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Accounting change and value creation in public services—Do relational archetypes make a difference in improving public service performance?

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ABSTRACT

Evidence points out that the outcome of accounting change in local governments is not simply a matter of 'corporate' resource investments and change management activities to accounting system replacement. This paper examines the link between such corporate-level interventions and the patterns of value creation at street-level. It emphasizes a resource- and capability-driven approach to explore processes and consequences of an 'embedded agency'-effect assigned to the street-level rationale of public service improvement. Considering a logic chain of cause-and-effect sequences, the data analysis provides evidence that corporate and street-level interventions are unique dimensions to signify the multiple patterns of accounting change in local governments. The supplementary effect of cross-functional relationships is also distinguished, considering the relational archetype as a mechanism to explain the emerging outcome state. Recognizing the distinction and the sequential effects of relational archetypes induces a refined typology of accounting change according to its processes and outcomes in local governments. The analysis is based on a comparative case study design to explore accrual accounting introduction in six German municipalities.

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1. Introduction

The antecedents and processes of accounting change in local governments have been a topic of repeated inquiry, in particular because of the prevalence of various outcomes of accounting system change. Perhaps even more interesting is that such variations also occur even when local governments are aware of the need to change, as in the case of public sector reform programs introducing new budget laws. Scholarship has tried to explain such variations as 'implementation failure' by considering either environmental contingencies or change management issue to be the cause of unintended effects on successful implementation of a reform program (e.g. Carlin and Guthrie, 2003; Christensen, 2007; Pollitt and Bouckaert, 2004). Contrastingly, some scholars point out that local governments can also act more strategically, thereby searching, selecting and adding different reform elements within, beside, and optionally also before a new budget law comes in charge (e.g. Ingraham, 2007; Knutsson et al., 2008; Ter Bogt, 2008). Thus, accounting change is not simply a matter of adjustment to exogenous pressures but it is also shaped by 'intentional agency' at the level of local governments to configure an accounting and budgeting system up to desired ends (Englund and Gerdin, 2011; Liguori and Steccolini, 2012; Pina et al., 2009).

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In pursuit of performance improvements, literature on public management and accounting reveals that such a purpose of accounting change covers the aim to enhance the output and outcomes of public service delivery in local governments, for example in terms of gaining more efficiency, effectiveness or quality (Lipsky, 2010; Pollitt and Bouckaert, 2004). It is suggested that change of management and financial accounting systems shapes governance and financial decision making at the street-level, especially by creating and distributing financial performance information and controls through accrual- and output-based budgeting and related performance measurement systems (Hou, 2007; Jackson, 2011; Jones and Pendlebury, 2000). A recent discussion critically comments on whether ex ante expectations promoted by reform concepts adequately reflect the actual consequences of accounting change (Christensen, 2007; Ho, 2011; Kioko et al., 2011). Thereby, an 'embedded agency'-effect is introduced, since the street-level bureaucrat usually acts as a 'knowledgeable and reflexive agent' of public value creation who skillfully exploits the opportunities of evolving accounting systems (Englund and Gerdin, 2011; Kilfoyle and Richardson, 2011; Lipsky, 2010). Public service professionals count on the relevance and applicability of financial performance information due to the accounting logic at work, used in certain ways in order to maintain or improve specific standards of public service delivery (Brodtkin, 2008; Laughlin, 2007). According to this, an equal set of 'corporate' accounting systems may be considered as a constraint or threat within one type of public service delivery, and a source or opportunity to improve current service standards for another set of public service agencies (Kilfoyle and Richardson, 2011; Pollitt and Bouckaert, 2004). However, when public service professionals intentionally explore their opportunities for endogenous accounting change, the question raises what can be learned from a study of these accounting practices, possibly different from the 'corporate' ones, and probably causing variation in the outcomes of accounting change.

Previous studies have already addressed variations in the outcomes of accounting change in local governments, primarily referring to institutional-based approaches to examine the dynamics of intra-organizational factors and their consequences at either an organizational level or street-level of analysis (e.g. Ho, 2011; Liguori and Steccolini, 2012; Ter Bogt, 2008). Yet, a shortcoming of this literature is that it does not directly explore the link between 'corporate'-level accounting change and changing accounting practices at the street-level of public services. This paper suggests that both stages are parts of an 'interconnected chain of reforms' (Carlin, 2005, p. 320) and must be examined in relation to one another in order to gain a more comprehensive understanding of the process and outcomes of accounting change. Organizational benefits of 'corporate' accounting change depend not only on effective implementation of accounting systems but also on future prospects expected at street-level, particularly the suitability of financial performance information systems for the purpose of public service improvement. Similarly, organizational benefits in public service delivery are determined not only by organizational arrangements made in order to support accounting practice changes but also by the extent to which such arrangements are in accordance with the patterns of coping practices at street-level. Thus, further research on accounting change needs conceptual frameworks in which the link between 'corporate' and 'street-level' accounting change is considered, thereby addressing the sequential effects in both the implementation and institutionalization stage of the process. Moreover, such a framing takes into account that organizational and street-level change interventions both contribute to outcomes of accounting change, but perhaps with a contradictory rationale. A central challenge is, therefore, to explore the 'embedded agency'-effect since the opportunities to strategize on street-level accounting practices are shaped by the immediate outputs of the 'corporate' accounting change.

This paper aims at developing a framework of the accounting change process, thereby introducing four archetypal relationships between 'corporate' and 'street-level' accounting change interventions. To this end, insights from institutional-based approaches are refined by concepts and mechanisms provided by a resource- and capability-based view, in particular to identify factors that shape the relational context of accounting change interventions. This approach (Barney, 1991; Bryson et al., 2007; Pablo et al., 2007) examines the role of intangible assets and organizational capability development as antecedents to gain valuable organizational outcomes. According to this view, the analysis refers to accounting knowledge as an asset to create public value and explores effects of developing such capacity for public service improvements in the context of accounting change in local governments. Moreover, the framework of relational archetypes (Kang et al., 2007; Kang and Snell, 2009) provides a complementary lens to explain why the match or mismatch in 'corporate' and street-level capacity development can have a significant effect on the desired benefits of accounting change.

The analysis is based on a comparative case study design in order to examine the introduction of accrual-based accounting systems in six German municipalities. Introducing accrual-based accounting in local governments is claimed to be both an innovative and radical change as it is essentially divergent from former cash-based systems (Chan, 2003; Lapsley, 1999). In particular, replacing the accounting basis is assumed to be a 'high-impact system' because of its crucial role in modifying accounting structures, identities and practices throughout the entire organization (Becker et al., in this issue; Carlin, 2005; Liguori, 2012). As such, its introduction is a research field that inevitably incorporates the link between 'corporate' and street-level accounting change and supports an embedded research design (Yin, 2009) necessary to analyze the phenomenon of interest. Accrual-based accounting change in German municipalities is stimulated by the external pressure of new budget laws, requiring both resource investments and change management activities to cope with the challenge. Distinguishing such 'corporate' patterns of accounting change provides the context to elaborate on the 'embedded agency'-effect based on two consecutive research questions:

- how public services deploy their local accounting capacity to improve public service delivery in the context of the value propositions stated by their institutional environment; and

- how and why public service interventions cause variations in accounting change when they are dealing with the opportunities of 'corporate' accounting change in order to redirect their capabilities of public service delivery.

The article is structured as follows. In Section 2, the concept of public sector accounting change is reviewed as a two-level and sequential phenomenon to comprehend its effects as a source of public service improvement. Core concepts outlined by the resource- and capability-driven framework are further developed in Section 3, especially differentiation of organizational benefits from accounting change. In Section 4, the study design is explained and Section 5 sets out the results of the empirical study of accrual-based accounting change in six German municipalities. Section 6 moves on to the discussion of the empirical findings. Section 7 concludes with the contributions and limitations of the analysis.

2. 'Putting on new clothes' in public financial management – framing accounting change as a source of public service improvement

Within the context of public sector reforms, especially with regard to the concept of New Public Management, accounting change has been recognized to play a crucial role in modernizing public sector organizations (e.g. [Ferlie and Geraghty, 2005](#); [Hyndman et al., in this issue](#); [Lapsley, 1999](#)). Contextual accounting research of organizational benefits of ‘new clothes’ in public financial management in general or accrual-based accounting in particular has been widespread over the last two decades (e.g. [Broadbent and Guthrie, 2008](#); [Christensen, 2007](#)). Despite a continuous critical debate on the suitability of accrual-based accounting, currently it is stated that in practice the adoption of accrual-based accounting and related performance measurement systems is commonly in place and regarded as a progress, and thereby as a ‘self-evident’ phenomenon ([Lapsley et al., 2009](#); [Pina et al., 2009](#)). Moreover, scholarship has provided substantial knowledge displaying ex ante expectations regarding possible organizational benefits of accrual-based accounting, e.g. financial transparency, identifying the ‘real’ cost of producing services, or improving allocative efficiency by output-based budgeting ([Hou, 2007](#); [Jackson, 2011](#); [Padovani and Young, 2012](#)).

Contrastingly, a recent discussion critically comments on the proposed benefits and efficacy of such ‘outcomes’, mainly with regard to their transformation into subsequent changes at the street-level of public services (e.g. [Brodikin, 2008](#); [Kioko et al., 2011](#)). For example, scholars have stressed the role of performance information use in order to explain consequential effects of performance management and accounting change, in particular with regard to the departmental level of local governments ([Ho, 2011](#); [Moynihan and Pandey, 2010](#)). Thus, the challenge of accrual-based accounting introduction in local governments can be considered a ‘two-part’ intervention process to produce a sequential and also interconnected chain of beneficial outcomes, and, thereby, their value as a ‘tool’ for public service change and improvement ([Carlin, 2005](#); [Lapsley and Pettigrew, 1994](#); [Liguori, 2012](#)).

The debate also critically reflects the research approaches used to investigate the antecedents and consequences of such accounting changes (e.g. Broadbent and Unerman, 2011; Laughlin, 2007; Parker, 2010), thereby emphasizing both the uniqueness of each of the alternative approaches (e.g. neo-institutional, contingency, structuration, strategy, or actor-network theory) but also the value of theoretical diversity (Jacobs, 2012; Parker, 2010). In particular, recent qualitative empirical research aimed to produce organization-specific and more comprehensive insights by crossing research approaches and the levels of analysis, especially in order to refine knowledge in fields concerned with accrual accounting change (e.g. Christensen and Parker, 2012; Liguori and Steccolini, 2012; Ter Bogt, 2008). Within this research strand, institutional-based research is acknowledged as an informing and also fine-grained approach which enables to refine preliminary patterns of explanations and to further explore outcomes of 'corporate' accounting change when the 'embedded agency'-effect of street-level accounting interventions is considered (Kilfoyle and Richardson, 2011; Parker, 2010).

First, research on 'corporate' accounting change addresses the antecedents and internal drivers of initial interventions to implement an accrual-based accounting system. Both, contextual accounting research (Broadbent and Guthrie, 2008; Lüder and Jones, 2003) and institutional-based approaches (Christensen and Parker, 2012; Pina et al., 2009) consistently emphasize the external coercive pressure for implementation that derives from institutional changes, for example forced by legal requirements. Moreover, the latter has demonstrated that external influences operate in conjunction with the dynamics of intra-organizational factors, e.g. either organizational change or inertia in values and beliefs associated with accrual accounting as well as in the systems, rules and routines that actually shape financial decision-making behavior. Accordingly, the empirical research reveals that outcome levels of 'accruals' implementation achieved in local governments differ, particularly influenced by the organizational capacity to deal with environmental pressures (Liguori and Steccolini, 2012; Pina et al., 2009; Ter Bogt, 2008). Thus, the evidence indicates immediate but also non-equivalent outcomes¹ at implementation stage, categorized, for example, as an incremental or more radical outcome state of 'corporate' accounting systems change (Liguori, 2012; Liguori and Steccolini, 2012).

¹ The term 'non-equivalent outcomes' indicates different dependent variables that need to be specified within conceptual analysis, thereby also considering a comprehensive pattern that covers each of the variables (Yin, 2009). For example, take the case of accounting systems change and the proposition that it produces a certain pattern of organizational changes. Among these changes a variety of relevant outcomes might be specified based on previous theory, e.g. that *responsibilities* will be threatened due to the need to standardize accounting procedures or *resistance* will increase as 'street level' control over the use of sources of accounting information will be diminished. These outcomes each represent different dependent variables and the need to assess each with different measures.

