturity level to increase the meaning of a score/maturity level. How would you decide on the names/labels?
5. *Benchmarking usefulness:* It was seen as a problem that assessments were not followed up, leading to a very low learning effect. How would you suggest to tackle this problem?
6. *Acceptance of model across organization:* MSU+ was seen as only being used in the Purchasing department and not visible across the organization. How would you ensure visibility of the MSU+ assessment across the organization?
7. *Public sector specificity:* The inclusion of legislation in the model is seen as insufficient. How would you suggest solving this?
8. *Public sector specificity:* It was mentioned that the model has a low recognizability, meaning that public purchasers do not recognize it as relevant as they do not perceive it as specific enough for the public sector. How would you solve this problem?
   a. Tactical purchasing was perceived as being underrepresented in the MSU+ model. How would you suggest to approach this?
9. *Public sector specificity:* As a problem was seen that new developments in public procurement are not yet sufficiently included in the model, for example social return, new Dutch procurement law, sustainability, cradle to cradle, best value procurement. How would you like to see these included in the model?
   a. Should they be included in a separate process?
10. *Strict step principle:* The strict step principle triggered contrasting opinions from useful to useless. What would you suggest to do with the strict step principle?
    a. What do you think of the idea to make some criteria per level mandatory and some optional in order to loosen the strict step principle?
    b. If you think it is a good idea, which type of criteria would you expect to be mandatory?
11. *Maturity levels:* The inconsistency in the detailedness of criteria per maturity level was seen as problem. Can you think of a way to solve this?
    a. The often occurring non-existence of multidisciplinary teams in public purchasing was seen as a reason why sometimes organizations receive a low score. How would you tackle this problem?
12. *Processes:* Several processes were seen as problematic:
    a. The enabling process 4, Procurement Performance Indicators, was seen as problematic as organizations often score low here. What would you suggest to do with this process?
    b. The enabling process 5, IT for procurement, was seen as problematic as the criteria were perceived as not being realistic. What would you suggest to do with this process?
    c. The enabling process 6, Human resource management, was seen as problematic as due to the non-existence of rewards linked to performance, public sector organizations in the Netherlands cannot score higher than 2. What would you suggest to do with this process?
    d. Both the strategic processes 5 and 6, supplier integration in product creation process as well as supplier integration in order realization process, were seen as not that relevant for the public sector. What would you suggest to do with these processes?
13. *Presentation of results:* The presentation of the results was seen as needing a lot of improvement. How would you change the way the results are presented?
    a. What would you suggest to do to ensure that required or possible improvements are quickly visible for the assessed organization?
14. *Presentation of results:* It was perceived as a problem that the model does not provide as a result if the assessed organization purchases legitimately. How would you approach this?
15. *Applicable across whole public sector:* MSU+ was seen as not fitting for a maturity assessment of an IUC (Inkoop uitvoeringscentrum) or SSO (shared service organization). What would you suggest to do?

9.4 Rating hand-out at professional group purchasing management of PIANOo

Presented recommendations	Agreement	Comment
To simplify the result presentation and make the score more recognizable for the assessed organization, present actual maturity level scores with regard to target scores in stoplight colors per process.	Agree / Do not agree / No opinion	
To clearly show possible improvements for an easy follow-up of the assessment, let auditors present an action plan to the assessed organization.	Agree / Do not agree / No opinion	
To make the presentation of missing and existing criteria per process more visually attractive, replace the table with red and green criteria per process with a cascade of the process criteria marked in red and green.	Agree / Do not agree / No opinion	
To increase the recognizability of a score and ensure that scores are not perceived as a grade, assign labels for all maturity levels.	Agree / Do not agree / No opinion	
To increase the simplicity of the result presentation, replace the spider diagram with a bar chart.	Agree / Do not agree / No opinion	
To increase the simplicity of the result presentation, replace the spider diagram with a line chart.	Agree / Do not agree / No opinion	
To increase the specificity of the MSU+ model for the public sector, include the concept of sustainability in the MSU+ model.	Agree / Do not agree / No opinion	
To increase the specificity of the MSU+ model for the public sector, include the concept of social return in the MSU+ model.	Agree / Do not agree / No opinion	

9.5 Interview questions in evaluate phase of design cycle

9.5.1 Part 1: Found problems

Table 1 was presented to the interviewees to give them an overview of the research until that point of time.

9.5.2 Part 2: Rating of recommendations

Explanation: Underlined (_____) is always an addition to already existing text. Where an appendix is mentioned, the example can be found in the overview of all preliminary and adjusted design propositions of the design cycle.

Recommendation	Agreement	Comment
Content		
Problem: Legislation was by few seen as not sufficiently included.		
1. In order to ensure the correct applicability of the model, add the word 'existing (geldende)' to all criteria about legislation and regulations (e.g. "geldende wet- en regelgeving wordt nageleefd").	□ I agree □ I don't agree □ No opinion	
Problem: Enabling process 6, human resource management, perceived as problematic due to the wording with regard to reward in maturity level 3and therefore reached low scores.		
Enabling process 6 — 2. To ensure that the meaning of the term *multidisciplinary teams* is correctly understood, add in the glossary ('Begrippen- en afkortingenlijst') of the MSU+ model under 'multidisciplinair team': *'Leden van het team zijn werkzaam op verschillende afdelingen binnen dezelfde organisatie en werken formeel of informeel samen."*	□ I agree □ I don't agree □ No opinion	
3. In a redesign of the MSU+ model, to ensure excellence of public purchasing entities, make the term 'multidisciplinary teams' even more stricter.	□ I agree □ I don't agree □ No opinion	
4. To ensure that enabling process 6 is correctly understood, add an explanation of the word *reward* under 'toelichting op de tabel': *"Het koppelen aan inkoopprestatie is ook voldaan, als aan de inkoper geen bonus betaald wordt, maar als de prestatie van de inkoper in het jaarlijkse beoordelingsgesprek besproken wordt en het zelfs een key performance indicator is."*	□ I agree □ I don't agree □ No opinion	
Problem: Enabling process 4, procurement performance indicators, was seen as requiring attention in a redesign, because organizations score low here.		
Enabling process 4 — 5. To ensure that the meaning of the process is correctly understood and reflects other procurement maturity models, change the process name of enabling process 4, Procurement Performance Indicators (Prestatie-indicatoren voor inkoop), to 'control / performance management'.	□ I agree □ I don't agree □ No opinion	
6. To include terms that are used in public procurement and reflect content of other procurement maturity models, include in enabling process 4 under 'vereisten en aanbevelingen' the following sentence: *"Een spend analyse wordt uitgevoerd."*	□ I agree □ I don't agree □ No opinion	
Problem: Strategic process 5, supplier integration in product creation process, and strategic process 6, supplier integration in order realization process, were perceived as not considered relevant by the Dutch public sector.		
Strategic — 7. To increase the relevance and applicability and be more in line with what other procurement maturity models measure, combine the processes with regard to supplier integration which involves strategic processes 5 and 6. (See Appendix)	□ I agree □ I don't agree □ No opinion	

	8. To increase the applicability and relevance, include in strategic process 5 that it can be related to the policy by including in maturity level 1 of strategic process 5: *"Niet of in mindere mate aantoonbaar dat leveranciersintegratie in product-/ procesinnovatie (PPI) een thema is, <u>bijvoorbeeld in het beleid.</u>"*	□ I agree □ I don't agree □ No opinion	
	9. To ensure the relevance and applicability for the Dutch sector, discard the strategic processes 5 and 6.	□ I agree □ I don't agree □ No opinion	

Process

Problem: Few interviewees perceived the MSU+ model as not being applicable in all public sector organizations.

