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# Sustaining extended enterprise performance: a value co-creation perspective



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## Abstract

The Extended Enterprise, an advanced form of supply-chain integration, focusses on maximizing overall performance while also optimizing the performance of the stand-alone organizations involved. This necessitates not only inter-organizational collaboration but also inter-organizational performance measures. However, the continued use of and emphasis on, intra-organizational performance measures impedes collaborative efforts that transcend organizational boundaries and interests. We argue that an Extended Enterprise can only emerge and sustain through the development of a Service Logic perspective on value co-creation. Value co-creation encourages the establishment of performance measures for the evolving collaboration by taking into account the changing value-in-use of the products and services provided by all the firms involved. Our theoretical argument sheds new light on the formation of inter-organizational collaborations and addresses the role of organization design in this process.

**Keywords:** Extended enterprise, Service logic, Value co-creation, Sense-making, Formalization, Meaning-giving, Co-created flexible performance measures

Since the 1980s, various forms of collaboration have been witnessed between organizations in response to changing socioeconomic, technological, political and ecological environments. These “meta-organizations comprise networks of firms or individuals not bound by authority based on employment relationships, but characterized by a system-level goal” (Gulati et al. 2012, p.573). An example of such an organization is the Extended Enterprise, a concept derived from automotive and civil aerospace supply chains to improve performance by tightening their dispersed activities through improved inter-organizational relationships (Bititci et al. 2012; Jordan and Lowe 2004; O'Neill and Sackett 1994).

The Extended Enterprise (EE) can be seen as an advanced form of supply chain integration in which, based on common goals and standards-of-meaning, a focal firm connects the relevant business-unit processes of its suppliers with its own business-unit processes to maximize the value of the supply chain's output for its customer (Bititci et al. 2005; Davis and O'Sullivan 1999; Estampe et al. 2013; O'Neill and Sackett 1994; Post et al. 2002). Whether a product or service is valuable to this customer then becomes contingent on the collective performance of the EE, that is on the coordination of the flows and exchange of resources and information across the organizational boundaries and the collective behaviour of the organizations involved (Kamauff et al. 2004).

In practice, ensuring the collective performance of EEs remains a challenge due to the strong pull that firms have on their employees through the employment relationship. Scholars approach this performance challenge from either an ‘organizing process’ or a ‘structural entity’ perspective. Those treating EE performance as an organizing process analyse the relationship between EE members and factors that contribute to EE performance such as inter-organizational learning and improvements (Alguezaui and Filieri 2014; Barratt 2004; Braziotis and Tannock 2011; Filieri and Alguezaui 2012). Those taking a ‘structural entity’ perspective focus on controlling the inter-organizational relationship by synchronizing intra-organizational performance measures into EE-measures and adding additional measures when needed; or by establishing and interrelating EE specific measures (Bititci et al. 2005; Folan and Browne 2005; Kamauff et al. 2004; Magoulas et al. 2012).

However, neither perspective addresses the underlying firm-centric logic upon which organization design, and therefore the present performance management and measurement systems and the employment-relationship pull, is based (Gulati et al. 2012). An omission that Lehtinen and Ahola (2010) alluded to when comparing the central principles used in well-cited performance measurement articles and in EE articles. They found that the use of intra-organizational performance measures conflicts with the need for inter-organizational collaboration and therefore proposed: incorporating the customer in the EE; using unified measures to align the different firms’ goals within the EE; reformulating the hierarchical role and control of managers in EEs. As such, indicating the need to develop and provide a “guiding economic logic for collective action, while allowing appropriate flexibility for this logic to be realized” (Gulati et al. 2012, p.581).