Second, the literature on public service accounting change also has extended our understanding of impacts of such immediate outcomes of 'corporate' accounting change at street-level. The transformation of accounting systems replacements into public service change and improvement is described as an intervention similarly fraught with uncertainty, specifically when the 'corporate' outcomes are assigned to 'embedded' modes of performance and accounting information use. A broad range of research, mainly referring to the 'professional autonomy' in producing public service outputs (summarized by Ferlie and Geraghty, 2005; Parker, 2010), has revealed that public service accounting change is governed by factors such as the traditional patterns of decision-making, the perceived contradictions between future prospects of 'corporate' accounting change and actual demands, values and practices of public service delivery and, subsequently, the emerging interests and conflicts between core groups within the organization. With regard to the, at least, partial effect of discretionary coping practices at the street-level, the evidence indicates that 'sedimented' patterns of reactive as well as proactive absorption occur, mainly caused by institutionalized beliefs, values and practices associated with the public value to be created by service delivery (e.g. Becker et al., in this issue; Laughlin, 2007; McNulty and Ferlie, 2004). From an institutional-based view, such circumstances and the dynamics of public service change are emphasized as critical (and also moderating) conditions to explain both the emerging outcome-state of public service accounting change and its institutionalization as a 'taken for granted' practice (Liguori, 2012; McNulty and Ferlie, 2004). Similarly to the aforementioned 'corporate'-level of analysis, accrual accounting introduction in local governments sets conditions and pressures to public service accounting change, but the outcome-state needs to be explained by the internal dynamic of discretionary coping practices at the street-level. In regards to such intermediate outcomes, this research also indicates the possibility of non-equivalence according to the 'embedded agency'-effect, substantiated as either contradictory or complementary to the immediate 'corporate'-level outcomes (Englund and Gerdin, 2011; Ferlie and Geraghty, 2005). It should also be noted that the relevance and strength of such effects might be triggered by the scope and multiplicity of services which local governments provide by legislation or local policy making (Padovani and Young, 2012).

However, research so far has addressed critical issues in accrual-based accounting change at each intervention stage; thereby explaining 'implementation failures' as well as the evidence of incremental or more radical outcome states at the organizational level or street-level of analysis. An important caveat in conducting these kinds of analysis is a focus on the antecedents and consequences of either the implementation or institutionalization stage. There is some evidence that organizational benefits are caused based on a complex chain of sequential effects: the 'accrual footing' (Carlin, 2005, p. 309) as being a necessary 'precursor' of an output-based budgeting system which constitutes the 'hub' that intends to change public service accounting practices. The significance of accounting change as a lever of public services change derives from its intermediate state aimed to trigger accounting practices involved in public service improvement and, thereby, to sustain organizational performance (Carlin, 2005; Ferlie and Geraghty, 2005). Thus, replacing the basis of accounting (from cash to accruals) is claimed to be an initial activity of more comprehensive patterns of management accounting change, including the replacement of former accounting techniques and, for example, modification of performance information and accountability structures (Pollitt and Bouckaert, 2004; Sulaiman and Mitchell, 2005). It is also argued that the purpose, by reference to the basic 'rationale' or 'value proposition' of accrual-based accounting change, and sequencing of such interventions are serious factors in order to explain the achievement of an outcome state in terms of either an incremental or a more radical change in accounting practices (Liguori, 2012; Liguori and Steccolini, 2012). Moreover, this research stream outlines that accrual-based accounting introduction is a two-level phenomenon that covers a complex and even uncertain chain of intervention activities over an extended period of time. It also provides evidence of a logical chain of repeated cause-and-effect sequences of such intervention activities, basically linked by the value proposition that is associated with the replacement of accounting systems (Carlin, 2005; Liguori, 2012; Ter Bogt, 2008).

Thus, research on accounting change needs conceptual frameworks in which accounting change is considered as an integrated process covering both the implementation and institutionalization stage of the process. This article aims to examine both 'corporate' and 'street-level'-effects of accounting change, and the primary concern is to further explain what leads to the long-term benefits of accrual-based accounting introduction in local governments, stated in terms of public service change and improvement. Considering a logic model of accrual-based accounting change, it can be used and extended as analytic technique for a case-based research strategy to explore accounting change consequences, in particular when such outcomes emerge by intervention activities located at different levels of analysis (Whetten, 2009; Yin, 2009).

3. Theoretical background

Consistent with the aforementioned issues of accrual-based accounting change identified in public management and accounting literature, this section develops the theoretical background. First, a more elaborated categorization scheme serves the purpose of differentiating a prescribed outcome state from current patterns of accrual-based accounting change at the organizational level. Second, specified by a public value approach the framing of the analysis develops a more comprehensive approach to distinguishing organizational and street-level benefits of accounting change, furthermore classified as the dependent construct in the analysis. Finally, the antecedent variables are identified. From a resource- and capability-based view the complementarity of corporate and street-level accounting change interventions is emphasized as a sequential outcome state that stresses both the 'embedded agency'-effect and its consequences for deriving organizational benefits.

3.1. Identifying patterns of 'corporate' accrual-based accounting change

The evidence of non-equivalent outcomes of 'corporate' accounting change indicates the usefulness of clustering the variety of implementation approaches (Lapsley and Pallot, 2000; Lapsley et al., 2003; Sulaiman and Mitchell, 2005), mainly to identify key mechanisms initiating a specific type or outcome of accrual-based accounting change. Moreover, it has been a main concern of previous research that outcome states of accounting change incorporate, in the first order, re-designing accounting systems and structures of management control and, in the second order, changing institutionalized accounting and financial management practices (Englund and Gerdin, 2011; Malmi and Granlund, 2009). Regarding the latter, the challenge of accrual-based accounting introduction covers an essential shift in the entire knowledge-base of a local authority and also the value and beliefs which constitute and legitimate the 'taken for granted' behavior in financial and managerial decision-making (Fernandez and Rainey, 2006; Liguori and Steccolini, 2012; Ter Bogt, 2008). Research has shown that a more radical accounting change is associated with acceptance and commitment to the purpose and value of accounting systems change. Thus, sustainable reorientation in the rationale of financial and managerial accounting practices is claimed to make up the difference between a radical accounting change and one of its more incremental counterparts (Liguori and Steccolini, 2012).

This 'first order' effect of 'corporate' accounting systems change is captured by scholarship on organizational change and development (e.g. Amis et al., 2004; Pettigrew et al., 2001) and prospective effects of change management activities in a context of public management reforms (e.g. from a strategy-based view: Osborne and Brown, 2005; Pollitt and Bouckaert, 2004; from an organizational change-based view: Fernandez and Rainey, 2006; Lapsley et al., 2003). The research strand is strong and outstanding particularly on antecedent factors and the 'propositional inventory' (Fernandez and Rainey, 2006, p. 169) of successful structural redesign, in particular by managing the risk of resistance. This includes sufficient resource investments, especially dedicated to change activities (e.g. change agents, human resource development), implementation strategy and political support, mainly related to top-level commitment (e.g. formal authorization), leadership and internal support (e.g. planning change). Moreover, recent research (Fernandez and Rainey, 2006; Stewart and Kringas, 2003) has treated these factors as potentially contributing to the 'second order' effect of successful institutionalization of wide-ranging changes, e.g. due to their influence at different levels and points of time. Correspondingly, Liguori's study (2012) illustrates the effect of sequencing an accounting system change, especially emphasizing the high impact of a coordinated change in the purpose, focus and accountability structures in order to achieve target outcomes. Nonetheless, the literature also argues that managing accounting change by itself incorporates the risk of failure because these factors might be ignored, overlooked, or underestimated (Fernandez and Rainey, 2006).

To consider non-equivalent and even distinct outcomes of introducing accrual-based accounting in local governments, research so far suggests that patterns of managing accounting change occur for two reasons: the uniqueness of accounting systems change and an idiosyncratic set of implementation activities to replace the current accounting system and practices. Research has also shown that the overall pattern is affected by institutional requirements (Lüder and Jones, 2003; Pollitt and Bouckaert, 2004) and – with equal relevance – the strategic agenda pursued by a local government (Boyne and Walker, 2004, 2010). To categorize such effects, Lapsley et al. (2003) and Clarke and Lapsley (2004) have proposed an organizational change-based approach to appreciate both the type of accounting change and the associated change management activities (information technology, agents of changes, and the strategic role of accountants) as driving mechanisms of accounting change outcomes. According to this, three comprehensive patterns of accounting change are anticipated: *developmental*, when the organization is changed by the introduction of a new technology or specific management practice; *transitional*, when the introduction of new techniques, methods, procedures or services is aligned with new structures and reorganization of the entity; and *transformational*, when re-designing the structure is combined with changes in organizational strategy and vision. Moreover, strategy-based approaches (Boyne and Walker, 2004, 2010) have suggested that strategic agenda comprises strategic stance and strategic actions (e.g. strengthening an accrual-based accounting approach) as the two dimensions of strategic behavior in public sector organizations. Particularly, the former enables to further categorize the value of accounting change by considering basic patterns of strategic behavior – based on Miles and Snow's typology (Miles et al., 1978) – that cover the organizational response to changing circumstances: to innovate, to consolidate, or to wait for instructions. Thus, the likelihood of a transformational outcome may be jeopardized by implementation failure as well as by an enduring strategic behavior that is more threat- than opportunity-based (Dutton and Jackson, 1987; Gilbert, 2005).

Framing the non-equivalence of accounting change outcomes in this way suggests that the prescribed shift from cash- to accrual-based accounting systems is a useful template for identifying the multiple outcome effects of corporate accounting change interventions (e.g. Carlin, 2005; Pollitt and Bouckaert, 2004; Liguori, 2012). In order to distinguish comprehensive patterns of introducing accrual-based accounting change these categories are valuable to describe and assess the dependent effects of such change initiatives in the certain circumstances of local governments, in particular in terms of the unique combinations of factors such as strategic stance, resource investments, and order of implementation. In this respect, the term 'order of implementation' (Eisenhardt and Martin, 2000, p. 1116) is used to summarize the immediate outcome-state of change management activities in order to introduce the 'embedded' public service accounting change (political and internal support, implementation strategy, and complementary resource investments) and, thereby, to further analyze the consequences of this outcome state at street-level of analysis.

3.2. Considering the non-equivalent street-level benefits of accounting change

Given the coherent nature of accounting change within a local authority, the ‘embedded agency’-effect indicates the possibility as well as distinctiveness of intervention activities at street-level of analysis. In particular, accounting and performance management systems are appreciated as an antecedent capacity necessary to create public service delivery and change. Moreover, the availability of accounting knowledge and performance information is considered as a source for continuous learning about the sustainable value of public service improvements, primarily in order to renew governmental capabilities within a specific type of public service delivery (Hou et al., 2003; Ingraham, 2007; Pallot, 1999). Still, as already mentioned, public management and accounting scholars (Ho, 2011; Hou et al., 2003; Moynihan and Pandey, 2010) have noted that performance information use is one of the critical outcomes of redesigning the associated systems. In a recent review on ‘governance by numbers’, Jackson (2011) stresses a broad stream of prescriptive literature explaining the possible benefits of performance measurement methods (e.g. productivity, cost benefit analysis, league tables). Yet, the analysis also reveals the caveat of a relatively sparse research explicating the antecedents and consequences of ‘using the numbers’ in order to create subsequent outcomes in terms of public service change and improvement (e.g. Adriani et al., 2010; Boyne, 2003a, 2004; Moynihan and Pandey, 2010).

This study draws on a public value approach to investigate the (intermediate) outcomes of accounting change at street-level of analysis (Alford and O’Flynn, 2009; Moore, 1995, 2000). With regard to the proposed ‘embedded agency’-effect, this approach offers a lens for viewing and categorizing the street-level bureaucrat as a ‘strategist’ in public service delivery and change. Creating public value is assigned as a process of decision-making and managerial framing in public services, seeking to identify, prioritize and presume whether a specific public program or policy is more or less valuable under given circumstances (Alford and O’Flynn, 2009; Moore, 2000). The concept of organizational strategy (Moore, 2000) proposes the need for such strategic behavior, similarly illustrated by empirical evidence exposing that strategy is a matter of organizational and public service performance (Boyne, 2004; Boyne and Walker, 2010) and, correspondingly, an antecedent to the use of advanced management accounting techniques (Baines and Langfield-Smith, 2003). Based on the ‘Strategic Triangle’ model (Moore, 1995, 2000), strategic behavior is displayed by the obliged authority of public (service) managers to cope with both the enhancement of policy- or program-related decision making in order to attract political legitimacy and the authorization of resource investments, and short-term efforts to constantly produce the recurrent outputs by designing governmental capabilities. Thereby, a more prospective stance of ‘entrepreneurial advocacy’ to add value at the intersection of purposes, politics and operational means of public service delivery is contrasted with the defensive stance of ‘stewardship’ which is considered to be the ‘bottom line’ of public assets safeguarding (Jones and Pendlebury, 2000; Williams and Shearer, 2011).

As regards the requirement to distinguish accounting change outcomes at the public service level and the stated non-equivalence, the framing indicates to refine the term organizational benefits by broadening the understanding of such outcomes and their assessment throughout the stages of accounting change. Thus, a public value approach designates a distinction between organizational-level benefits, which refer to the value to be added by accounting change based on the strategic stance of a local government (as previously outlined), and the benefits of accounting change triggered by strategizing for specific public service change and improvements (see Table 1).