10.	To increase the applicability to Government entities, make a government version of MSU+ considering the measurement of IUC's and SSO's by adding a third set of processes that take place between SSO's and departments and between SSO's and IUC's.	□ I agree □ I don't agree □ No opinion	

Problem: The strict step principle triggers contrasting opinions ranging from providing a good overview where an organization stands to being too strict.

Strict step principle	11. To make the assessment motivating and ensure results follow-up, distinguish between mandatory and optional criteria and base the distinction on whether the criteria link to legitimacy, transparency and cost-effectiveness. This should be done for the first four maturity levels for all processes. (See Appendix)	□ I agree □ I don't agree □ No opinion	
	12. To loosen the strict step principle, split the criteria per process level into a, b and c and for proceeding to next stage all need to be fulfilled.	□ I agree □ I don't agree □ No opinion	
	13. To loosen the strict step principle, indicate the criteria that are not important for the assessed organization per process and do not consider them in the score calculation.	□ I agree □ I don't agree □ No opinion	
	14. To ensure that organizations get a clear overview and that higher scores mean higher performance, do not change the strict step principle.	□ I agree □ I don't agree □ No opinion	

Assessment results

Problem: The spider diagram triggers contrasting opinions, from providing a clear overview to not adding value.

Spider diagram	15. To ensure that scores are more clearly visible, change the scale of the spider diagram to represent 0.5 steps (0.5, 1, 1.5, 2, 2.5 etc.).	□ I agree □ I don't agree □ No opinion	
	16. To ensure that people quickly understand the result presentation and simplify it, replace the spider diagram with a bar chart. (See Appendix)	□ I agree □ I don't agree □ No opinion	
	17. To ensure consistency with other maturity models and to provide an overview, leave the spider diagram in the MSU+ model.	□ I agree □ I don't agree □ No opinion	

Problem: It was perceived that for an assessed organization the meaning of a maturity level is not known, so what does it mean for an organization to be at maturity level 2 for example?

Names for stages	18. To ensure that scores are recognized and the meaning is understood, assign names or labels per maturity level. (See Appendix)	□ I agree □ I don't agree □ No opinion	
	19. To ensure a better applicability of the model and to provide organizations with an idea where they should be in the MSU+ model, relate the model of Keough or van Weele to maturity level ranges per process of the MSU+ model. The exact relation of the models should be determined by experts. (See Appendix)	□ I agree □ I don't agree □ No opinion	

Problem: The way the results are currently presented is not always quickly and clearly understandable for employees of the assessed organization. Required improvements were not perceived as being clearly visible.

20.	To ensure clearer visibility of the required improvement points, replace the table with red and green criteria with a cascade of process criteria. (See Appendix)	□ I agree □ I don't agree □ No opinion	

Problem: Required improvements were not perceived as being clearly visible. Low scores are not motivating.

Stoplight presentation	21. To increase the recognizability of a score and make required improvements more visible, represent the maturity level score with regard to a target score on a spotlight. (See Appendix)	□ I agree □ I don't agree □ No opinion	
	22. To ensure comparability to a target score, determine the target score for the organization based on the strategy and objectives of the organization and name it "Organization target score (Organisatie doelscore)".	□ I agree □ I don't agree □ No opinion	
	23. To ensure comparability to a target score, set the average score of the specific sector as target score and name it "Benchmark target score (Benchmark doelscore)".	□ I agree □ I don't agree □ No opinion	

Problem: Required improvements were not perceived as being clearly visible. Results follow-up was perceived as currently being low.

	24. To ensure that results are followed-up and required improvement points are quickly and clearly visible, an action plan should be represented to the assessed organization. (See Appendix)	□ I agree □ I don't agree □ No opinion	
	Problem: Low scores are not motivating. Assessed organization perceived scores as grades.		
Score vs. grade	25. To ensure that the organization does not feel like receiving a grade, no average score should be represented to the assessed organization.	□ I agree □ I don't agree □ No opinion	
	26. In a redesign of the MSU+ model, to ensure consistency with other procurement maturity models, leave the method of score aggregation open to the auditor.	□ I agree □ I don't agree □ No opinion	

9.5.3 Part 3: Design cycle (evaluate phase) interview questions

Explanation: Underlined (_____) is always an addition to already existing text.

1. Are you a certified MSU+ auditor? If yes, do you perceive certain processes of the MSU+ model as difficult to assess due to too low detailedness or vagueness of the mentioned process criteria?
2. Corporate social responsibility (Maatschappelijk verantwoord ondernemen (MVO)) is a concept which can include different topics, namely sustainability (Duurzaamheid), social conditions (sociale voorwaarden) and social return but also innovation. Would you suggest to include corporate social responsibility in the MSU+ model?
   a. Would you include sustainability or sustainable procurement in the MSU+ model? If yes, answer questions in Appendix 1.
   b. Would you include social conditions or social return in the MSU+ model? If yes, answer questions in Appendix 2.
   c. Would you include a focus on innovation with regard to corporate sustainability in the MSU+ model? If yes, how would you include it in the model?
3. Do you think the MSU+ model should be updated with regard to the new procurement law (Nieuwe aanbestedingswet)? If yes, answer questions in Appendix 3.
4. In the MSU+ model on several maturity levels the compliance with laws and regulations is mentioned. Sustainable procurement and social return are regulations with regard to procurement in the public sector in the Netherlands, innovation focused procurement is a policy, while the new procurement law is of course a law. Are the mentioned new developments in your opinion therefore sufficiently included under the concept 'laws and regulations (wet- en regelgeving)' in the MSU+ model?
5. For the future, it would be good to identify when the MSU+ should be updated with regard to new developments. It was mentioned during this research, that new developments in the public sector, like social return, should only be included in the MSU+ model when they are laws or regulations. What is your opinion?
6. In your opinion, are the problems and difficulties of the MSU+ model solved by the provided recommendations?
   a. Are the problems with regard to the category public sector specificity sufficiently addressed by the recommendations?
   b. Are the problems with regard to the theme assessment results and there the presentation of results, benchmarking and perceived usefulness sufficiently addressed by the recommendations?
7. In your opinion, do the provided recommendations ensure a higher or better applicability of the MSU+ model in the Dutch public sector?
8. In your opinion, do the provided recommendations increase the perceived relevance of the MSU+ model for the Dutch public sector?