In this paper, we propose using insights from the marketing literature on the Service Logic (Grönroos 2006, 2008; Vargo and Lusch 2004) to develop a guiding logic for collective action in EEs. The usefulness of the Service Logic perspective lies in the inherent role of supplying organizations as facilitators of, and potential co-creators in, the customer’s value creation process. In the Service Logic, value is not only created by the presence of service and product attributes for which a customer is willing to pay but also “arises in the customer’s space and through the customer’s using process” (Macdonald et al. 2011, p. 672). This concept of ‘value-in-use’ (Vargo and Lusch 2004) emphasizes a value co-creating interaction between suppliers and customers that starts with the customer’s value creation (Grönroos and Voima 2013) and encourages innovation towards sustainable resource use.

Before elaborating on the Service Logic, we will introduce the process perspective on the EE and discuss the need for, and effect of, collaboration on EE performance. In the subsequent section, the EE is approached from the structural entity perspective and the incompatibility of the underlying firm-centric logic with meeting the performance management and measurement needs of EEs is explained. After having introduced the Service Logic, we will discuss the usefulness of its value co-creation principle for integrating the process and structural perspective on EEs and the possible implications for organization design research and practice. Finally, we will address some implications and avenues for further research in our conclusion.

### **The extended enterprise: a collaborative learning and improvement effort**

An Extended Enterprise (EE) aims to maximize its overall performance and optimize the performance of the firms involved (Bititci et al. 2005). It goes beyond dyadic

supplier-customer collaboration and involves other business units (BUs), that together with the BUs of the focal firm, deliver a joint product or service to the EE's customer(s) (Barratt 2004; Post et al. 2002).

EEs involve interrelated BUs, or sub-BUs, that belong to different firms. A firm, through its various BUs, might participate in several EEs. Similarly, one BU might participate in several EEs through its sub-BUs. EEs therefore emerge on the interrelated operational BU and/or sub-BU level, while the firms and/or BUs they are part of form a meta-EE (Bititci et al. 2005).

Enablers to maximize an EE's overall performance include the establishment of a common goal and strategy; the setting up of contractual agreements for risk and revenue sharing; determining the interrelationship among firm and BU production plans and processes; sharing knowledge; resolving conflicts and mitigating opportunistic firm-centric behaviour (Barratt 2004; Braziotis and Tannock 2011; Sutton 2006). EEs require active sharing of knowledge, skills and practices among the individual representatives of the firms and BUs involved, leading to a shared meaning about what is said and done to improve the joint practice (Fileri and Alguezaui 2012; O'Neill and Sackett 1994). Without doubt, developing and sustaining the overall performance of an EE is based on, and evolves from, a continuous collaborative learning and improvement process within and among the multi-organizational teams forming the EE.

Establishing a shared meaning in an EE depends on achieving coherence between the knowledge domains, skills and practices of the BUs. Where such coherence is missing, transferring knowledge, skills and practices is difficult, requiring their translation or even transformation (Carlile 2002, 2004) to fit the EE's performance needs.

Once the risk and revenue sharing issues are settled contractually, the transfer and translation of the management knowledge, skills and practices required to establish an integrated performance-management practice at meta-EE level is usually straightforward because of the comparable experiences and management training of its team-members. In contrast, the knowledge domains, skills and practices within EE teams, and among these teams and the management team of the meta-EE, can differ considerably. This is due to the tendency of a firm's management to maximize the separation of workflows, i.e. sub-processes, of their BUs and sub-BUs for efficiency and effectiveness reasons.

However to maximize the overall performance of an EE, these independent workflows need to be integrated into an operational process. Integrating specialized BUs into an EE brings to the fore their different knowledge domains, skills and practices, which need to be translated. In response, EE members, individually and jointly, need to focus on and make sense of the emerging possibilities this translation brings, rather than cling to their known firm and BU situations.