Thus, the outcome state of accounting change can be assessed at both levels of analysis and by considering both immediate short-term and intermediate longer-term effects. Additionally, accounting change introduction can be assessed as a success, failure, or also a mixed success, thereby regarding certain levels of outcome effects (high, moderate, or low). Taken the case of a transitional pattern of accounting change, it represents a mixed outcome state as organizational benefits derive from successful short-term implementation but might be jeopardized when the long-term effects of acceptance and the induced accounting practice changes remain as rather uncertain. Moreover, the table exhibits the tension caused by the short- or long-term effectiveness of accounting change and its efficacy regarding the multiple constituencies of public service change, founding the cases of either complementary or contradictory public service benefits.

Furthermore, the frame indicates to further examine possible patterns of public service accounting change. In a short-term cycle, it is substantiated that public services need to mobilize resources – e.g. finance, personnel – at their disposal in

Table 1
Possible organizational benefits of accounting change.

Organizational benefits	Organizational level	(Public) Service level
<i>Transformation stage</i> Implementation (short-term cycle)	<ul style="list-style-type: none">• Achievement of key organizational objectives• Diffusion of a common set of rules, roles and operating procedures• Re-definition of structural relationships	<ul style="list-style-type: none">• Performing/achievement of key public service objectives, outcomes, or improvements• Development of local capacity in key functional areas
Institutionalization (long-term cycle)	<ul style="list-style-type: none">• Creation of acceptance and ‘infused-with-value’ (taken for granted) organizational practices (Accounting Logic)	<ul style="list-style-type: none">• Creation of significant governmental capability to improve public service standards• Creation of significant capacity to improve cross-functional resource flows and relationships

the pursuit of gaining the public value substantially, including for example inter-governmental and intra-organizational resource flows in case of co-production of valuable outputs (e.g. Osborne, 1998, 2006). Due to issues of 'new' professionalism and decentralized responsibility for public service output, previous research provides evidence that public services yield their own 'history' of replacement of accounting practices within, beside and optionally before a 'corporate' accounting systems change comes about (Brodtkin, 2011; Liguori, 2012).

Benefits of accounting change also relate to the future prospects of public service change and improvement, especially concerned with entrepreneurial advocacy for value-based policy development in a long-term cycle (Moore, 2000; Williams and Shearer, 2011). The literature categorizes the search for 'entrepreneurial' value as either an expansionary, evolutionary or a total mode of public service change according to recurrent patterns of service delivery (Osborne, 1998; Walker, 2003). Some scholars have also argued that value-based strategic behavior will fail unless sufficient resources and governmental capabilities are available to achieve the desired outcome. Advocating a more prospective stance needs to be complemented by activities to significantly renew the governmental capability in place, including for example re-design of key functional areas (Lipsky, 2010; Moore, 2000). Regarding this, research indicates that the relevance and efficacy of performance measurement is influenced by its integration into such public service change activities, e.g. political management, strategic planning, and the internal communication between the city council, executive management, city treasury, and public service staff (Ho, 2006, 2011; Taylor, 2009). In contrast, political competitiveness is accentuated as a rival explanation because the allocation of (financial) resources for a policy or program needs authorization by key stakeholders, including politicians, political overseers, or client groups. Politics remains the final arbiter of public service change, also meaning that either legal regulation or reactive stance of policy-making could restrain the agenda and success of entrepreneurial advocacy (Alford and O'Flynn, 2009; Boyne and Walker, 2004).

Thus, framing public service benefits of accounting change identifies patterns of public service change where public value creation is regulated (stewardship) or aimed to be added, subtracted or stagnant by public service change (entrepreneurial advocacy). Thereby, non-equivalence is indicated by both variability in renewing governmental capabilities and, possibly, a surpassing level of accounting capacity development. In this respect, the analysis suggests the evidence of either high or low relevance of replacement of accounting and performance measurement systems (Boyne and Walker, 2004; Ho, 2011; Moore, 2000). However, it is also important to scrutinize the alignment of 'corporate' and public service intervention activities in a context of accrual-based accounting change. Specifically, the order of implementation exhibits effects caused by organizational-level intervention activities on the opportunities of a public service to meet the accounting requirements of public service change (Eisenhardt and Martin, 2000; Fernandez and Rainey, 2006; Liguori, 2012). As already mentioned, this paper adds a resource- and capability-based view as a complementary lens to uncover the intermediate link between 'corporate'-level outcomes and the development of public service accounting practices in order to produce an output valued by the citizenry.

3.3. Exploring the link between 'corporate' accounting change and public service change

With regard to a resource- and capability-based view, shifting accounting systems and practices refers to those intangible assets and organizational capabilities that perform valuable public services (Barney, 1991; Collis and Montgomery, 1997). Intangible assets include practical and experience-based knowledge, for example in fields like accounting, budgeting, or financial reporting, that is distributed within organizational units and needs to be shared in order to perform various operations (Grant, 1996; Willem and Buelens, 2007). Organizational capabilities refer to combinations of such assets and operational routines used to transform (financial) inputs into outputs valued by customers, clients, or other key stakeholders of public service delivery (Bryson et al., 2007; Dierickx and Cool, 1989). To capture antecedents and effects of the absorption of 'corporate' accounting knowledge at the recipient public service unit, it is important to underline that the process of knowledge accumulation must be understood as resting in the organizing of human resources, respectively the 'knowledgeable agents' within a context of both accounting and public service change (Kilfoyle and Richardson, 2011; Kogut and Zander, 1992). Thus, renewing the stock of accounting knowledge based on accounting systems change refers to the acquisition and integration of people-embodied knowledge which is embedded in (internal or external) social relationships within a particular context (Kang et al., 2007; Willem and Buelens, 2007).

Due to environmental dynamics (Eisenhardt and Martin, 2000; Teece et al., 1997), it is commonly argued that organizational success hinges on an organization's ability to create and offer value to its key stakeholders based on superior knowledge assets and capabilities. Following March (1991), organizational learning is classified as origin of value creation, whereby the differentiation of exploitative and exploratory learning modes indicates that the proposed effect depends on distinct patterns of knowledge flows bearing different cost/benefit equations (Gupta et al., 2006). Research by Kang et al. (2007) and Kang and Snell (2009) differentiates the antecedent attributes of people-embodied knowledge and social relationships which are coherently aligned with either exploitative or exploratory learning. On the one hand, a 'cooperative relational archetype' is associated with specialist knowledge to mobilize the crossing-over of specific expertise within distributed knowledge structures in order of exploitative learning. In this respect, the cooperative relationships continuously expand the pool of accounting knowledge by a more focused search and in-depth knowledge exchange considering specific knowledge domains. On the other hand, the 'entrepreneurial relational archetype' and the variety of generalist knowledge are aligned revealing an exploratory learning mode in order to discover new opportunities that depart from prevailing

knowledge stocks, as illustrated by a broad range of knowledge integration covering multiple domains in a case of entrepreneurial advocacy.

According to a resource- and capability-based view, public service outcomes of accounting change are influenced by both the learning mode of public service change (exploitative or explorative) and the corresponding process of accounting-based knowledge accumulation. Considering a context of 'corporate' accounting change, the process is specified by the receptivity of public service units in terms of their accounting-based knowledge (generalist or specialist), but also by social relationships introduced by the 'corporate' order of implementation. Additionally, a complementary effect is proposed when change interventions intend to develop the entire stock of distributed accounting knowledge, especially by human resource investments.

In this respect, the order of implementation exhibits the governance mechanism on knowledge accumulation, mainly by reference to formal structures and procedures appreciated to coordinate the implementation activities throughout the change stages. Governance mechanisms are contrasted as either 'control' or 'collaboration' incorporating specific prescriptions concerning the impact of control systems on organizational behavior (Sundaramurthy and Lewis, 2003; Turner and Makhija, 2006; regarding public services: Broadbent and Laughlin, 2002; Ferlie and Geraghty, 2005). For example, more 'detailed routines' of accounting change in terms of standardized implementation structures and procedures (process or behavior control) emphasize merely conformity with the value of typical public service outcomes. Thereby, the 'control'-mechanism encourages incremental capability development within exploitative knowledge flows, but also constrains the opportunity of proactive search for public service improvements – and vice versa, relating to collaborative effects of 'simple rules' or 'principle based guidelines' (outcome or clan control) enabling explorative knowledge flows necessary for sustainable improvements of current public service standards (Eisenhardt and Martin, 2000; Turner and Makhija, 2006). Thus, exploring the link between 'corporate' accounting change and public service improvement in these terms suggests that the way relational archetypes evolve has a potentially strong influence on possible consequences of accounting change.

4. Methods

The concepts previously developed build on the link between 'corporate' patterns of accounting change in local governments and the 'embedded agency'-effect of various coping practices at the street-level of public services. Accounting and public management scholarship recognizes antecedent factors that facilitate accounting change and, consequently, the use of performance information at the street-level, for example executive leadership, change management, or the portfolio of resource investments. This study aims to extend this view by exploring the 'embedded agency'-effect and, thereby, the sequential outcome state of 'corporate' accounting changes according to the micro-level of public service change. Therefore, the purpose is best described as a theoretical elaboration in which the research design is driven by pre-existing concepts covering the link between accounting change and value creation by public service improvements (Lee et al., 1999). Theoretical elaboration is refined especially from a resource- and capability-driven view to gain insights previously not addressed in the literature (Whetten, 2009). Following Eisenhardt (1989) the research design is partly deductive and partly inductive, in order to expand the proposed link from the data without denying concepts that have been useful previously.

The study examines the creation of public service improvements caused by accrual-based accounting change in six German municipalities. Distinctive features of German local governments are the institutional setting of administrative-executive federalism and a 'dual-task' model, in which local authorities perform both statutory tasks regulated by the state and more voluntary self-government functions (Reichard, 2003; Ridder et al., 2005). In order to research the effects of accounting change interventions, the study used a multiple-case research design (Eisenhardt, 1989; Eisenhardt and Graebner, 2007; Yin, 2009). The primary unit of analysis covered the patterns of 'corporate' accounting change related to a new budget law that required local authorities to introduce accrual-based accounting. The embedded unit referred to local public services and how they dealt with 'corporate' change interventions, e.g. the prospective stance as well as the implementation strategy. According to the portfolio of public services delivered by German municipalities (e.g. child care, education and cultural amenities, garbage disposal), complexity derives from departmental responsibilities for policy outcomes and the autonomy of street-level professionals to influence public service change (Ridder et al., 2006; Wollmann et al., 2010). Assuming that conditions changed over time, temporal bracketing (Langley, 1999) identified three periods of change used to capture alteration of intended and emergent effects within the emerging processes.

The six municipalities that were studied are described in Table 2. Starting in 1999, the research sites were part of an inter-organizational project for developing a new budget law in the state of North Rhine-Westphalia (Germany). The new budget law – named 'New Local Financial Management' (NKF) – comprises primarily an output- and accrual-based budgeting system and came into force in 2005. As of that date, any municipality in North Rhine-Westphalia had to introduce NKF by 2009. In spite of the German reform trend so far, the introduction of a budget law has marked a significant shift from a more voluntary and incremental process to the coercive power of legal regulation (Budäus et al., 2003; Kuhlmann et al., 2008).

The municipalities started to implement NKF from 2001 to 2003 and improved the concept until 2005. All municipalities intended to implement NKF in their entire organization. However, only one case (case F, the smallest municipality) planned to implement NKF simultaneously in every office (fulfilled in 2003); whereas, all other municipalities planned to implement NKF 'step by step', launched in three (or more) waves of 'rolling out'. In doing so, time schedules ranged from 2005 (case E), 2006 (case A), 2008 (cases D and C) up to 2009 (case B). At the organizational level, the temporal bracketing strategy was used to differentiate the frontiers of three time periods: the initiation period, the developmental period, and the

Table 2

Description of the six studied municipalities.

Case	Inhabitants (2006) ^a	Level of debt (€/inhabitants) (2006) ^a	NPM activities initially started ...	Number of offices/of pilot offices (2003)	Selected type of pilot offices (2003–2005)	Conversion to 'NKF' (opening balance sheet)
A	590,000	2675	1993	27–7	<ul style="list-style-type: none">• Office of the mayor/council• Auditing (internal)• Urban development	01.01.2006
B	573,000	962	1998	35–7	<ul style="list-style-type: none">• Sports (facility management)• Facility management• HR Education Center	01.01.2009
C	270,000	2575	1996	37–5	<ul style="list-style-type: none">• Culture department• Library• City archive	01.01.2008
D	108,000	2896	1999	30–3	<ul style="list-style-type: none">• Library• (Adult) Educational center	01.01.2008
E	44,000	744	1999	13–5	<ul style="list-style-type: none">• Area management/garbage disposal• Tourism	01.01.2005
F	21,000	444	2001	9–6 ^b	<ul style="list-style-type: none">• Social welfare• School• Urban development	01.01.2003

^a Source: Bertelsmann-Stiftung (<http://www.wegweiser-kommune.de>).^b Restructuring and complete conversion to NKF.

implementation period. The frontier between the initiation (beginning in 1999, or by local history depending on the case) and the developmental period was linked to the start of the first wave of accounting change interventions (time period starting 2001 or later; depending on the case), whereas the frontier between the developmental and the implementation period was assigned by implementation of accounting procedures across all organizational units (time period starting in 2003 or later; depending on the case).