9.5.3.1 Appendix 1: Sustainable procurement
9. Sustainable procurement is mentioned in enabling process 1 as sustainable procurement should be taken into account in policy making as a possible ideological choice. Is sustainable procurement through this sufficiently included in the MSU+ model? (If yes, questions 10 to 14 do not need to be answered).
10. Should sustainable procurement be included in strategic process 2? (If no, next sub questions do not need to be answered).
    a. Under 'aandachtspunten / valkuilen' the following sentence could be included: "Het Inkoopbeleid voor de strategie van een inkooppakket houdt rekening met duurzaam inkopen en social return." Do you regard this as fitting? If no, what would you change?
    b. Under maturity level 2 the following change could be made: " Het ontwikkelen van de strategie per inkooppakket is gebaseerd op intern gedefinieerde eisen aan het product en bevat een eis dat 100% duurzaam ingekocht wordt." Do you regard this as fitting? If no, what would you change?
11. Should sustainable procurement be included in strategic process 3? (If no, next sub questions do not need to be answered).
    a. Sustainable procurement could be mentioned in the process description of strategic process 3: "Een leveranciersprofiel vat de belangrijkste karakteristieken van een leverancier samen, zoals: algemene informatie (bijvoorbeeld naam en adresgegevens), organisatie (bijvoorbeeld structuur), klanten, producten / processen / markt, financieel, kwaliteit, omgeving, ontwikkeling, (productie), logistiek, service / garantie en ervaringen en het omgaan met duurzaam inkopen. Leveranciersprofielen dienen in het leveranciersselectieproces opgesteld te worden en regelmatig geactualiseerd en gecommuniceerd te

worden;" Do you regard this as fitting? If no, what would you change?

12. Should sustainable procurement be included in strategic process 4? (If no, next sub questions do not need to be answered).
    a. Sustainable procurement could be included under 'aandachtspunten / valkuilen' with the following sentence: "Gemeenschappelijke taakstellingen besteden aandacht aan duurzaam inkopen." Do you regard this as fitting? If no, what would you change?
    b. Under maturity level 6 the following change could be made: "Als 5, waarbij gemeenschappelijke taakstellingen zijn geformuleerd voor huidige projecten. Er is sprake van gemeenschappelijke definiëring van doelstellingen en er is een gemeenschappelijk planningsproces. Gemeenschappelijke doelstellingen besteden aandacht aan duurzaam inkopen. Geen bewijs dat strategieën voor de toekomst zijn afgestemd." Do you regard this as fitting? If no, what would you change?

13. Should sustainable procurement be included in strategic process 7? (If no, next sub questions do not need to be answered).
    a. Sustainable procurement could be included under 'toelichting op de tabel': "Leveranciersbeoordelingen (niveau 6) gaan verder, en beoordelen de (technische/financiële/organisatorische/....) mogelijkheden van (toekomstige) leveranciers en proberen mogelijkheden te vinden, die de prestaties in de toekomst verbeteren. Beoordelingen houden rekening met duurzaam inkopen doelstellingen en mogelijkheden." Do you regard this as fitting? If no, what would you change?

14. Should sustainable procurement be included in enabling process 4? (If no, next sub questions do not need to be answered).
    a. Sustainable procurement could be mentioned under 'vereisten en aanbevelingen': "Prestatie-indicatoren voor inkoop bevatten ook een indicator ten opzichte van 100% duurzaam inkopen." Do you regard this as fitting? If no, what would you change?
    b. Under maturity level 8 the following change could be made: "Als 7, en er zijn kwalitatieve en kwantitatieve (TCO) prestatie-indicatoren aanwezig voor de gehele productlevenscyclus van het ingekochte product. Deze indicatoren omvatten onder andere prijs, kwaliteit, afleverservice, kosten voor het niet-presteren van de leverancier en een indicator voor 100% duurzaam inkopen. De prestatiemetingen gebruikt men voor toekomstige inkooptrajecten (sourcing), nieuwe ontwikkeltrajecten en continue verbeteractiviteiten, passend binnen de regelgeving. De resultaten verbeteren continu." Do you regard this as fitting? If no, what would you change?

15. Should social return be included in strategic process 2? (If no, next sub questions do not need to be answered).
    a. Under 'aandachtspunten / valkuilen' the following sentence could be included: "Het Inkoopbeleid voor de strategie van een inkooppakket houdt rekening met duurzaam inkopen en social return." Do you regard this as fitting? If no, what would you change?
    b. Under maturity level 2 the following change could be made: "Multidisciplinaire teams zijn geïnstalleerd om een strategie per inkooppakket te ontwikkelen. Er zijn functionarissen aangesteld om de doelstellingen van de teams te formuleren, de besluitvorming over de teams heen te coördineren, gedegen te evalueren of de competenties van de teams nog overeenkomen met de strekking van de strategie en om participatie van de juiste deelnemers te organiseren. Teams komen aantoonbaar bij elkaar. Het ontwikkelen van de strategie per inkooppakket is gebaseerd op intern gedefinieerde eisen aan het product en bevat een eis dat 100% duurzaam ingekocht wordt. In de strategie wordt aandacht besteed aan social return. Deze informatie is onder andere verkregen op basis van reactief overleg met de interne klant. De focus ligt op de korte termijn en men denkt na over marktwerking. Inkoopstromen en risico analyseert men op basis van prijs en volume. Er is enig bewijs dat er aandacht uitgaat naar wet- en regelgeving." Do you regard this as fitting? If no, what would you change?

16. As the relation between social costs and resulting lower costs is not proven, social return cannot be included in strategic process 8. What is your opinion about this statement?

17. Should social return be included in enabling process 1? (If no, next sub questions do not need to be answered).
    a. Social return could be included in the process description of enabling process 1: "Het inkoopbeleid (of inkoopstrategie) is een vertaling van het algemeen beleid naar inkoop. Het zijn de algemene uitgangspunten met betrekking tot inkoop, die door de organisatie zijn vastgesteld, en die door de medewerkers in al hun beslissingen (voor zover relevant) moeten worden meegenomen. Hierin zijn ook de strategische doelstellingen voor de langere termijn opgenomen. Tevens wordt rekening gehouden met ideële keuzen (bijvoorbeeld politiek of economisch, zoals het bevorderen van de lokale werkgelegenheid of duurzaam inkopen of social return). Zo kan in het inkoopbeleid bijvoorbeeld opgenomen zijn dat bepaalde inkooppakketten lokaal moeten worden gekocht." Do you regard this as fitting? If no, what would you change?

18. From the new Dutch procurement law, the motivation obligation should be included in the MSU+ model. What is your opinion about this statement?
19. A definition of the motivation obligation (motiveringsplicht) should be included in the Glossary ('Begrippen- en afkortingenlijst'):

"De nieuwe aanbestedingswet omvat een motiveringsplicht voor de aanbestedende dienst ten opzichte van de volgende criteria:

1. Keuze van procedure (proces-verbaal)
2. Al dan niet samenvoegen van een opdracht
3. Keuze van de ondernemers die worden toegelaten tot de aanbestedingsprocedure.

In de Nieuwe Aanbestedingswet staat het als volgt:
Artikel 1.4 (1):
Een aanbestedende dienst die of een speciale-sectorbedrijf dat voornemens is een schriftelijke overeenkomst onder bezwarende titel tot het verrichten van werken, leveringen of diensten te sluiten, bepaalt op basis van objectieve criteria:

a. de keuze voor de wijze waarop de aanbestedende dienst of het speciale-sectorbedrijf voornemens is de overeenkomst tot stand te brengen;
b. de keuze voor de ondernemer of ondernemers die worden toegelaten tot de aanbestedingsprocedure.