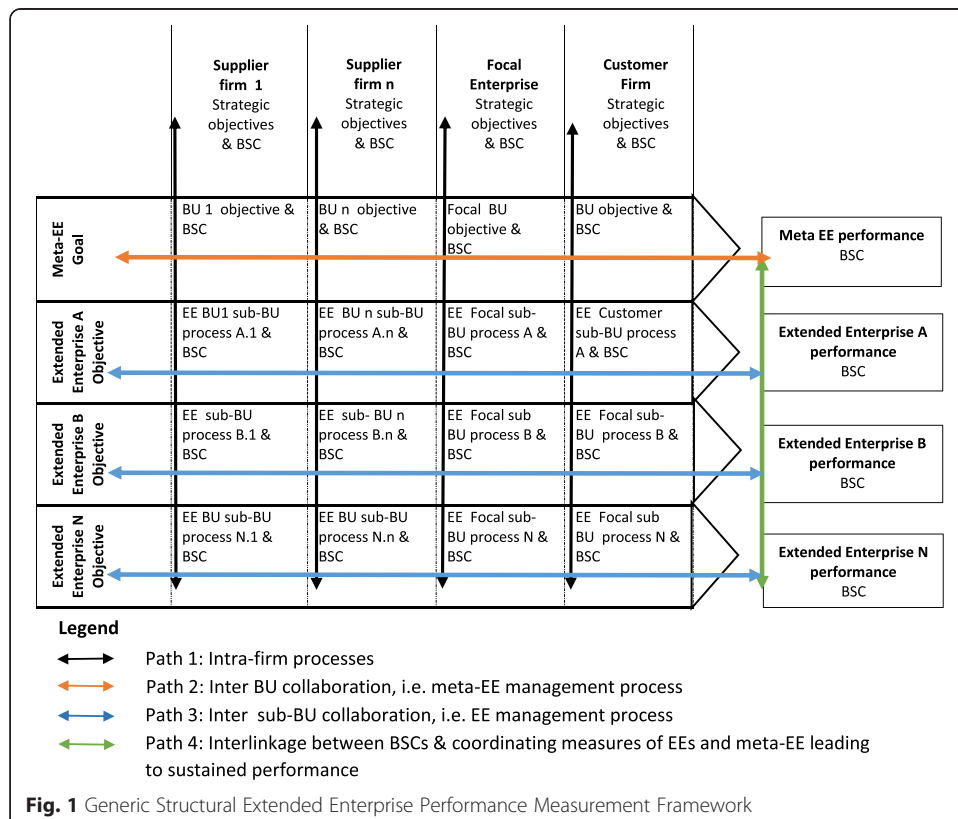
This sense-making process (Weick et al. 2005) will depend heavily on the socio-emotional skills of the EE's team members (Braziotis and Tannock 2011; Nielsen et al. 2008; Nix and Zacharia 2014). Such skills include being receptive to the knowledge and skills of others, being able to share one's own knowledge and skills, to express and manage emotions, to address and manage power, to build relationships and trust, and an open attitude towards change, which may lead to 'co-sensing' (Scharmer 2009). Formalizing this sense-making and co-sensing (Vlaar et al. 2006), for example in a meta-EE's strategy document or a contractual labour relationship between an EE member and their own firm, gives meaning to the change-process needed to implement and

develop co-created knowledge, skills and practices for EE management and operation (Gioia and Chittipeddi 1991). When performance measures, another form of formalised tool, are developed by the EE, they can capture the results of this meaning-giving process, which in turn can lead to learning and therefore contribute to EE improvements. This, however, has consequences for the performance measurement systems used.

**The extended enterprise: a performance measurement challenge**

Various scholars used the multi perspective principle of the Balanced Score Card (BSCs) (Kaplan and Norton 1992) for the challenging task of interrelating and deploying performance measures in Extended Enterprises. The extended enterprise performance measurement model (the EEPMM) (Bititci et al. 2005) and the inter-enterprise collaborative performance model (Verdecho et al. 2012) use the internal, financial, customer and innovation and learning perspectives of the original BSC. Folan and Browne (2005) question this automatic use of the original BSC and propose the use of EE-BSCs, which include an internal, supplier, customer and EE perspective for their EE Performance Measurement System. For the development of these BSCs, whether original or adapted, collaboration is conditional. Since the functional level of both the standalone firms and the inter-organizational setting has to harmonize to assure equity among the firms and BUs that participate in the EE (Verdecho et al. 2012).