This sample satisfied important criteria of an embedded multiple-case design for the purpose of this study (Yin, 2009). First of all, within the common context of a new budget law the research sites are comparable with regard to a prospective stance and resource investments related to accrual-based accounting change. All the sites are well-known with respect to their modernization approach; and this generally matched the research direction. Within the research setting, there are no municipalities which deny accrual-based accounting or solely react on the legal pressure. Second, as regards the replication logic, the research sites represented important differences in size, financial resources, organizational structure, and the local history of modernization to control for possible effects of rival interventions. Moreover, the multiple-case design supports the inquiry by focusing on pattern of 'corporate' accounting change interventions, and the desire to replicate 'embedded' patterns of public service accounting change in order to explore why public services are more or less different in dealing with the opportunities of accrual accounting, and what effects emerge from such street-level agency.

Data collection and analysis were organized as follows. Data collection was grounded on the variables and categories summarized in Appendix A, and ordered within the temporal bracketing strategy. A visual mapping strategy was used to describe events and activities in each period, especially to verify the categorization that is initially derived from the literature. Within data analysis descriptive and explanatory approaches to cross-cased analysis were used in order to describe and explain what has happened in the multiple individual cases. Concepts and categories were advanced to build case-order matrixes in order to structure data analyzing within the complex setting of a multiple cases study (Miles and Huberman, 1994).

The data analysis itself proceeded in three steps. First, observing the heterogeneity of accounting change at the outset, the analysis used sub-structuring as a technique to arrange the cases according to the extent of accounting change (Miles and Huberman, 1994). Data according to the concepts of 'strategic stance/reform history' and 'strategic activities/resource investment' were collected through interviews with key informants, conducted at the end of the initiation period (2001, project managers, $n=6$), and supplemented by public and internal archival documents. A set of semi-structured questionnaire was designed to advice the interviews, especially since comparability is an important issue of cross-case analysis. For example, to be able to assess a state of accounting change based on the criteria outlined in Appendix A, each interview conducts 'single-item' questions covering the global decision-making criteria (e.g. prospected benefits, scope of accounting change interventions, benchmarking standards) to be reported by the interviewees. This was then complemented by examples of actual accounting practices, especially regarding the use of performance or accounting management tools associated with public service changes. Supplementary questions were posed to identify relevance of legal rules and (key) stakeholders, main (strategic) activities and accounting change interventions in place. This enabled a criteria-based approach (Ingraham, 2007; Moynihan and Ingraham, 2003) to assessing 'corporate' accounting systems change, especially to secure that comparing assessment results from different points of data collection was based on a

consistent categorization scheme. Appendix B reveals the procedure to exemplify how multiple constructs such as 'strategic stance/reform history' and 'strategic activities/resource investment' were assessed to identify the state of 'corporate' accounting change, based on factors and measures that derive from the literature (e.g. Boyne and Walker, 2004; Lapsley et al., 2003; Liguori, 2012). Similar procedures were developed to differentiate the outcome of public service changes. The documents (including, for instance, the public service plans, programs, and annual reports, the council orders minutes and documents, NKF-project proposals and plans, published official documents, press releases) provided also a valuable primary source of data, especially to cross-check interviews and to control for retrospective bias.

Second, data analysis used case-ordered matrixes (Miles and Huberman, 1994) displaying patterns of accounting change as the ordering category within identification of associated aspects of strategic activities (e.g. strategic agenda, resource investments, order of implementation). Similarly, the evidence of public service changes was categorized using their statutory state as the ordering variable. This analysis was based on 4–9 semi-structured interviews (typically lasting from 60 to 120 min), conducted in each case at the outset of the developmental period (2002). The interviews included respondents from top, financial, and HR management and in particular managers responsible for accounting change in public services. Multiple informants, archival and public documents were also used to obtain different perspectives and to corroborate findings at different levels of management (top/middle) and divergent organizational areas (financial department, HR department, public service units), specifically to ensure data validity.

Finally, temporal bracketing and the embedded design opened the opportunity to investigate the link between 'corporate' change interventions and public services change, using a form of predictor-outcome-consequences matrix (Miles and Huberman, 1994). Therefore, the same set of interviews was added, conducted at the frontiers of the developmental and implementation periods (2004/2005), mainly to capture emerging issues within the cases. The analytical steps of this type of a more causal inquiry are outlined in more detail in the introduction of that analysis.

5. Analysis of data

The analysis of data is based on the logic model of accrual-based accounting change identified in Section 2, and considers sequential outcome effects of 'corporate' and 'street level' accounting change. First, data analysis emphasizes the empirical evidence of comprehensive patterns of 'corporate' accounting change that produce specific outcome-states of accounting change interventions. Next, the effect of street-level agency is demonstrated by stressing endogenous accounting change interventions as an antecedent factor of public service change. The final section addresses the link between 'corporate' and 'street level' change interventions and provides the evidence that patterns of accounting knowledge accumulation weaken the long-term benefits associated with the strategic stance of 'corporate' accounting change interventions.

5.1. Patterns of 'corporate' accrual-based accounting change

The field analysis confirmed that with the internal dynamic caused by intervention activities there were considerable non-equivalent patterns of accounting change around accrual-based accounting introduction. This was displayed in the data by both the success and failure of the municipalities to cope with a similar challenge: the new budget law in charge. Archival documents illustrate that associated modernization proposals and also the six local authorities stated the significance of a transformational shift, whereas the study identified the distinctiveness of strategy formation and organizational benefits attributed to accrual-based accounting systems. Despite the stated 'self-evidence' of accrual-based accounting (Lapsley et al., 2009; Pina et al., 2009), the findings also illustrate the tension between a perhaps prospective stance and the fragility caused by resource rigidities and implementation failure due to accounting change interventions, e.g. authorization of leadership roles or a successful project administration. The analysis explored first the occurrence of non-equivalent patterns of accounting change introduction at the research sites. The data indicates that a more prospective strategic stance was associated with increased resource investments and change management activities. Analysis then proceeds with a focus on unique implications of both factors considering the sequential effects on the 'embedded' public service accounting change.

A first summary inspection comparing the six cases shows the obvious differences in the extent of accounting change with regard to both the value of developing accrual-based accounting systems (prospective, defensive) and resource investments (technological, organizational, human resources) launched for successful introduction of accrual-based accounting systems. In some cases, the strategic stance assigned accrual-based accounting to be an important part and driver of modernization practices (cases A and F) and in others it was just a replacement of current financial accounting systems (case B). In further cases it was merely a small or medium scale transitional change limited, for example, by lack of political support to address necessary resource investments (case C) or because of implementation failures (cases D and E). In order to incorporate both the strategic stance, e.g. the value proposition associated with accrual-based accounting (Boyne and Walker, 2004; Liguori and Steccolini, 2012), and the state of accounting change (Lapsley et al., 2003) into analysis, the study made up a 3×3 table to substructure the cases (see Table 3; Miles and Huberman, 1994).

The table displays the idiosyncrasy of accounting change in local government, and the possibility to order such cases by analyzing the relationship between the strategic stance and the current state of accrual-based accounting change. Thus, the case ordering ranges from category 1 – named as the 'modernization' pattern – to category 2 – termed as the 'professionalization' pattern – down to category 3 – labeled as the 'sponsorship' pattern (see Table 4).

Table 3

Sub-structuring the setting: organizational strategy and the extend of accounting change.

		Value for organizational change: Which organizational changes occurred beyond the accounting change itself and how is accrual-based accounting estimated? (Related to local history of modernization and strategic stance)		
		High, prospective, opportunity-based	Partially, or on specific bias	Low, defensive, threat-based
Outcome: Which levels of effects/expected benefits of accounting change are in place, and why?	Transformational	Case A (L) ^a Case F (S) (1)		
	Transitional Developmental		Case B (L) (2) Case C (M) ^b (2)	Case D (M) Case E (S) ^c (3)

^a Indicates the size of the municipalities: L – a large municipality, M – a medium-sized municipality, S – a small municipality.^b Case C: (2003) – accounting change failed by political decisions, city council denied the estimated implementation budget; (2005) – relaunched by managerial decisions to redirect strategic aims and the implementation strategy for accounting change.^c Case E: (2004) – switch to transitional change: decision to adapt a standard business software application supported by an external tax consultancy firm.

- (1) The ‘*modernization*’ pattern of accounting change pursues strategic agenda characterized by a multilateral focus on the portfolio of resource investments which is necessary to support and drive the modernization of public administration or public service delivery. Accrual-based accounting change is primarily valued as a compelling driving force for introduction (or maintenance) of ‘business’-like financial management systems as a new layer to capture prospective scenarios of public service delivery. Thus, accrual-based accounting was seen as an essential part of the rationale underpinning the modernization of public services, as managers in both cases stated:

‘The ‘NKF’ is a valuable source of development helping us to step forward in our management capacity’. (Chief Financial Officer, case F)

‘We have the objective to become a service-and efficiency-oriented public administration, and ‘NKF’ offers the chance to fulfill these aims’. (Project manager, case A)

- (2) The ‘*professionalization*’ pattern of accounting change incorporates a partly different focus on the public financial management itself, assessing the opportunities to enhance professionalism in financial and managerial accounting. Thus, the introduction of accrual-based accounting is valued as a core driving force for capability development, and thereby a way to increase the coherence of accounting practices currently in place. The Chief Financial Officer (case B) expressed this aim:

‘We already provide a set of well-developed instruments of financial management (e.g. cost accounting, budgeting, accrued liabilities). What we are expecting is that the instruments are finally widely used’.

- (3) Additionally, analysis reveals that getting only little more than ‘*sponsorship*’ from upper echelons decreases the level of accounting change because of the well-known risks of implementation failure and delay caused by gaps in strategy, political support, or resource investments. Thus, the study found that the induced modernization agenda depended both on value commitment and the scope of resource investments. This dependency was obvious in the two middle-sized municipalities, where the shift to accrual-based accounting was valued and sponsored by upper echelons (case D: the Mayor, case E: the Chief Financial Officer), but decreased because of lacking resource investments (e.g. by changing data systems evolutionary) and a coherent leadership role and implementation strategy (e.g. weak in managerial authority).

In keeping with previous research (Liguori, 2012; Liguori and Steccolini, 2012; Ter Bogt, 2008), the identification of patterns of accounting change and their non-equivalence indicates that a local government might be focused on a prospective stance, basically associated with the ‘self-evidence’ of benefits of accrual-based accounting (Lapsley et al., 2009; Pina et al., 2009). Such rationales legitimating the need to adopt accrual accounting were exhibited, for example, by early reports published by the inter-organizational project, and converted into initial NKF-project proposals and plans at the local level. However, successful ‘corporate’ change interventions are limited by their actual opportunities to initiate strategic actions in order to ‘switch’ accounting systems and practices, by reference to the portfolio of resource investments or implementation strategy. For instance, the data show that the portfolio of resource investments involved quite different rigidities, associated for example with weaknesses of accompanying (technological) resource investments (cases B, E and F) or the uncertainty of micro-politics around re-centralization of financial decision-making (cases A and B). Moreover, the data show evidence that opportunities as well as threats gradually occur, yet with different paces and linearity. An example for this is the prospective stance of business software adaption, in which usability increases when knowledge-based assets are achieved by initiating a coherent human resource (HR) development strategy (case A), or decreased when project as well as HR management ‘failed’ (case C). Nevertheless, such implementation failures also incorporate the opportunity to re-constitute intervention activities over time by changing each of these issues, especially illustrated by two of the research sites (cases C and E).

Subsequently, the non-equivalence of resource investments and the ‘order of implementation’ were observed to have a strong catalytic effect as antecedents of public services change and capacity development (see Table 5). A more detailed

Table 4

'Corporate' accounting change: evidence of strategic stance and overall patterns of accounting change.