Artikel 1.4 (3) De aanbestedende dienst of het speciale-sectorbedrijf verstrekt een ondernemer op diens schriftelijk verzoek de motivering van de in het eerste lid, onderdelen a en b, bedoelde keuze.

Artikel 2.132 De aanbestedende dienst stelt over de gunning van een overheids-opdracht en de instelling van een dynamisch aankoopsysteem een proces-verbaal op dat, indien van toepassing, in ieder geval de volgende gegevens bevat:

c. namen van de uitgekozen gegadigden met motivering van die keuze;
d. de namen van de uitgesloten en afgewezen gegadigden met motivering van die uitsluiting of afwijzing;
e. de namen van de afgewezen inschrijvers met motivering van die afwijzing,
h. de naam van de uitgekozen inschrijver en motivering voor die keuze en, indien bekend, het gedeelte van de overheidsopdracht dat de uitgekozen inschrijver voornemens is aan derden in onderaanneming te geven."

Do you regard this as fitting? If no, what would you change?

20. Should the motivation obligation be included in strategic process 4? (If no, next sub questions do not need to be answered).
    a. With regard to the maturity levels of strategic process 4 the following sentences could be included:
        i. Maturity level 1: "Aan motivering in een aanbesteding wordt gedacht."
        ii. Maturity level 2: "Er wordt geprobeerd keuzes te motiveren."
        iii. Maturity level 5: "Motivering voor keuzes in een aanbesteding wordt vooraf en achteraf gedaan."
        iv. Maturity level 8: "Motivering voor keuzes in een aanbesteding heeft een kwalitatieve redenering."

Do you regard this as fitting. If no, what would you change?

21. Should the motivation obligation be included in strategic process 5? (If no, next sub questions do not need to be answered).
    a. With regard to the maturity levels of strategic process the following sentences could be included:
        i. Maturity level1: "Aan motivering in een aanbesteding wordt gedacht."
        ii. Maturity level 2: "Er wordt geprobeerd keuzes te motiveren."
        iii. Maturity level 5: "Motivering voor keuzes in een aanbesteding wordt vooraf en achteraf gedaan."
        iv. Maturity level 8: "Motivering voor keuzes in een aanbesteding heeft een kwalitatieve redenering."

Do you regard this as fitting. If no, what would you change?

22. Are there other topics from the new Dutch procurement law that you would like to see included in the MSU+ model?

9.6 Identified possible solutions from relevance cycle interviews, rigor cycle and develop/build phase interviews of design cycle

Everything in italics was found in the interviews of the relevance cycle and of develop/build phase of the design cycle, everything in normal was found in the rigor cycle, while bold marked means not considered in further research anymore.

Preliminary design propositions
Content – Public sector specificity: Legislation
1. Ask an accountant or consultant if the assessed organization wants to know if they purchase everything legitimately. MSU+ has higher legitimacy per maturity level but provides no guarantee.
2. Add the word existing (geldende) to the criteria about legislation.
Content – Public sector specificity: Process criteria public sector specific

3. Do not make MSU+ more specific to ensure applicability across different sector organizations like hospitals and ministries.
 • Racecar (Veeke & Gunning, 1993) as well as CPR (OGC, 2011) can be applied to public and private sector organizations and have no or nearly no public specific criteria.
 • SKI development model (Møller et al., 2006) and OA4 (NIGP, 2009) are just like MSU+ focused on the public sector:
    o SKI: has a tendering dimension, description of criteria per maturity level are not public sector specific.
    o OA4: "authority and responsibility" dimension very public sector specific; process criteria mostly not focused on public sector.

4. Consider the changes in terminology and way of working since introduction/design of MSU+.

	5. *Ensure that the meaning of a multidisciplinary team is known by providing an explanation of it, for example working together.*
	6. *Make the term multidisciplinary teams even stricter.*

Content – Public sector specificity: Completeness
7. *Include new developments only in MSU+, if they are legislation or you have a 100% EMVI (economically most advantageous offer) and then include them in the maturity level criteria.*

Sustainability / sustainable procurement	8. *Include sustainability issues / sustainable procurement in strategic processes 2, 3, 4 and 7.* • Include sustainability in strategic process 4 or 7: encouraging suppliers to include sustainability targets (OGC, 2011). 9. Include sustainability in enabling process 4 as key performance indicator (OGC, 2011). 10. Include sustainability in strategy documents, therefore in strategic process 2 and enabling process 1 (OGC, 2011).
Social return	11. *Include social return in strategic processes 2 and 8.* 12. Include focus on social issues but not exactly related to social return in strategic process 2 and enabling process 1 (OGC, 2011).
Best Value Procurement (BVP)	13. *Include BVP in strategic processes 2, 4, 5 and 8.* 14. Include the VFM objective in strategy and policy (OGC, 2011), therefore include it in strategic process 2 and enabling process 1. 15. Evaluate VFM in procurement procedures (OGC, 2011), therefore include it in enabling process 3. 16. Calculate VFM savings as part of total third party spend and assess consultants with regard to fulfilling value for money (OGC, 2011), therefore include VFM in enabling process 4. 17. Use VFM in job descriptions and individual or team targets (OGC, 2011), therefore include it in enabling process 6.
New Dutch procurement law	➔ Asked in evaluation as nothing found in literature, nor specifically mentioned how to include it in interviews.

Content – Public sector specificity: Accessibility of high scores
18. *Communicate that levels 6 to 10 are more for growth in the next 10 years.* • *Communicate that higher levels mean that also the rest of the organization needs to be excellent, so above level 5 probably depends on the rest of the organization and is not in purchasing control solely, therefore there should be a focus on the lower levels first.* • *Communicate, that a 10 would mean you cannot improve anymore and no organization wants that.*
19. *Communicate that a strategic choice can be to focus on something else.*

Content - Maturity levels: Applicability of detailedness
20. *Have as less detail as possible but ensure that it is still applicable by auditors.* • *Ask auditors what they consider difficult to measure.*

Content - Maturity levels: Amount of maturity levels
21. *Bring the amount of maturity levels back to something between 4 and 6 and consider them more as ad hoc, structured, integrated, structured and integrated, structured and integrated and learning.* ➔**Not considered in design propositions, as amount of maturity levels regarded as problem with low weight.**

Content – Processes: Problematic processes
22. *Redesign the main processes.* ➔ **Not considered, as amount of processes seen as applicable.** • *Do not change the number of processes as you then will get container processes.*