Our generic structural framework in Fig. 1, which is adapted from the EEPMM, reveals the harmonizing performance management and measurement challenge EEs face. The first step in this framework therefore adopts an intra-organizational perspective from which the various organizations establish BSCs for their own strategic and BU



objectives and processes. The firm-centric BSCs of an EE's interdependent BUs are consolidated with the EE's own objective and BSCs (step 2). In the EEPMM the latter are called meta level BSCs, we therefore refer to this level as the meta-EE. Subsequently these consolidated meta objectives and BSCs are deployed to the operational sub-BUs (step 3). It is at this level where the EEs emerge, because they are constituted on the operational level through the day-to-day practices of people working in multi-organizational teams (O'Neill and Sackett 1994); while being guided by a closely integrated management process on the meta-EE level to secure the support of the firms from which they originate (step 4).

However the reasons for using BSCs are missing. BSCs started as a strategic performance measurement system for balancing the dominant perspective on financial performance (Kaplan and Norton 1992). They evolved into a performance management system linking performance targets to action plans and managerial incentives (Lueg and E'Silva 2013). The original BSC perspectives also became more flexible to fit intra- and inter-organizational situations as reflected in the 'EE Balanced Score Card' (Folan and Browne 2005). Despite these changes, the Key Performance Indicators (KPIs) and targets used in these multi-perspective scorecards remained firm-centric measures, such as of customer satisfaction, costs, profit and lead-time. The reliance on these so-called intrinsic measures could be why the EEPMM adds coordination measures and calls for extrinsic measures: measures that are purposefully designed to fit the inter-organizational relationship challenges of EEs referred to in the previous section.

Elaborating on the relation with the previous section sustaining the performance of an EE relies on a meaning-giving process, which is based on the iterative formalization of the translated and transformed knowledge, skills and practices of its multi-organizational team-members; that in turn is based on sense-making and co-sensing. Performance measures developed by the EE to capture the results of this meaning-giving process can be a useful tool in providing insights into the effectiveness and efficiency of this collaborative learning and improvement process. As such, these extrinsic measures can be used to legitimize, to the firm to whom they belong, the involvement of an employee, or BU, in an EE. Consequently, within the performance framework of the meta-EE, the multi-organizational teams responsible should design the contributing extrinsic measures. They should also decide on the use of and targets for intrinsic performance measures deployed by their firms to mitigate the effects of firm-centric reasoning on the collaboration.

However this legitimization effort towards their own firms is, in itself, insufficient to counter the established authority based on labour contracts. Despite the improved performance of an EE, it will continue to be threatened by firm-centric reasoning if, for example, key team-members can be withdrawn and BUs can be given opportunistic directives. As such, an underlying logic for moving the focus from the firm to the EE is still lacking (Bititci et al. 2012) for which we suggest the Service Logic.

### **The service logic; the rationale for sustained extended enterprise performance**

Since Adam Smith's *Wealth of Nations* in 1776, value has increasingly become synonymous with the exchange of the embedded value of a supplier's product or service for a customer's money. The growing importance of exchange value has increasingly led to a focus on one's own firm, without necessarily taking customers and society into account. Vargo and Lusch

(2004) label this firm-centric logic as the Goods-Dominant Logic (G-D logic). A consequence of this logic is that the allegiance of a firm's representatives taking part in an inter-organizational collaboration is with their own firm. This G-D logic also underlies the practice of designing organizations and developing performance measurement systems.

The Service-Dominant Logic (S-D logic) (Vargo and Lusch 2004, 2008) offers a different economic logic that potentially redirects the focus from the single firm, as the producer of exchange value, to the supply chain network as the arena where value-in-use is created (Vargo and Lusch 2014). However, to date, research using the S-D logic has focussed on dyadic supplier-customer relationships.