Local government		Financial pressure <i>Period: 2003–2006</i>	History of modernization <i>Initial date of NKF: 1999 and 2001 (case F)</i>	Strategic stance	Resource investments to cope with accounting change			Accounting change: Pattern of behavior
					Changing technological resources	Restructuring organizational resources	Developing human resources	
Modernization	Case A (L)	High financial pressure, budget restriction	<i>Extensive</i> <ul style="list-style-type: none">Initial date: 1993Implementation of NPM-related concepts, common direction	Prospective <ul style="list-style-type: none">Core driver to modernize public services	<i>Substitutional</i> <ul style="list-style-type: none">Adaptation of business software application(Quasi) Internal service center	<i>Extensive, re-centralization of financial decision-making</i> <ul style="list-style-type: none">Centralizing of financial accounting responsibility (<i>developmental period</i>)Standardization of financial workflows	<i>Extensive, long-term cycle</i> <ul style="list-style-type: none">Assessment of prospective workforce capabilities(Moderate) link to competence-based HR training program	Transformational
	Case F (S)	Increasing financial pressure, budget restriction	<i>Minor</i> <ul style="list-style-type: none">Initial date: (2001)Implementation of some specific, task-related NPM-concepts, no common direction	Prospective <ul style="list-style-type: none">Initial point and core driver to modernize public administration	<i>Evolutionary</i> <ul style="list-style-type: none">Improvement of cash-based software(High) Resource dependency, minor influence on (external) data-processing center	<i>Extensive, re-organizing</i> <ul style="list-style-type: none">Restructuring public services units and political committeesCentralized because of size, minor (internal) restructuring financial department (<i>developmental period</i>)	<i>Extensive, long-term cycle</i> <ul style="list-style-type: none">Strong linkage between organizational development (collaborative, multiple participants) and workforce development (informal, ad-hoc)	Transformational
Professionalization	Case B (L)	Less financial pressure, successful in budget consolidation	<i>Extensive, specific</i> <ul style="list-style-type: none">Initial date: 1998–2000Implementation of accounting concepts (budgeting, cost accounting), specific direction	Prospective, biased <ul style="list-style-type: none">Core concept to improve financial management	<i>Evolutionary</i> <ul style="list-style-type: none">Improvement of cash-based software(Moderate) Resource dependencies, partial influence on (external) data-processing center	<i>Minor, re-centralization of financial responsibility</i> <ul style="list-style-type: none">Centralizing of financial accounting tasks (restructuring planned after transition to NKF)	<i>Extensive, recruiting/training, short-term cycle</i> <ul style="list-style-type: none">Assessment of current workforce capabilitiesHR training programHR career program to support internal consultancy	Transitional
	Case C (M)	Less financial pressure, increasing (2003)	<i>Less extensive</i> <ul style="list-style-type: none">Initial date: 1996–1998Implementation of NPM-related concepts, no common direction	Prospective, failure <ul style="list-style-type: none">Core concept, but failed by political decisions (2003)	<i>Substitutional</i> <ul style="list-style-type: none">Adaptation of business software application(Quasi) Internal service center	<i>No, re-centralization planned</i> <ul style="list-style-type: none">Decentralized financial accounting tasks, partial restructuring to centralize (relaunched: 2005)	<i>Minor, training, short-term cycle, failure</i> <ul style="list-style-type: none">Assessment of current workforce capabilitiesHR training program caused political decision	Developmental (caused by failure)

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Table 5

Order of implementation: evidence of non-equivalent patterns of accounting change interventions.

Local government		Context of accounting change intervention (due to reform history)	Support by politicians	Order of implementation: leadership role, internal support and implementation strategy			Accounting change intervention: pattern of behavior
				(Formal) Authorization and leadership role	Project administration and competence	Implementation strategy (sequencing)	
Modernization	Case A (L)	• Successful transitional changes, due to reform experience well-established structures and routines for leadership and coordination, involving relevant actors	<i>Yes, indifferent</i> <ul style="list-style-type: none">• Formal reporting to politicians, interests are limited to general information (e.g. periodical reports)• No activities from politicians	<i>Functional leadership, strong external support</i> <ul style="list-style-type: none">• Project management as specialized task of a financial sub-unit• Managerial responsibility by project leader, closely linked with key actors (mayor, CFO)	<i>Extensive, strong internal support</i> <ul style="list-style-type: none">• Project executed by a self-regulating task force, located in sub-unit of financial department,<ul style="list-style-type: none">• 'Integrated' support for public service change	<i>Planning, integrative approach</i> <ul style="list-style-type: none">• Master plan/internal coordination of intervention events and activities, strong linkages and leading role to projects dealing with parallel change activities	Emphasis on collaboration, institutionalized
	Case F (S)	• Newly established project, promoted by CFO (project manager) in strong cooperation with the mayor	<i>Yes, integrating, indifferent</i> <ul style="list-style-type: none">• Involving politicians during initiation phase, active information policy,• No activities from politicians	<i>Managerial leadership, strong external support</i> <ul style="list-style-type: none">• Managerial responsibility by CFO, very closely linked to political overseers (mayor called: 'Minister of Foreign Affairs')• Functional responsibility by finance department	<i>Extensive, strong internal support</i> <ul style="list-style-type: none">• Formalized structure and procedure of organizational development, integration of sub-units into change activities,• Public service change supported by an cross-functional project management	<i>Collaborative, primarily informal</i> <ul style="list-style-type: none">• Cooperative, multiple stakeholders, based on the formalized structure• Strong promotion by CFO, based on high commitment and involvement, day-to-day practices of cooperation	Emphasis on collaboration, ad-hoc (informal)
Professionalization	Case B (L)	• Successful transitional accounting changes within the department of finance, well experienced NKF project manager	<i>Yes, indifferent</i> <ul style="list-style-type: none">• Interests are limited to general information (e.g. periodical reports)• No activities from politicians	<i>Functional leadership, moderate external support</i> <ul style="list-style-type: none">• Project management as core task of a financial department head (budget planning)• Well-established cooperation between CFO and project manager	<i>Extensive, strong internal support</i> <ul style="list-style-type: none">• Project executed by an internal staff unit• Strong internal support for accounting change, support by HR career program ('internal consultancy')	<i>Planning (formal), controlling/monitoring</i> <ul style="list-style-type: none">• Coordination by a detailed process planning, strong, formal linkages to projects dealing with cost accounting and HR development	Emphasis on process and outcome control, formally structured
	Case C (M)	• Newly established project management, promoted by mayor and CFO	<i>Yes, indifferent</i> <ul style="list-style-type: none">• 1999–2003: Interests are limited to periodical reports• No activities from politicians• 2003–2004: Political support declined due to increasing financial pressure	<i>Functional leadership, weak external support</i> <ul style="list-style-type: none">• (Weak) managerial responsibility located by a staff unit, directly reporting to CFO• Functional responsibility by project manager (externally recruited), competing for resources with other projects, e.g. managerial accounting	<i>Low, weak internal support</i> <ul style="list-style-type: none">• High competence, but concentrated on general knowledge (e.g. developing NKF concepts and procedures)• Minor support for public service change	<i>Collaborative, informal</i> <ul style="list-style-type: none">• Internal coordination of functional tasks, informal cooperation with parallel projects,• Marginal cross-functional cooperation with units or concurrent projects• 'Roll out'-plan caused rejection by politician	Emphasis on collaboration, ad-hoc (informal), failed

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analysis reveals rigidities of coping with required resource investments, especially relating to allocation of accounting knowledge within the workforce (Gilbert, 2005; Leonard-Barton, 1992), and relevance of the leadership role and implementation strategy, as the 'order of implementation' creates the opportunities to improve governmental capabilities at the street-level (Eisenhardt and Martin, 2000; Kang and Snell, 2009; Turner and Makhija, 2006).

The risk of implementation failure as well as comparison of 'modernizing' and 'professionalism' illustrates notable differences in change interventions to rearrange the dispersed stock of (primarily cash-based) accounting knowledge. Archival documents show that state-level modernization proposals and also all the six local authorities emphasized Person-Job fit and draw up certain HR training programs. Contrastingly, the analysis reveals that the assessment of workforce development remained quite an uncertain issue in the on-going course of action. In particular, HR investments were associated with the gap between workflow restructuring (e.g. a more centralized configuration, upgrading of positions and redeployment of accountants) and the alignment of either the current cash-based (cases B and C) or the prospective accumulation of accrual-based accounting knowledge (case A) within the workforce. By reference to HR development and strength of HR management systems, the analysis illustrated that a shift from required short-term trainings to more transformational-related HR interventions gradually emerged. That being so the state of HR development produces two sequential consequences. Failures associated with HR routine rigidities (e.g. variety in time frames, heterogeneity in education and training) lead to the non-availability of accrual-based accounting knowledge that limits public service change intervention activities to the current accounting knowledge-base. Correspondingly (see Table 7), public services are forced to continuously develop their 'embedded' knowledge base by gradual experimentation ('learning by doing') and mostly without external support, perhaps causing a more incremental effect on public services change, as for example stated by the department head of one the public library cases (case C):

'We are learning how to deal with the new possibilities of the NKF. That means an entirely new way of dealing with financial resources than previously. We have to gradually move away from that, in our heads, and then we can say: We are packing other packages'.

Sequential effects of the 'order of implementation' can be investigated regarding the partial constellations of political support, leadership role and implementation strategy within the ongoing change process, thereby stressing that consequential outcomes (e.g. acceptance, adoption, knowledge integration) are covered by the governing mechanism in place. In this respect, the follow-up step of analysis reveals the difference between the 'propositional inventory' of accounting change interventions and its distinct form in a local government (Fernandez and Rainey, 2006; Kang and Snell, 2009), as concerns the value of control or collaboration for changing the 'use' of performance information at subsequent public service units.

Similar to the aforementioned results, the data showed evidence that strategic stance was associated with increased change management activities. Moreover, implementation failure considers once more that not all research sites literally replicate the proposed effect. Examples can be found in the cases of the 'sponsorship' pattern of accounting change (cases D and E). Less external support by upper echelons induces the weakness of functional and managerial leadership, thereby decreasing the efficacy of the implementation strategy. Within both patterns of strategic stance the catalytic effect was observed. According to 'professionalization', the state of a 'control mechanism of knowledge governance' is illustrated by detailed 'step-by-step'-schedules to direct and monitor the tasks, events and activities throughout the change process (cases B and C). Moreover, in one case the implementation strategy is supplemented by an 'internal consultancy' concept to safeguard the operational knowledge transfer to recipient sides. As the project leader (case B) explained it:

'We said: It is not sufficient that the offices are trained. We need people who accompany them consecutively. Those, who are there 100% exclusively for the envisaged task of 'consulting' the public service units. This has been an assessment of us, with no particular background'.

Consequently, architectural knowledge by internal consultants is provided, e.g. a shared understanding of the interconnections and how the new accrual-accounting components fit together (Kang et al., 2007; Kang and Snell, 2009), in order to integrate 'corporate'- and 'street-level'-domains of accounting change, but a more detailed and standardized procedure probably limits the opportunities of knowledge integration within a public service domain. In contrast, a more collaborative approach observed within the 'modernization' pattern (cases A and F) inspired a broad and more flexible sharing of accounting knowledge to be organized by internal networks to synthesize the available accounting knowledge. For example, powered by first experiences, one project management (case A) arranged an integrated advisory and mentoring concept (covering financial, accrual, cost, and asset accounting expertise) 'symbolizing its fortune by a four-leave clover' (project assistant, case A). According to sequential consequences, the evidence indicates that order of accounting change creates a distinguishably different relational capital to manage knowledge transfer and accumulation within the setting of accounting change interventions.

5.2. Public service improvement and patterns of endogenous accounting change

Previous research has already emphasized that the public service units in local government exhibit specific patterns of accounting systems change, categorized for example as either an incremental or more radical change (Ho, 2011; Liguori, 2012). Finding of this study show that endogenous accounting system changes occur in order to maintain or improve the value of a public service, given a specific context of environmental change and public policy or program regulation. Thus,

street-level agency for public services change and improvement produces accounting change interventions that amplify the pattern of local accounting capacity development.

The analysis used the statutory nature of public services as the ordering variable to describe the context of public service change in order to distinguish the associated state of accounting capacity development (see Table 6 – Miles and Huberman, 1994). With regards to the statutory nature of public services provided by German local governments, delivering of public welfare services (e.g. schools, family welfare, asylum-seekers) and some internal offices (e.g. auditing) is, primarily, regulated by the state or federal laws, whereas the more voluntary services of economic welfare (e.g. garbage disposal, area/facility management, city/urban development) or social welfare (e.g. public libraries, museums) are mainly influenced by local policies, especially in order to maintain or change (financial) resource allocations (e.g. 'cutting the budget'-policies).

A first summary inspection of the data (see Table 6 – first column) illustrated that 'budget restriction' is a common reference to describe pressures on public services change, regardless of the service at issue. Moreover, it showed that proposed benefits of accrual-based accounting were broadly acknowledged as both an opportunity to upgrade financial and managerial accounting and a strategic tool to maintain or improve public service outputs. All of the interviewees approved accrual accounting for the 'financial transparency'-effect, but further evaluation of effects of street-level accrual-based accounting challenges illustrated the heterogeneity in the rationales.

Despite the prevailing position of financial performance criteria, data confirmed that the particular environment (e.g. public programs, local policies, politicians) also provides a specific, but always varying set of substantive performance criteria or 'output'-states of public service delivery. In particular, pressures on public services change involved (general) risks of expenditure increase induced by challenges of contemporary conditions of public service delivery (e.g. in family welfare, social security) as well as consequences of 'cutting the budget'-policies for sustaining the current service standards (e.g. facility management, library, garbage disposal). Additionally, advocacy to strategize on public service improvements is considered. This is exemplified by the public library cases and their challenge to continuously expand a media-based 'service model', especially to address new target groups. Table 6 summarizes the evidence on public service changes and the associated state of accounting capacity development. In almost every instance, accounting change interventions are valued referring to both, the desired aims of public services change, e.g. authorized by stated value propositions or legal regulation (a long-term, institutionalization effect), and operating frameworks and already achieved states of accounting capacity development (a short-term, implementation effect).