Strategic processes 5 and 6	23. *Leave the processes in as they are relevant for the public sector and will probably be even more relevant in the future.* 24. *Discard the processes as they are not relevant for the public sector.* 25. *Leave processes out when you do not see any evidence of a process being used.* ➔ **Not considered as design proposition, as the amount of processes was seen as fitting and database showed that maturity levels of 0 are not existing (NEVI, 2009).** • *Discuss non-existing processes in the assessed organization for educational usage.* 26. *Combine processes with regard to supplier integration.* • The two processes are in other models not split up but constitute one part: Supplier cooperation and management / "Contract Management" (Møller et al., 2006), Suppliers market (Veeke & Gunning, 1993), Collaborate with suppliers (Keough, 1993), Operating process management (Carter et al., 2000). 27. *Bring up front parts of processes with regard to integration of suppliers in the order realization and optimizing the supplier database.* 28. *Relate strategic process 5 more to the policy of the organization.*
Enabling process 4	29. *Leave this process in as it is a requirement to have performance measurement in place in order to score higher on other processes.* • *Process is not the problem, but the non-existence of the process in the Dutch public sector due not being asked by political actors.* • Many other models have criteria with regard to performance measurement, therefore the process should stay in MSU+: Purchasing controlling (Schiele, 2007), Reporting and monitoring (Møller et al., 2006), Performance Indicators (Veeke & Gunning, 1993), KPI's and steering (IBM, 1995), Audit and evaluation (NIGP, 2009), Knowledge and performance measurement (OGC, 2011). 30. Other models have a broader name, not only focused on procurement performance indicators, therefore the name

		could be changed to "control / performance measurement".
	31.	Mention spend analysis with regard to performance measurement, therefore include spend analysis in enabling process 4 (Schiele, 2007; Weele et al., 1998).
Enabling process 5	32.	*Ask auditors if they have difficulties to assess the process to find out if more details are required..*
	33.	*Communicate that the process is not the problem, but the non-existence of the process in the Dutch public sector.* • Many other models have criteria with regard to IT for procurement, therefore the process should stay in the MSU+ model: System support (Møller et al., 2006), Information (Veeke & Gunning, 1993), Tools and IT (IBM, 1995), Knowledge/ Information management (Carter et al., 2000), procurement technology (NIGP, 2009), Intelligent client (OGC), 2011).
	34.	OA4 (NIGP, 2009) includes very detailed criteria for a purchasing information system, maybe MSU+ could include this in the description of the process to also have an educative role. → **Not considered in design propositions, as criteria either not applicable or already mentioned.**
Enabling process 6	35.	*Change the wording of reward or provide an explanation of it, to ensure that it is understood that rewards are not only financial, but also intangible and talking about results in an appraisal means rewarding performance.*
	36.	Many other models have criteria with regard to human resource management, therefore the process should stay in the MSU+ model: Human resources and leadership (Schiele, 2007), Organisation and Personnel (Veeke & Gunning, 1993), people and skills (IBM, 1995), Human resources management (Carter et al., 2000), Personnel and professional development (NIGP, 2009), Skills development and deployment (OGC, 2011).

Content – Strict Step Principle: Freedom in the model

→ Problem had low weight, nothing found in literature, therefore from discarded in the further research.

Process – Applicable across whole public sector: Applicability across different public sector organizations

37. *Train procurement managers and procurement professionals in translating the general public model to own specific environment.*

38. *Ensure that auditors know the public sector well to be able to apply MSU+ to different organizations.*

39. *Make a Government version of MSU+ focusing on IUC's and SSO's, but only if all IUC's and SSO's will use it to ensure the benchmarking possibility:*
   - *Add a third theme of processes that take place between SSO's and departments and between SSO's and IUC's.*
   - *Communicate that MSU+ is not applicable for task readiness assessment of an IUC.* → **Not considered in design propositions, as clarified with Ministry of the Interior and Kingdom relations that this is not their intent.**
   - *Manage the expectations upfront and set realistic targets, if entities, like SSO's and IUC's feel that the model is not applicable for them.*
   - *Explain SSO's and IUC's that when they score low, there is room for improvement also in all entities below them as they set the processes/ procedures.*

40. Distinguish between a light and excellence version of MSU+ based on the SKI development model, which reflect the diversity regarding size, maturity and ambition levels (Møller et al., 2006). → **Not considered as design proposition, as benchmarking across whole public sector considered as important by interviewees.**

Process – Strict Step Principle: Strictness

41. *Leave the strict step principle as it is and adjust maturity level criteria to reflect new developments although levels become more extensive.*
   - *Leave strict step principle as other models like ISO 9001 have it as well and it provides some clarity of where you are.*

42. *Distinguish between mandatory and optional criteria and base the distinction in mandatory criteria on whether the criteria link to legitimacy, transparency and cost-effectiveness.*

43. *Indicate the criteria that are not important for your organization per process and do not consider them in the score calculation.* → **Not considered as Keough (1993) states that jumping stages does not benefit an organization.**

44. Split criteria into a, b and c and for proceeding to next stage all need to be fulfilled (OECD, 2006, page 10).

Assessment results – Presentation of results: Spider diagram presentation

45. *Keep the spider diagram for the overview.*
   - In other fields where maturity is measured, the spider diagram presentation is used as well, for example for supply chain maturity (Manrodt & Vitasek, 2004; Reyes & Giachetti, 2010), risk management maturity (Zou et al., 2009) and project management maturity (Cooke-Davies & Arzymanow, 2003) and procurement maturity (OECD, 2006).

46. *Change the scale of the spider diagram.*
   - Portray a scale of 0.5 steps like in MAPS (OECD, 2006, p. 6).

47. *Replace the spider diagram with dashboards with improvement points, development points and positive points.* → *Considered in stoplight presentation and action plan.*

48. *Present the spider diagram as a bar chart as people are more used to seeing bar chart.*

49. Present the spider diagram as a line chart (Guth, 2010, page 4).

Assessment results – Presentation of results: Visibility of required improvement steps

50. *Make sure that auditors focus on the big gaps between score and target, which are easily visible in stoplight presentation.*

51. *Ensure that auditors provide three key topics for focus after the assessment.*

52. Provide and present action plans after an assessment (OECD, 2006, page 53).

53. Make a cascade of process criteria (Brinkkemper, 2006, p. 326).

Assessment results – Presentation of results: Simplicity of presentation of results

54. *Leave those processes where you score a 0 out of the result presentation.* → **Not considered in design propositions, as scores of 0 were never measured yet as found in the database of assessments (NEVI, 2009).**

55. *Represent a stoplight of score with regard to target: score equal target is green, negative difference of one between target and score is orange, negative difference of two or more between target and score is red.*
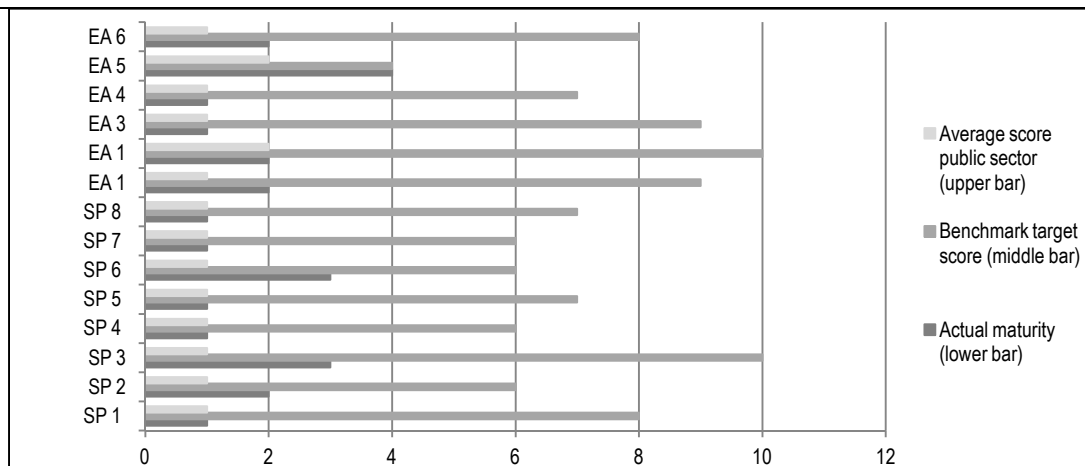
- *Present stoplights with five colors per process.*
  - Present a stoplight with five colors based on the target and assessment results (OGC, 2011, page 5).