According to the S-D logic, value is experienced and created when products and services are used, and so the customer becomes the value creator. Consequently, all products or services should be valuable 'in use' (Ng et al. 2010). From this perspective, tangible products act as distribution mechanisms for services, implying that suppliers are really service providers (Prahalad and Ramaswamy 2004; Sandström et al. 2008). Grönroos (2008) therefore argued against using the word dominant and instead to use the term Service Logic, since: *"Adopting a service-centred perspective is not a matter of adding weight to the service aspect of a logic in order to become service-dominant. Rather, it is a new logic in itself"* (ibid, p.300). The danger of merely adding weight to the service aspect of the S-D logic is that the firm-centric reasoning continues with claims that customers need to be sensitized to make better use of offered services (Payne et al. 2007) and that one should address value co-creation from the supplier perspective (Karpen et al. 2015).

Addressing value from the Service Logic perspective goes beyond suppliers paying attention to customers. Rather, the customer's value creation practices are the starting point, to which the supplier's service delivery is tailored. The customer as the value-creator implies that suppliers are providers of potential value, and therefore need to understand the customer's value creation practices. Hence, direct interaction with the customer is vital (Ng et al. 2012; Payne et al. 2007) and may particularly lead to value co-creation when the interaction is initiated by the customer (Prahalad and Ramaswamy 2004). Grönroos and Voima (2013) argue that value co-creation should preferably take place in the joint sphere where the knowledge, skills and value-creation practices of the customer directly interact with the knowledge, skills and value-facilitation practices of the service supplier. As such, value co-creation is based on the mutual exchange and translation of knowledge, skills and practices and concerns the transformation towards emerging value-creating possibilities in a dyadic customer-supplier setting.

With its understanding that the customer is the value-creator, the Service Logic perspective presents an underlying rationale for measuring and managing the performance of EEs. The G-D logic, which supports a firm's authority to unilaterally revise or renege on mandates given to employees or BUs participating in EEs, is redirected towards a value co-creation reasoning that provides an economic logic for acting collectively based on the customer's value creation. Simultaneously, the iterative formalization of this collective transformation process provides the flexibility needed to realize a Service Logic.

### **The extended enterprise from a value co-creation perspective**

To the best of our knowledge, applying the Service Logic's value co-creation concept in an EE setting is new and, to date, it has only been applied to the dyadic supplier-customer relationship and to networks thereof (Lusch and Nambisan 2015).



However, viewing an EE as a network of dyadic supplier-customer relationships is questionable since, in a dyadic supplier-customer relationship, value co-creation strengthens the bond within the pair. It is likely that such strong dyadic bonds, within an EE network, will increase the gaps in knowledge, skills and practices between the various pairings, thereby reducing the co-created value of the EE (Lehtinen and Ahola 2010).

Value co-creation in an EE not only concerns the transformation of the knowledge, skills and practices among its BUs, it also supports the change from the firm-centric GD-logic into the Service Logic. The latter demands both a change in the firm-centric reasoning, attitudes and behaviour on the individual level, and in the firm-centric performance management and measurement systems on the firm and BU levels that guide and steer these individuals.

Emerging empirical findings indicate that the transformation towards the Service Logic is stimulated by socio-emotional skills that support the understanding between, the relation with and the inclusion and competences of the involved BUs and their firms (Karpen et al. 2012, 2015; Nix and Zacharia 2014). These socio-emotional skills encourage the sharing of knowledge, skills and practices and positively contribute to the value co-creation of the EE and the value creation of the participating firms. Further, value co-creation leads to new tacit knowledge, skills and practices that become part of the BUs and their firms, and strengthen their competitive positions. This contradicts the firm-centric view that encourages contractual and legislative protection of knowledge and skills for competitive and risk-management reasons (Cullen 2000).