According to this, the findings indicate that street-level agency produces and strengthens either continuity in (cash-based) accounting practices or more transitional, but so far mainly single-handed, replacements of accounting procedures or practices, e.g. referring to in-year cash-based output budgeting (public libraries), pre-investment analysis (facility management), or cost accounting systems (public libraries, (adult) educational center). The adoption of 'businesslike' accounting concepts (facility management, garbage disposal), political ratings of asset investments and community affairs (urban development, public libraries) and, in general, increasing expenditures formed the common basis for justification of the necessity of accrual-based accounting systems. Moreover, the analysis reveals that the distinct stances of public service change were associated with either a more general and loosely coupled approach to accounting capacity adjustment, or more focused efforts directed to replace the recurrent accounting and performance management practices.

The first case was observed in more statutory public services (family welfare/social security, auditing). In the absence of street-level discretion and authority to give direction to public service delivery (e.g. regulated by legal or professional standards), accounting capacity development was primarily associated with public tasks administration. Notwithstanding, financial accounting practices were mostly relevant, for example, because of increasing expenditures for 'benefit payments', but replacement of established accounting systems was scrutinized because of missing an 'added value' for either ongoing servicing or payment obligations. One of the executives (family welfare and security, case F) recalls the consequential effect of statutory requirements:

'I believe that we are the office with the least effect on the work. Whether we use accrual accounting or not, our clients are not interested in that. Because it has no effect on their payments or benefits. The amount of benefits remains the same whether we use accrual accounting, or the old [cash-based] form'.

In contrast, the more voluntary services estimated an accrual-based 'upgrading' as indispensable to exploit the opportunities of financial autonomy and resource allocation, and, thereby, their responsibility for public service improvements. In particular, comparison of facility management (case B), garbage disposal (case E) and the public library cases (cases C and D) reveals the 'entrepreneurial advocacy' as a main matter of concern of prospective capacity development. A broad and decentralized range of accounting knowledge was estimated as a parent capacity to sustain the value of public service models, also with respect to institutionalized benchmarking systems. Public managers themselves stated their role as 'knowledgeable' agents with regard to the ongoing requirement to enhance their accounting capacity, and by doing so to extend the usability of financial performance information. One departmental head responsible for local area management (garbage disposal, parks commissioning; case E) explained this obligation:

'Those who have always been intensely concerned with changing their accounting procedures are very keen on that they can take the last building block for it and that as soon as possible'.

Table 6

Creating public value: evidence of relationships between public service change and accounting capacity development.

Public service Type of public service/case of origin		Public service change		State of accounting capacity development			Public service accounting change: pattern of behavior
		Context	Strategic discretion	Relevance	Change in accounting	Factors contributing to high/low degree of accounting change	
Statutory (public welfare)	School (F) Family welfare and social security (F)	<ul style="list-style-type: none">• High value of equity, e.g. for asylum seekers, welfare recipients, pupils• Specific risks by increasing expenses for benefit payment	<ul style="list-style-type: none">• Bureaucratic discretion, strategic orientation due to environmental changes (federal/state law as source of authority and street-level behavior)	Low, no specific purpose, transparency as a general incentive and 'output'-criterion	No, administration of benefit payment, book-keeping as standard practice, centralized financial accounting	<ul style="list-style-type: none">• No specific capabilities, primarily specialist (cash-based) knowledge• Adjustments based on internal support/limited range of knowledge exchange	Exploitation financial accounting
Voluntary (economic welfare)	Area/facility management (B) Town cleaning (E)	<ul style="list-style-type: none">• High value of performance standards (output, prices, efficiency)• Risks caused by increasing costs and restricted budgets	<ul style="list-style-type: none">• Strategizing due to local political goals• Opportunities/threats of outsourcing services (e.g. garbage disposal)• Accrual accounting as pre-condition to capital budgeting, cost calculation, internal charging	High, improving (internal) managerial accounting, competitiveness and price/cost calculation as 'output'-criterion	Moderate, internal budgeting, cost accounting, procedures of (external) benchmarking, performance-related pay for workers	<ul style="list-style-type: none">• (Extended) generalist knowledge in unit-specific accounting domains• Decentralized accounting expertise (CO, key users)• Exploring managerial accounting decreased by formal procedures of cash-based accounting	Exploration managerial accounting + budgeting
	Urban/city development (A, F)	<ul style="list-style-type: none">• Value of urban development as a 'new' public service	<ul style="list-style-type: none">• Political rating of investments and annual funding Threats to increase the output level (e.g. industrial location)	Moderate, improving (internal) financial accounting and budgeting	Low, budgeting and financial accounting, moderate relevance of output measures (e.g. rate of expanding regional businesses)	<ul style="list-style-type: none">• No specific capabilities, professional expertise CO (case A)• Exploring financial accounting decreased by (cash-based) accounting knowledge and formal procedures	Exploitation financial accounting + budgeting
	Sports (facility management) (B)	<ul style="list-style-type: none">• Preserving value of physical assets (sports facilities)• Increasing risks of deferred maintenance	<ul style="list-style-type: none">• Political rating of investments and annual funding No specific direction, prioritizing investments, constrains caused by budget consolidation	Moderate, improving managerial accounting	Low, internal budgeting, increasing relevance of service-related cost accounting (e.g. sports hall charges),	<ul style="list-style-type: none">• No specific capabilities, primarily specialist by key user (assistant, part-time)• Adjustment of cost accounting decreased by internal (cash-based) accounting knowledge	Exploitation, managerial accounting

Voluntary (social welfare)	Cultural department/ library (C)	<ul style="list-style-type: none"> • Political rating of voluntary services • Decline of financial resources, 'cutting the budgets'-policies 	<ul style="list-style-type: none"> • Strategizing due to professionalism and desired ends of public services improvement • Relative autonomy, shaping 'outcomes' by leveraging resources to 'new' library service model • Improving (external) funding and (internal) cost calculation 	High, improving financial accounting and budgeting (internal), accountability as the specific incentive and 'output'-criterion	Moderate, financial accounting and output-budgeting, decentralized cost accounting, procedures of (external) benchmarking (e.g. library networks), performance reporting	<ul style="list-style-type: none"> • Extended accounting capabilities, knowledge (recruited) • Strong, mutual cooperation • Exploring capability building decreased by formal procedures of cash-based accounting and input-budgeting 	Exploration, financial accounting + budgeting
	Library (D)	<ul style="list-style-type: none"> • High value of performance-based standards • Decline of financial resources, 'cutting the budgets'-policies 	<ul style="list-style-type: none"> • Strategizing due to professionalism and desired ends of public services improvement • Relative autonomy, offering public services with regard to public needs (quality of libraries) • Threats of increasing fees/charges (=losing clients) • Political rating of annual budgets • Threats of increasing fees/charges (=losing clients) 	High, forcing managerial accounting, accountability as the specific incentive and 'output'-criterion	Moderate, financial accounting and output-budgeting, cost accounting, financial planning, user statistics, procedures of (external) benchmarking (e.g. library networks)	<ul style="list-style-type: none"> • Extended accounting capabilities, specific knowledge by assistant (internal, partly generalist), • Strong, mutual supportive cooperation CO/assistant • Exploring capability building decreased by cash-based procedures/input-budgeting 	Exploration, managerial accounting + budgeting
Internal services/ organizational units	(Adult) Educational center (D)	<ul style="list-style-type: none"> • Value of professional standards and output performance 	<ul style="list-style-type: none"> • No specific direction, compulsory task, legal and professional auditing standards • No specific direction • Efficiency/costs of internal service providing (HR training) 	High, forcing managerial accounting	Moderate, input-budgeting, cost accounting, internal reporting	<ul style="list-style-type: none"> • Specific, partly generalist knowledge 	Exploitation, managerial accounting
	Auditing (A)	<ul style="list-style-type: none"> • Decline of financial resources 	<ul style="list-style-type: none"> • No specific direction, compulsory task, legal and professional auditing standards 	Low, because of standard procedures, regulated by law	No, book-keeping as standard practice centralized financial accounting	<ul style="list-style-type: none"> • No specific knowledge • Adjustments based on cooperative relationships 	Exploitation, financial accounting
	HR – educational center (B)	<ul style="list-style-type: none"> • Professional training standards • Increasing costs 	<ul style="list-style-type: none"> • No specific direction, compulsory task, legal and professional auditing standards • No specific direction • Efficiency/costs of internal service providing (HR training) 	Moderate	Moderate, input-budgeting, cost accounting, reporting	<ul style="list-style-type: none"> • Specific knowledge by accounting assistant (internal, partly generalist), cooperation with CO 	Exploitation, managerial accounting

Subsequently, categorizing the evidence of non-equivalent patterns as either a more exploitative or a more explorative mode of public sector accounting change – as proposed by organizational learning research (Kang et al., 2007; March, 1991) – reflects that local accounting capacity development covers a discrete outcome state of ‘corporate’ accounting change interventions. Street-level agency occurs because effects of accounting capacity development are embedded in change activities in order to sustain the value delivered to the citizenry. Moreover, this constitutes a preliminary case that the common term ‘public service improvement’ (Boyne, 2003b, 2004) encompasses distinct modes of ‘accounting for change’ (Lapsley and Pettigrew, 1994), thereby converting public service change into the specific role of ‘strategic’ accounting knowledge provided as a source for successful governmental capability development.

On one side, within this study predominantly in a statutory context, the current state of accounting capacity development denotes the value of specialist (cash-based) accounting knowledge for sustainment of the existing ‘output’ of accounting procedures and practices. Activities assigned to accounting knowledge development are limited and aligned with continuous adjustments, mainly introduced by replacement of accounting techniques controlled by internal experts. Hence, it tends to be less effective to acquire and assimilate a broad range of ‘entrepreneurial’ financial or managerial accounting knowledge, which is, usually, associated with a transformational ‘corporate’ accrual-based accounting change. Contrastingly, the value of accrual-based accounting knowledge, in this study associated with an economic or social welfare context, tends to be more beneficial according to multiple knowledge domains, in particular when the development of such domains is considered to extend a local ‘history’ of accounting change. In such a context of public service change a transformational stage of ‘corporate’ accrual-based accounting provides both architectural knowledge immediately available for strategic tasks, and various opportunities to acquire, share and synthesize a broader range of accounting knowledge, for example to search for legitimacy to attract ongoing authorization of resource investments.

5.3. The link between ‘corporate’ accounting change interventions and street-level agency: exploring mutual alignment

The analysis so far has outlined that accrual-based accounting introduction in a local government incorporates ‘corporate’ change interventions and, moreover, possible consequences of street-level agency. The previous results provided evidence that change interventions at street-level are associated with the value of accounting practices as a source of public services change. Thus, the final step of analysis considers this link and examines how the relationships between ‘corporate’ accounting change intervention and the patterns of street-level accounting change emerge.

In keeping with the previous results of analysis, the antecedent ‘corporate’ factors that are most likely to influence public services change intervention set up different, and perhaps contradictory conditions to introduce accrual-based accounting at street-level. Analysis also needs to control for specific mode of public services accounting change (exploitative or explorative), especially to consider replication logic according to this stage of analysis. Thus, Table 7 summarizes the evidence using a form of a predictor-outcome-consequences matrix (Miles and Huberman, 1994). This type of a more causal analysis covers the analytical steps necessary to unfold the sequential consequences. First, it summarizes the patterns of accounting change in order to describe conditions that are important contributors to public service change intervention. The first two columns (named as ‘corporate’ accounting change interventions) deal with the antecedent factor in terms of HR investments and the order of implementation, assembled as most predictable according to both the literature earlier discussed and the precedent cross-case analysis. The next step (third column) repeats the mode of public services change, as described in the previous section, in order to distinguish the effect of street-level agency. Finally, the display categorizes the emerging consequences (named as evolving mechanisms), with reference to variables categorizing knowledge integration activities. Then, considering replication logic and the circumstances at the research sites, Table 7 outlines, first, the evidence on sequential consequences of the patterns of strategic stance (modernization – cases A and F; professionalization – case B) each related to a non-complementary case of public services change (exploitation – statutory services; exploration – voluntary services), followed by evidence from the rival patterns of non-strategic ‘corporate’ accounting change interventions (professionalization, failed – case C; sponsorship – cases D and E).

Although street-level agency strengthens the development of public service accounting capacity, it perhaps threatens the long-term benefits associated with a successful ‘corporate’ accounting change. In keeping with previous research (Kang et al., 2007; Kang and Snell, 2009), the findings reveal that street-level agency produces particular modes of relational behavior that significantly contradict the outcome state of ‘corporate’ accounting change interventions.

First, street-level agency mentioning an exploitative mode of public services accounting change jeopardizes the principal value assigned to a transformational state of accrual-based accounting and, thereby, most likely weakens its effect on public services change. For instance, within the modernization pattern of ‘corporate’ accounting change (cases A and F – Table 7, first row), the antecedent triggers (HR investments, collaboration) came into effect by changing common practices of cash-based accounting, but the effect did not incorporate further organizational benefits in terms of a ‘taken for granted’-practice in public services change. It is rather the case that street-level agency causes this unintended and notably contradictory effects. The ‘regulated nature’ due to ‘output’ and the patterns of client- or bureaucratic practices (family welfare, internal auditing) shaped first and foremost the associated leadership role assigned to promote accounting change, as one department head explained (family welfare unit, case F):

Table 7
Public service improvement and 'corporate' accounting change interventions: Evidence of mutual alignment.