Assessment results - Benchmarking usefulness: Results follow-up

56. *Benchmark with your sector preferably.*
57. *Ensure that auditors propose recommendations that can be directly applied the next day based on the criteria per process that are missing and hinder reaching a next maturity level.*
58. *Compare the stoplight colors when you make a next assessment.*
59. *Develop your strategy based on the MSU+ assessment and where you choose to be.*
60. Emphasize change management through the model by Kotter (1996), which is explained in the NEVI report about MSU+ already (NEVI, 2009).
61. Include a "change, implementation and impact" dimension in MSU+ (Møller et al., 2006) → **Not considered in design propositions, as interviewees were content with the amount of processes not wanting more processes.**

Assessment results - Benchmarking usefulness: Score perceived as grade

62. *Present a stoplight of score with regard to target, instead of just the score.*
63. *Keep the score for benchmarking purposes.*
64. *Ensure that it is known why an organization has a low maturity level to overcome it feels like a grade.*
65. *Do not present the average scores anymore.*
66. Assign names to maturity levels/stages, to not be talking about scores (Keough, 1993; Møller et al., 2006; OGC, 2011; Schiele, 2007; Weele et al., 2000).

Assessment results – Perceived usefulness: Score recognizability

67. *Identify all relevant processes for the assessed organization upfront to an assessment.*
68. *Relate scores to targets, based on strategy or plan, to put it into context.*
    - Fitness for purpose means that assessment is done with regard to where the organization plans to be (targets) (OGC, 2011).
    - Present an organization's measurement score with regard to best in class/ best practice score (Guth, 2010, page 4).
69. *Relate an organization stage with maturity levels, for example use the model of van Weele (Weele et al., 2000) and determine for the transactional orientation stage to what maturity level ranges per process that relates.*
    - *Discuss this with van Weele and inventors of other similar models.*
    - *The stages of van Weele's model are not automatically better in increasing order therefore it cannot be related to MSU+.*
70. *Ask clients what they want and expect from the model.*
- See also suggestion 66, assigning names for maturity levels

Assessment results – Perceived usefulness: Low scores

71. *Split lower levels, for example level 1 to 4 or 5, into sub levels, therefore something like 1a, 1b, 1c based on the criteria needed to work on legitimacy, transparency and cost-effectiveness.*
72. Leave the method of score aggregation open to auditor (OECD, 2006).

Assessment results – Perceived usefulness: Satisfaction of model

73. *Communicate that it is no requirement to have a high score, but should be wish as successful companies have high scores.*
74. *Ensure that the model is simple enough that people understand it and do not have the feeling that they need to have studied in order to be able to understand the model.*
75. Make communication about the following points clear (Bruin, Freeze, Kaulkarni, & Rosemann, 2005, page 5): 1. Why they seek to apply the model, 2. How the model can be applied to varying organizational structures, 3. Who needs to be involved in applying the model, 4. What can be achieved through the application. → Considered in the tips for auditors especially.

Assessment results – Perceived usefulness: Added value of high score

76. *Communicate the basis of the model better, meaning that MSU+ is based on procurement best practices of 300 companies.*
    - *Explain more clearly where the model comes from and what it does.*
77. *Leave strict step principle in MSU+ to ensure that a higher maturity level score means higher performance.*
    - Most procurement maturity models assume final stage of excellence (Carter et al., 2000; Keough, 1993; Møller et al., 2006; OECD, 2006; OGC, 2011; Schiele, 2007; Weele et al., 2000).

Context – Acceptance of model across organization: Visibility of MSU+ model in organization

78. *Communicate that the task of the procurement organization and procurement officers is to sell the model.*
    - *Sell/promote the model targeted on the requirements of the person you are talking too, focusing on the topics of legitimacy, transparency and cost-effectiveness which are deeply involved in the MSU+ model.*
    - *See also suggestion 76, communication about basis.*
79. *Ensure top management commitment to MSU+.*
80. *Ensure commitment to MSU+ by internal customers and other stakeholders in the company..*

9.7 Preliminary and adjusted design propositions of design cycle

Bold marked design propositions were adjusted/added/discarded after the evaluation phase at the professional group.

Preliminary design propositions (For all the situation is "in a redesign of the MSU+ model")
Content
The following addresses the problem with regard to legislation:
1. In order to ensure the correct applicability of the model, add the word 'existing (geldende)' to all criteria about legislation and regulations (e.g. "existing laws and regulations are observed ("geldende wet- en regelgeving wordt nageleefd")).
The following addresses the problems with regard to process criteria being public sector specific and the completeness of the model:
Sustainability (Note: Look at evaluation interview questions for exact changes per mentioned processes.)
2. To ensure completeness of the model, include sustainable procurement in strategic process 2.

3. To ensure completeness of the model, include sustainable procurement in strategic process 3.
4. To ensure completeness of the model, include sustainable procurement in strategic process 4.
5. To ensure completeness of the model, include sustainable procurement in strategic process 7.
6. To ensure completeness of the model, include sustainable procurement in enabling process 4.

Social return (Note: Look at evaluation interview questions for exact changes per mentioned processes.)
7. To ensure completeness of the model, include social return in strategic process 2.
8. To ensure completeness of the model, include social return in strategic process 8.
9. To ensure completeness of the model, include social return in enabling process 1.

Best value procurement **(Note: After the evaluation at the professional group, best value procurement was not considered furthermore for inclusion in the model.)**
10. To ensure completeness of the model, include best value procurement in strategic process 2.
11. To ensure completeness of the model, include best value procurement in strategic process 4.
12. To ensure completeness of the model, include best value procurement in strategic process 5.
13. To ensure completeness of the model, include best value procurement in strategic process 8.

New Dutch procurement law
14. **To ensure completeness of the model and make the process criteria public sector specific, include the motivation obligation (motiveringsplicht) from the new Dutch procurement law (Nieuwe Aanbestedingswet).**

The following addresses the problem with regard to the problematic processes:

Enabling process 4
15. To ensure that the meaning of the process is correctly understood and reflects other procurement maturity models, change the process name of enabling process 4, Procurement Performance Indicators, to 'control / performance management'.
16. To include terms that are used in public procurement and reflect content of other procurement maturity models, include in enabling process 4 under 'requirements and recommendations' (vereisten en aanbevelingen) the following sentence: "A spend analysis is performed. (Een spend analyse wordt uitgevoerd.)"