	'Corporate' accounting change interventions		Public service change	Evolving mechanisms of accounting knowledge integration		
	Human resource investments	Order of implementation		Internal leadership (acceptance, promotion)	Developing accounting knowledge	Managing accounting change (knowledge integration)
Modernization <i>Prospective Transformational</i> Case A, F	Prospective, long-term cycle of HR development	Emphasis on collaboration, institutionalized or ad-hoc (informal)	Exploiting financial accounting • Statutory - Family welfare/(social security - F) - Internal services (auditing - A)	<i>Delegative, passive, low acceptance</i> • No expectations how to improve financial management issues by accrual accounting, especially because of the 'regulated nature' of services • Inertia, resistance: asking 'why' with regard to accounting change	<i>Upgrading financial accounting, 'key users'</i> • Shifting implementation activities to key users	<i>Low cross-functional cooperation, low trust</i> • Criticism of change management e.g. information policies and deficits, low degree of involvement of middle managers • Low capabilities to assess opportunities of accrual accounting, low experiences with change processes
Professionalization <i>Prospective, biased Transitional</i> Case B	Recruiting/training short-term cycle	Emphasis on process and outcome control, formally structured ('internal consultancy')	Exploring managerial accounting • Voluntary - Economic welfare (area/facility management - B)	<i>Cooperative, active, monitoring</i> • Specific concepts how to improve facility management and internal charging • (Internal) Re-structuring of service units • Introducing coordination mechanisms, e.g. internal planning conference/real estate conference • Promoting change activities	<i>Upgrading local accounting expertise</i> • Increasing accounting capabilities because of long-lasting experience with unit-specific accounting systems • Increasing accounting capabilities leveraged to operational tasks, e.g. bookkeeping, technical support	<i>Cross-functional cooperation, moderate, low trust, divergent interests</i> • Risks of re-centralizing financial accounting procedures • Criticism with regard to general accounting capability of the financial office, no external support/verification of capability development • Concurrent interests on re-organizing tasks and procedures
Professionalization <i>Prospective, failure Developmental</i> Case C (failure)	Short-term cycle, mainly recruiting/training, failed by political decisions	Emphasis on collaboration, failed	Exploring financial accounting and budgeting • Voluntary - Social welfare (library - C)	<i>Cooperative, active, monitoring</i> • Desired images to improve library services, e.g. new service models using multimedia technologies, outsourcing • (Internal) Restructuring of public service units • Strong, more participative cooperation with key users (internal, departmental level) • Active, conflict-solving interventions aimed at securing (partial) interests	<i>Upgrading local accounting expertise, forcing HR development</i> • Forcing internal accounting capacity building, alignment of position, procedures, methods • Recruiting of a qualified public sector accounting assistant • Active, participation in concept/method development during the developmental phase • Modification/replacement of unit-specific accounting systems	<i>'learning by doing', low cross-functional cooperation</i> • Coordination by a (Departmental) service unit, ad-hoc, informal • Criticism of change management e.g. information policies and involvement of middle managers
Sponsorship <i>Defensive, failure Developmental</i> Case D, E (failure)	Minor, short-term cycle	Emphasis on outcome control, failed	Exploring managerial accounting and budgeting • Voluntary - Social welfare (library - D)	<i>Cooperative, less active, low commitment</i> • Disappointment concerning the aims and benefits of accrual accounting, effects are claimed to be not visible • Low commitment with regard to change management as there are specific expectations how to manage change activities	<i>Upgrading local accounting expertise</i> • Increasing (internal) accounting knowledge and expertise because of long-lasting experience with unit-specific accounting systems (reform history) • No HR development during the developmental phase (launched: 2005->)	<i>'Learning by doing', ad-hoc cooperation, low trust</i> • Mainly specific, problem-based activities • Ad-hoc, cooperation between project assistants and key user • No cooperation at middle-management level

'As a public welfare office, we are hardly affected by double-entry bookkeeping. I was not even in the project group here, because my services are virtually outside. The changes in social regulation require us all'.

Subsequently, consequential adjustments of 'corporate' accounting change at street-level were associated with standard accounting procedures and practices. Change interventions were primarily assigned to the specialized (cash-based) expertise localized by key users (e.g. accounting assistants), associated with cross-functional relationships to project management in order to integrate the operational knowledge-base for re-structuring work flow procedures. Moreover, the prospective stance of resource investments and information policy was questioned because of the low-value and uncertain outcomes of an accrual-based accounting change at street-level.

Similarly, the intervening effect of street-level agency occurs referring to an explorative mode of public services accounting change which was threatened by rigidities originated in a transitional state of accounting change (case B – Table 7, second row). The more biased stance of 'professionalization' involved control-based governance mechanisms (Turner and Makhija, 2006) that equally weakened the possible effects of local capacity development in public services change. 'Entrepreneurial advocacy' (Boyne and Walker, 2004; Moore, 2000) exhibited by the voluntary public services (facility management, garbage disposal, public library) was displayed by a local history of capacity development that constitutes the incentives to amplify the accounting practices in place, in particular the suitability of accrual accounting as a hub to assimilate varied accounting systems. For instance, attractiveness is stimulated by restrictions attributed to the cash-based rationale of 'corporate' accounting procedures, e.g. the lack of depreciation methods. Thus, accrual-based accounting introduction prompted street-level agents to focus on the upcoming opportunities. This was illustrated by the department head of the facility management case, who explained that an accrual-based accounting system is a precursor to substantiate an internal facility management concept for two reasons: it promises financial transparency according to the (real) costs of office occupancy rate for each of the public service units, and, thereby, the adjustment of the (full) costs calculated for each of its outputs by a public service unit. In a similar vein, the public library cases (Table 7, third column) exhibit a prospective, more explorative stance according to their accounting change activities:

'After having just said, oh God, what's the point, and that just means more work for us, we now slowly get benefits for the library. Previously, this was never an issue at all. But the benefits we need to discover ourselves. I have to honestly say, that's good about this thing'. (Department head, public library, case C)

Data also reveals that expected street-level outcomes were contradicted by the 'corporate' change interventions, in particular the proposal to re-centralize the distributed financial accounting knowledge (see Table 4 – case B). The ambiguities were associated with both the re-distribution of accounting knowledge and changing the role of hierarchical controls in financial decision making:

'It is about whether the financial accounting will be centralized. This is a very important component and it plays a significant role; since we do not yet know how we must position ourselves, because we do not know what effects it will have. It has no sense to raise capital on the capital market and then not to assign the capital to the buildings. Then I'll never know how far the building is written-off? And what is to be done then.' (Department head, facility management, case B)

'I am not fundamentally against centralization of financial accounting. It generally makes sense. But there is no open-ended process. That bothers me. Not knowing what is really the objective. The goal is not taught, but we feel: we are to be controlled'. (Department head, public library, case D)

According to this, ambiguity associated with re-distribution of accounting knowledge produced criticism and, moreover, decreased the trustworthiness of accrual-based accounting expertise, especially when it is wholly dedicated to one finance department unit. Thus, the weakening of 'entrepreneurial' relationships was reflected as an upcoming risk of a higher degree of centralization that, additionally, decreased the opportunities for public services change:

'Furthermore, when both capital budgeting and depreciations are calculated in the treasury, without us being able to see the effects, then the whole thing makes no sense'. (Department head, facility management, case B)

Similar rigidities for entrepreneurial advocacy in public services change were associated with the withdrawal of financial authority and budget control from street-level. This was observed in the public library cases as the department heads critically judged the upcoming risk of strengthening 'hierarchical controls', especially with regard to formal procedures that limit their discretionary competence to leverage financial resources. Moreover, the ambiguity in conjunction with implementation failure jeopardized the expected entrepreneurial stance of cross-functional cooperation. Change intervention activities, especially when concerned with non-strategic 'corporate' accounting change interventions (Table 7 – third and fourth row), were blamed with regard to information policies and their deficiency in involving professionalism located at street-level. Subsequently, the significance of different strategic rationales reinforced by implementation failures decreased the prospective stance associated with accrual-based accounting at the street-level:

'What I did not quite understand was whether the financial-unit wants to exercise tight control over us. And this control is not in the sense of controlling, but actually in terms of: Trust, but verify'. (Department head, public library, case C)

'There are two essential keys for lacking the euphoria. First, the aim is not really known, the way either. It is something that is in my head, but still' not what one conveys the vision, which is 'why should we go this way' then. And when the target is not known, then it is hardly to be required that there is a great euphoria in everyday practices'. (Department head, public library, case D)

Table 7 summarizes the evidence on the street-level effect and the sequential consequences of each of the 'embedded' cross-functional behaviors according to benefits associated with 'corporate' accounting change interventions. In almost every instance, relational behavior assigned to be supplementary to accounting capacity development at street-level contradicts and potentially jeopardized 'corporate' change interventions. Case evidence underscores that a low degree of complementarity and the ambiguities of mutual adjustments threatened the prospective stance associated with 'corporate' accounting change interventions. Subsequently, case evidence emphasizes that theoretical elaboration on the 'embedded agency'-effect according to street-level of analysis reveals more than explaining sequential effects of accounting change interventions as either implementation failure at the organizational-level or resistance at the street level.

6. Discussion

The empirical observations presented in the previous section show different patterns of accrual-based accounting change in local governments and how building this 'corporate' capacity is carried out in practice. As regards to the research questions, the observations have indicated that public services apply different modes of public service improvement, in particular associated with either a more exploitative or explorative approach to adjust their endogenous accounting capacity. The evidence also outlines that street-level agency produces accounting change interventions that amplify the pattern of local accounting capacity development. In keeping with research previously discussed, the current study identifies corporate and street-level change interventions as unique determinants of organizational benefits that derive from accrual-based accounting introduction. Moreover, evidence illustrates that the mechanisms of mutual alignment threaten the long-term benefits associated with the prescriptions of a successful 'corporate' accounting change. Recognizing this distinction and the sequential and intermediate outcome effect in terms of relational archetypes (Kang and Snell, 2009) provides a refined view of the mechanism by which both subtypes influence and weaken the prospected outcome-state of an accounting change.

Based on the logical model of sequenced outcome-states of accounting change identified in Section 2 (Carlin, 2005; Liguori, 2012), the observations from this study are used to develop a more comprehensive framework that maps how the 'embedded agency'-effect impacts the prospected outcome state of accounting change. Commonly, pressures to accounting change are assumed to be the common point of departure initiating 'corporate' accounting change activities. Such pressures stem from both institutional requirements and – with equal relevance – from the strategic agenda pursued by a local government (Lüder and Jones, 2003; Pollitt and Bouckaert, 2004). The current study decomposes 'modernization' and 'professionalization' as overall patterns of 'corporate' accounting change interventions, and also considers causes of implementation failure as a rival explanation of the immediate outcome state. 'Corporate' accounting change interventions are associated with a portfolio of resource investments, mainly in order to replace the current accounting systems, and also change management activities (internal support, implementation strategy) (Boyne, 2003a, 2004; Fernandez and Rainey, 2006). In this respect, the order of implementation exhibits the overall patterns of 'control' or 'collaboration' as mechanisms with a strong catalytic effect on the 'embedded' public service accounting' change. Additionally, and more related to street-level analysis, the data analysis emphasizes the (subordinate) role of accounting systems by means of learning more about managerial or political alternatives of public service improvement (Brodtkin, 2008; Moore, 2000). The data reveals that public service outcomes of accounting change are influenced by both the learning mode of public service change (exploitative or explorative) and a corresponding process of accounting-based knowledge accumulation. Considering a context of 'corporate' accounting change, the process is specified by the receptivity of public service units in terms of their accounting-based knowledge (generalist or specialist), but also by supplementary cross-functional relationships in order to gain public service benefits of accounting change. Notwithstanding, legal regulation as well as reactive stance of policy-making are rivals explaining, for instance, a more transitional outcome state of public services accounting change. Moreover, data analysis reveals the link between 'corporate' accounting change interventions and the associated 'embedded agency'-effect because non-complementarity and the ambiguity of mutual adjustment weakened the strategic stance associated with 'corporate' change interventions.

In this respect, the current study helps to refine understanding of the mechanisms that cause the sequential outcome state and its consequential effects, especially by considering the conceptual frame of relational archetypes (Kang et al., 2007; Kang and Snell, 2009). As regards to the key contribution a variable-by-variable matrix² is used in order to associate the two main dimensions at issue: 'corporate' in distinction from 'street level' accounting change interventions. Following Doty and Glick (1994), the first-order constructs are used to signify unique patterns or types of accounting change in local

² Within public and strategic management research this type of explanatory analysis is broadly used to order and integrate tentative empirical results into archetypal patterns (see for example Henderson and Clark, 1990; Kang et al., 2007; Knutsson et al., 2008; Osborne, 1998; Ridder et al., 2012; Yan et al., 2002).

Table 8

Accounting change and public service improvement in local governments – alignment matrix.

		Organizational level: Mode of accounting change interventions	
		Professionalization	Modernization
(Public) service level: Mode of public service improvement	Exploitative mode	I: Continuous improvement, because of increasing cooperative relationships	III: Modular exploration, if balanced by encouraging cooperative relationships to create local capacity-building
	Exploratory mode	II: Architectural exploration, if balanced by encouraging entrepreneurial relationships to leverage and integrate organizational capacity-building	IV: Radical change, because of increasing entrepreneurial relationships

governments, specifically by emphasizing the independent effect of street-level agency as regards to an outcome state of accounting change. Moreover, identifying the corresponding effect of mutual adjustment in terms of supplementary cross-functional relationships (as outlined in the previous section according to Table 7) enables a more comprehensive description that specifies the relational archetype as a dimension of internal consistency, especially in order to further explain emerging outcome states of accounting change. Thus, each cell points to a specific type of alignment as indicated by conceptual considerations and the evidence (Doty and Glick, 1994; Miles and Huberman, 1994), at first hand, with regard to the complementarity of two-level accounting change interventions and, furthermore, the supplementary effect of constituting either cooperative or entrepreneurial relationships to leverage and integrate processes of knowledge accumulation. Overall, the alignment matrix emphasizes four settings further discussed below (see Table 8).

- I. Within the first setting, a prospective strategy values accounting capacity-building as an opportunity to improve public services continuously, both at the organizational level as well as at the street-level. Professionalizing public financial management then reinforces the knowledge stock by more centralized and standardized accounting procedures. The 'internal consultancy'-concept (case B) reported in this study exemplifies that a formalized order of implementation is likely to integrate the distributed personal-embodied knowledge and to increase cooperative relationships supporting exploitative learning. Governing accounting change in this way seems to be well-suited to street-level settings characterized by specialist accounting knowledge representing the expertise related to a particular public service domain.
- II. The second setting outlines that 'corporate' accounting change interventions are faced with street-level units delivering a more entrepreneurial mode of service improvement. Within this scenario, accounting change is likely to gain moderate benefits in changing managerial capacity and low benefits in improving public services because the common stock of accounting knowledge tends to be re-institutionalized. Risks of failure could be balanced when governing mechanisms of capacity-building support more flexible relationships that provide the opportunity to integrate the more generalist knowledge and the entrepreneurial behavior exhibited at street-level.
- III. The third setting characterizes strategy formation at organizational level to value capacity-building as an antecedent of modernization of public service delivery. Within this scenario, resource investments are devalued at street-level when service units pursue improvements continuously. In such a case, accounting change is likely to gain moderate benefits in improving managerial capacity, but fails at improving public services. Risks could be balanced when governing mechanisms control for the variety of knowledge distribution, especially when public service accountants possess specialist knowledge bound to their particular knowledge domain. Cross-functional coordination mechanisms – illustrated by the 'integrated' mentoring concept (case A) – may support such cooperative relationships needed for a more exploitative capacity-building at street-level.
- IV. Finally, when both strategy formation at the organizational level and integrated leadership at street-level value capacity-building as antecedent for public service improvement, accounting change is likely to increase entrepreneurial relationships to modernize the standard of public service delivery.

Overall, the study suggests that value creation occurs through 'corporate' governing mechanisms that constitute a relational context for knowledge acquisition and integration at street-level either in a supplementary or a complementary way. Given both the implementation and institutionalization stage of accounting change, usually covering several years of intervention activities, the processes of knowledge accumulation might also be institutionalized as either cooperative or more entrepreneurial relationships (see for example case A – reform history). Furthermore, they might influence the way people-embodied accounting knowledge is used for decision-making. This raises the legitimate question whether the tension between an outlined governing mechanism and contradictory effects evolves over time. This point is indicated by two cases (cases C and E) which relaunched their sequential order of accounting change because of their 'implementation failures'. Thus, one follow-up question concerns how the governing mechanisms, outlined during the implementation phase, are aligned with the (formal) structures of performance and accounting management to be 'taken for granted' later within the institutionalization phase, given the risk of contradictory effects.

Further research also has to address and compare how the initial 'set up' evolves or changes over time. One point of involvement may be selecting the initial setting of public services and the possibility of 'band-wagon' effects. Previous

research (Amis et al., 2004; Liguori, 2012) has argued that ‘high-impact systems’ create differences with regard to the sequences, pace and linearity of change. This study addresses such initial settings in local authorities whereas future research could explore the evolutionary process of relational archetypes as ‘hubs’ of gaining further benefits from accounting change. Future research might also uncover cumulative effects of starting at the ‘right side’. That means, either with mainly reinforcing processes of increasing cooperative or entrepreneurial relationships, or with a primarily ambiguous and contradictory situation associated with creating contextual ambidexterity. Given that building such relationships increases competition for resources in the short-term, there may be mutually reinforcing effects differentiating the long-term success.

7. Conclusion

The framework proposed in this paper reflects the process and sequential outcomes of accrual-based accounting change in local governments, as it takes into consideration the accounting logic shaped by processes of value creation at the street-level of public service delivery. The study argues that the investigation of ‘embedded agency’-effect due to the implementation of accrual- and output-based accounting systems provides some evidence of value creation effects. However, it depends on the ‘corporate’ patterns of accounting change and how they are related to the patterns of accounting capacity development at street-level. Thus, both conceptualizing ‘street level’ accounting change interventions as processes of knowledge accumulation and, correspondingly, ‘corporate’ accounting change as governing mechanism, either encouraging or restraining the mode of public service improvement, are helpful to identify why relational archetypes make a difference. Thus, a two-level lens of analysis is particularly relevant for theoretical refinement, strengthening a less distant explanation of value creation caused by accounting systems change. Otherwise research may overlook the intermediate effect of street-level agency within the logical chain of ‘corporate’ accounting change.

To sum up, this study makes a preliminary case for including the cross-level effects of accounting capacity-building in a framework of how public value creation occurs. In addition, the study contributes to the literature on value creation caused by changing accounting capacity in several ways. First, the present study emphasizes a more comprehensive framework of sequenced outcome-states of (accrual-based) accounting change, especially to map intermediate outcomes of street-level agency and their sequential influence on the organizational benefits of accounting change. Second, the analysis indicates that it is meaningful to work with an alignment-matrix to incorporate both the idiosyncratic state of accounting change and the heterogeneity of public service improvement at street-level. Third, this article differentiates convergent patterns of capacity-building and the characteristics of relational archetypes which, furthermore, could be useful to clarify path dependent effects of changing management capacity in the multiple domains of local authorities. Finally, this study has valued a resource- and capability-driven perspective to investigate accounting change in six German municipalities, in particular in order to introduce and refine the organizational benefits and outcome effects, especially with regard to a logic model of accrual-based accounting change.

The study has also to account for some limitations. One limitation is that the study is based on a research setting representing German local governments mainly within the implementation stage of accrual-based accounting change. It is clear that it would be useful to explore this issue with a more mixed sample of public service organizations and different accounting regimes, or to compare it with a different setting of strategic change. At the same time the results indicate, that it would also be beneficial to explore the effects of relational archetypes described as ‘hubs’ to gain further benefits from accounting change, considering the variety of public services in local authorities. Putting emphasis on this relationship remains the final step in a cascading process of modernizing local governments through accounting change given its radical impetus.

Appendix A. Conceptual basics of data analysis

Variable	Definition	Categories	Assessment criteria/operationalization
Outcome of 'corporate' accounting change (Boyne and Walker, 2004; Fernandez and Rainey, 2006; Lapsley et al., 2003; Liguori and Steccolini, 2012)	Categorizes dependent effects of accounting change and identifies the comprehensive pattern of 'corporate' change interventions.	• Strategic agenda	• External/internal constraints, assessed by financial pressure, size and reform history • Value of modernization/accounting change, assessed by the strategic stance and the (proposed) scope of (accrual-based) accounting change (prospective-radical/defensive, incremental)
	Proposed overall patterns: developmental, transitional, transformational, or failure. Proposed causal effect: the outcome-state of 'corporate' accounting interventions impacts on sequenced 'embedded' public services accounting change.	• Resource investments • Order of implementation	• Technological resources, assessed by the replacement of current accounting systems (evolution, substitution) • Organizational resources, assessed by the redesign of the current formal structure of accounting tasks and responsibilities (centralization, standardization) • Human resources, assessed by the purpose, content and cycle of HR development interventions (prospective, workforce development, long-term/reactive, recruiting or training, short-term) • Leadership role and internal support, assessed by the (formal) structure of project, division of tasks and responsibility, and political or upper-level support (formal, informal authorization) • Change sequencing, assessed by the multiplicity of change intervention and the implementation strategy (process control, outcome control, degree of institutionalization)
Outcome of public service change (Brodkin, 2008; Ferlie and Geraghty, 2005; Jackson, 2011; Lipsky, 2010; Moore, 2000)	Categorizes dependent effects of public service change and identifies patterns of change interventions.	• Governmental capabilities development	• Context of public service change, assessed by the influence of legal rules and/or political decisions, the role of professional goals/norms and autonomy in political management (more statutory, more voluntary) • Strategic discretion, assessed by the current standards of public service improvement and the prospects of continuous capability development (regulated or expansionary, evolutionary, total)
	Proposed overall patterns: regulated or strategy-based. Proposed antecedent effect: the outcome-state of public service change is influenced by 'agency' for public service accounting change.	• Acceptance of and commitment to accounting change	• Value of accrual-based accounting (interpretive scheme), assessed by interpretation of accrual-based accounting and the 'agency' for prospective results (entrepreneurial advocacy, stewardship) • Relevance of accounting capacity development, assessed by the purpose and previous interventions to replace accounting practices (generalist, specialist knowledge)
Mechanisms of public service accounting change (Kang and Snell, 2009; Turner and Makhija, 2006)	Categorizes the linking mechanisms between 'corporate' accounting change interventions and change in public service accounting capacity.	• Governance mechanism and knowledge integration	• Searching accounting knowledge, assessed by internal leadership and the content of knowledge acquisition (process control, delegation, localized, in-depth search/outcome control, mentoring, broad, generalized search) • Knowledge integration, assessed by the range of knowledge exchange and the complementarity of cross-functional cooperation (control or collaboration) • Complementarity of resource investments, assessed by technological, organizational, and HR development interventions on local accounting knowledge assets
	Exploration of comprehensive patterns (relational archetypes) of accounting knowledge accumulation.		

Appendix B. Differentiation in ‘corporate’ accounting change: assessing the state of comprehensive patterns of behavior

Category	Strategic agenda	Resource investments
Subcategory/ factors	Strategic stance, value of accounting change	Technological resources Organizational resources Human resource development
Evidence	<ul style="list-style-type: none"> Interviews, internal reports and published official documents 	<ul style="list-style-type: none"> Interviews, NKF-project proposals, internal reports, council orders minutes Interviews, NKF-project proposals, internal reports and documents Interviews, NKF-project proposals, internal reports and documents
Research measures	<ul style="list-style-type: none"> Stated purposes of accounting change (financial administration or public management and services reform; innovate or consolidate; linked degree of change in systems and structures) Chronology of reform efforts according to the ‘New Steering Model’^a (Comprehensive policy or program, initial date, continuity of change initiatives) 	<ul style="list-style-type: none"> Changing the recent state by <ul style="list-style-type: none"> Multiyear perspective on budgeting (current, forecast) Sufficient financial information (targeted groups; input-based, output/outcomes-based) Control over financial operation (control of expenditure, managerial flexibility) Scope of change initiatives (components and schedule covered by change activities) Replacement of current applications (cash-based/ business application) Procurement and associated resource dependencies (internal, external service center; low/high degree of influence; low/high support and training) Restructuring of managerial control and/or accounting information systems (centralization, decentralization) Rearrangement of standardization and formal coordination in financial work flows Assessment of workforce development (long-term strategy; degree of involvement into change initiatives/project management) Assessment of HR training efforts (short-term strategy; degree of integration into project planning or other change activities)
Outcome state of ‘Corporate accounting change’	<p>Designated as ‘<i>prospective</i>’ when the strategic agenda derived from managerial rather than financial management purposes, associated with either a continuous search for reform opportunities and/or a more radical scope of accounting change.</p> <p>Designated as ‘<i>defensive</i>’ when the strategic agenda derived from financial management purposes, associated with a more incremental scope of change in accounting systems and structures.</p> <p>Designated as ‘<i>failure</i>’ when changes in purpose, systems, or structures were rejected or not successful.</p>	<p>Designated as ‘<i>transformational</i>’ when change initiatives aimed to replace the current state of accounting systems (substitutional), associated with reorganizing the structure of managerial control (extensive) and a more long-term HR development.</p> <p>Designated as ‘<i>transitional</i>’ when change initiatives aimed to extend the current state of accounting systems (evolutionary), associated with reorganizing the structure of control and/or a short-term training program.</p> <p>Designated as ‘<i>developmental</i>’ when change initiatives aimed to extend the current state of accounting systems (evolutionary), but either reorganizing or a short-term training program were less successful or failed.</p>

^aAssessment based on stated dimensions of the ‘German’ model of public management reform, called the ‘New Steering Model – NSM’ (Kuhlmann et al., 2008; Reichard, 2003).

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