Enabling process 6:
17. To ensure that the meaning of the term multidisciplinary teams is correctly understood, add in the glossary (Begrippen- en afkortingenlijst) of the MSU+ model under 'multidisciplinary team': 'Members of the team work in different departments and work together in formal or informal ways. (Leden van het team zijn werkzaam op verschillende afdelingen binnen dezelfde organisatie en werken formeel of informeel samen.)"
18. In a redesign of the MSU+ model, to ensure excellence of public purchasing entities, make the term 'multidisciplinary teams' even more stricter.
19. To ensure that enabling process 6 is correctly understood, add an explanation of the word reward under 'explanation of the table' (toelichting op de tabel): "The link with procurement performance is also achieved, if the purchaser is not paid a bonus, but the performance of the purchaser is addressed in the appraisal and is a key performance indicator. (Het koppelen aan inkoopprestatie is ook voldaan, als aan de inkoper geen bonus betaald wordt, maar als de prestatie van de inkoper in het jaarlijkse beoordelingsgesprek besproken wordt en het zelfs een key performance indicator is.)"

Strategic processes 5 and 6
20. To increase the relevance and applicability and be more in line with what other procurement maturity models measure, combine the processes with regard to supplier integration which involves strategic processes 5 and 6.
21. To increase the applicability and relevance, include in strategic process 5 that it can be related to the policy by including in maturity level 1 of strategic process 5: "Not or to a lesser extent demonstrable, that supplier integration in product creation process a theme is, such as in the policy. (Niet of in mindere mate aantoonbaar dat leveranciersintegratie in product-/ procesinnovatie (PPI) een thema is, bijvoorbeeld in het beleid.)"
22. To ensure the relevance and applicability for the Dutch sector, discard the strategic processes 5 and 6.

Process

The following addresses the problem with regard to the strictness of the strict step principle:
23. To make the assessment motivating and ensure results follow-up, distinguish between mandatory and optional criteria and base the distinction on whether the criteria link to legitimacy, transparency and cost-effectiveness. This should be done for the first four maturity levels for all processes.
24. To loosen the strict step principle, split the criteria per process level into a, b and c and for proceeding to next stage all need to be fulfilled.
25. To loosen the strict step principle, indicate the criteria that are not important for the assessed organization per process and do not consider them in the score calculation.
26. To ensure that organizations get a clear overview and that higher scores mean higher performance, do not change the strict step principle.

The following addresses the problem with regard to the applicability across different public sector organizations:
27. To increase the applicability to Government entities, make a Government version of MSU+ considering the measurement of IUC's and SSO's by adding a third set of processes that take place between SSO's and departments and between SSO's and IUC's.

Assessment results

The following addresses the problems with regard to the spider diagram presentation and the simplicity of presentation of results:
28. To ensure that scores are more clearly visible, change the scale of the spider diagram to represent 0.5 steps (0.5, 1, 1.5, 2, 2.5 etc.).
29. To ensure that people quickly understand the result presentation and simplify it, replace the spider diagram with a bar chart.
    a. Example bar chart (SP = strategic process, EA = enabling process); **Note: After the evaluation at the professional group, the bar chart was presented 90 degrees turned to the left (see below).**

30. To ensure that people quickly understand the result presentation and simplify it, replace the spider diagram with a line chart.
    a. Example of dot chart for strategic processes should also be done for enabling processes. **Note: This was left out after the evaluation at the professional group.**
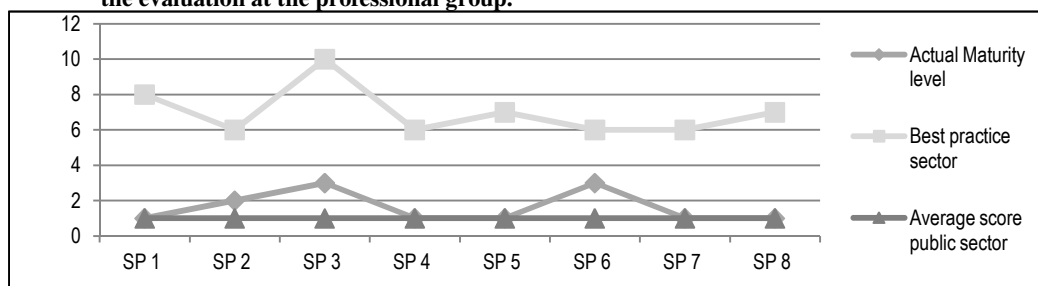

31. To ensure consistency with other maturity models and to provide an overview, leave the spider diagram in the MSU+ model.

The following addresses the problems with regard to the visibility of required improvement steps and the simplicity of presentation of results:

32. To ensure clearer visibility of the required improvement points, replace the table with red and green criteria with a cascade of process criteria.
   a. Example for strategic process 1 should be presented like this for all processes; non-existing criteria are red (dark grey) and existing green (light grey).
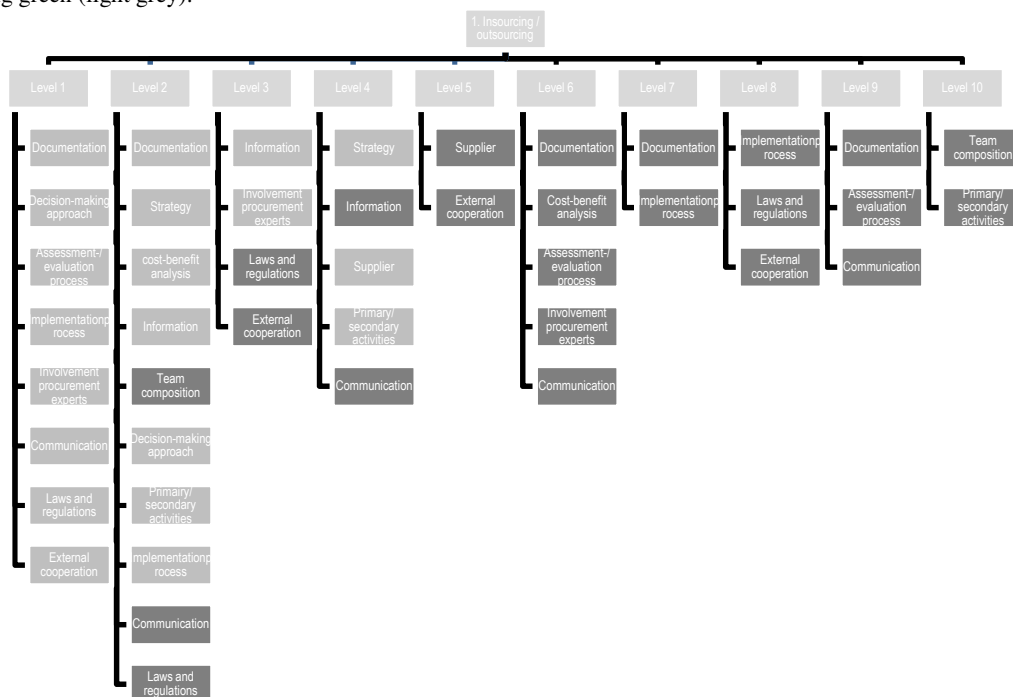
The following addresses the problems with regard to the visibility of required improvement steps, the simplicity of presentation of results, the score recognizability and the score vs. grade:

33. To increase the recognizability of a score and make required improvements more visible, represent the maturity level score with regard to a target score on a stoplight.

b. Rules on how to determine if a score will be green, orange or red.
   i. If the actual score is equal or higher to the target score, it is presented as green.
   ii. If the actual score is one point lower than the target score, it is presented as orange.
   iii. If the actual score is two or more points lower than the target score, it is presented as red.
c. Example of colored presentation for strategic processes (Red are 1 and 7 (dark grey), Orange are 2, 3, 4, 6, 8 (light grey) and green is 5 (medium grey)):
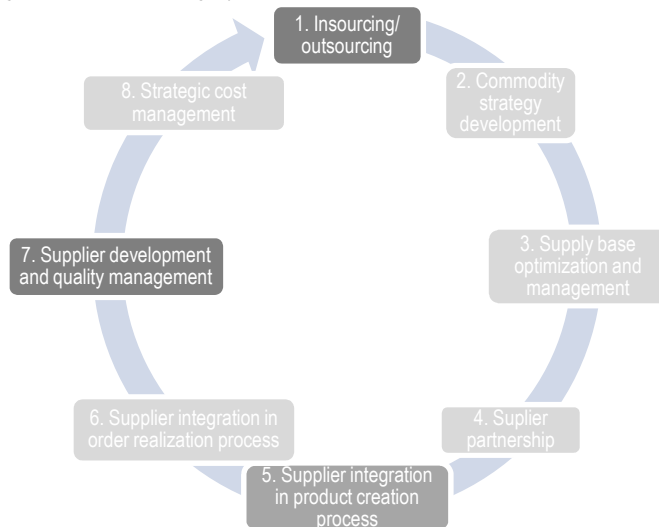
34. **To ensure comparability to a target score, determine the target score for the organization based on the strategy and objectives of the organization and name it "Organization target score (Organisatie doelscore)".**
35. **To ensure comparability to a target score, set the average score of the specific sector as target score and name it "Benchmark target score (Benchmark doelscore)".**

The following addresses the problems with regard to the result follow-up, the visibility of required improvement steps and the simplicity of presentation of results:

36. To ensure that results are followed-up and required improvement points are quickly and clearly visible, an action plan should be represented to the assessed organization.
   a. **The auditor can give a recommendation for the priority but final priority should be determined by the assessed organization itself, based on where they wish to develop.**
   b. **In order to ensure that auditors are able to fill out the action plan, auditors should be from the public sector.**
   Example for a few strategic processes, action plan should present all processes however:

Processes	Status	Score	Proposed actions	Priority
Strategic processes				
1. Insourcing / outsourcing	Red	1		
2. Commodity strategy development	Orange	2		
3. Supply base optimization and management	Orange	3		
4. Supplier partnership	Orange	1		
5. Supplier integration in product creation process	Green	1		

The following addresses the problem with regard to the score perceived as grade:

37. To ensure that the organization does not feel like receiving a grade, no average score should be represented to the assessed organization.
38. In a redesign of the MSU+ model, to ensure consistency with other procurement maturity models, leave the method of score aggregation open to the auditor.

The following addresses the problems with regard to the score recognizability, low scores and the score perceived as grade:

39. To ensure that scores are recognized and the meaning is understood, assign names or labels per maturity level. Idea for possible names for MSU+ per maturity levels from 0 to 10 are: 0: Not applicable; 1: Ad hoc level; 2: Transactional orientation; 3: Coordinated purchasing; 4: Cross-functional purchasing; 5: Stakeholders, compliance and partnerships; 6: External integration, supply chain management; 7: Target achievement and benchmarking; 8: Evaluation and implementation; 9: External integration; 10: Purchasing excellence
40. To ensure a better applicability of the model and to provide organizations with an idea where they should be in the MSU+ model, relate the model of Keough (reference) or van Weele (reference) to maturity level ranges per process of the MSU+ model. The exact relation of the models should be determined by experts. Example of this relation on basis of strategic process 2; should be done for all processes preferably.

Process	Stage 1: Transactional orientation, serve the factory	Stage 2: Commercial orientation, lowest unit price	Stage 3: Co-ordinated purchasing	Stage 4: Internal integration cross-functional purchasing	Stage 5: External integration, supply-chain management	Stage 6 (Preliminary): Value chain orientation
2. Commodity strategy development	Maturity levels: 0	Maturity levels: 1	Maturity levels: 2-3	Maturity levels: 4-5	Maturity levels: 6-7	Maturity levels: 8-10

9.8 Recommended tips and tricks

9.8.1 Tips and tricks for auditors

Before a MSU+ assessment
✓ Ask the to-be assessed organization what they want and expect from MSU+ and manage their expectations. 　➢ Explain that the highest scores are based on the most successful companies and high scores therefore desirable. 　➢ If you assess an IUC or SSO, explain that even when they score low on some processes there is room for improvement, as they determine the processes and procedures for the organizations below them and set realistic targets. ✓ Look through all processes to determine which are relevant for the to-be assessed organization. ✓ Determine target scores based on the organization's strategy or objectives and explain that a strategic choice can be not to focus on the highest scores possible. 　➢ Explain that maturity levels above 5 require an overall well-functioning organization and are not solely in procurements hands and that maturity levels 6 to 10 are probably more a goal for the next 10 years in the Dutch public sector. 　➢ Explain that jumping maturity levels will not lead to higher excellence and explain that a maturity level of 10 means no possible improvements anymore, which is reasonably not the case in any organization. ✓ Ensure that procurement managers and procurement professionals are well trained in translating the general public model to their own specific environment. ✓ Promote and sell MSU+ targeted to the requirements of the person in front, focusing on the topics of legitimacy, transparency and cost-effectiveness which are deeply involved in MSU+.

9.8.2 Tips and tricks for to-be assessed organizations

Before a MSU+ assessment
✓ To find out if everything in the organization is purchased legitimately, ask an accountant or consultant as this exceeds the task of a MSU+ auditor. ✓ Ensure top management commitment as well as commitment by internal customer and stakeholders. ✓ Promote and sell the model targeted to the requirements of the person in front, focusing on the topics of legitimacy, transparency and cost-effectiveness which are deeply involved in the MSU+ model.

After a MSU+ assessment
✓ Benchmark preferably with an organization in the same sector. ✓ Compare the stoplights of a previous assessment with the proceeding assessment. ✓ Use the MSU+ assessment results for the next strategy determination.

9.8.3 General tips and tricks

Tips for the training of auditors
✓ Train auditors in focusing on the big gaps between score and target and in providing three key points for improvement that can be directly implemented the day after the assessment. ✓ Train auditors in mentioning the NEVI Publiek report towards the organization for an example of the application of Kotter's change management model.

General tips
✓ Ensure that auditors have good knowledge of the public sector.