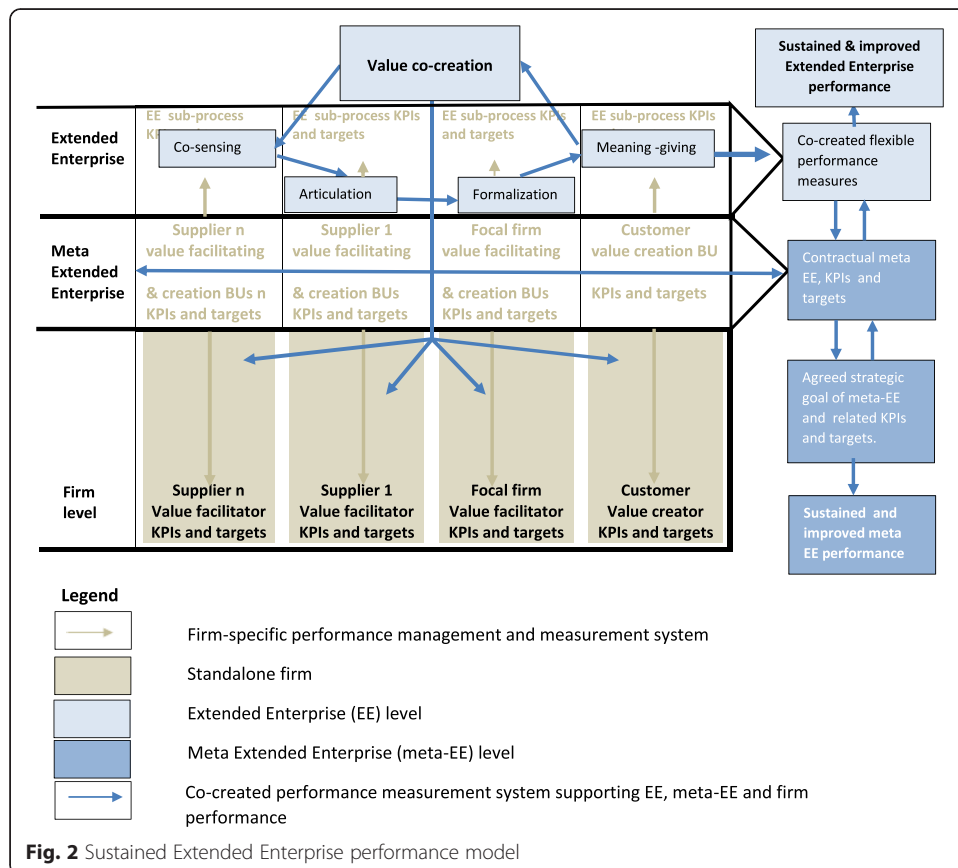
Sustaining and improving the performance of an EE is an iterative reciprocal sense-making, or co-sensing, process that, when articulated and formalized, gives meaning to activities that improve the integration of knowledge, skills and practices. For this meaning-giving process, performance measures can be useful. We would argue that strategic firm-centric and meta-EE performance measures, and the combination of these intrinsic measures with co-ordination measures as suggested by the EEPMM, are inappropriate. This is because these measures put the focus on the transfer and control of established knowledge, skills and practices, which downplays the use of socio-emotional skills needed for innovation and value co-creating collaboration. This concern has been stressed since the 1970s and led to the introduction of relational mechanisms in combination with firm-centric theories such as transaction-cost economics (Paulin and Ferguson 2010). Nevertheless, the underlying firm-centric G-D logic remains rarely addressed.

Performance measures for the value co-creation process of an EE need to be developed by the multi-organizational teams involved, and derived from their emerging inter-operational reality. They also have to be flexible to take into account the changing context and the constellation of these teams, and the change process from a collaboration-inhibiting firm-centric view to a collaboration-supporting service logic. That is, developing and sustaining an EE requires co-created flexible performance measures that bridge the conflict between intra-organizational performance measures and collaboration by supporting the inter-operational collaboration needed in EEs. For example, sense-making in an EE may reveal that conflicts of interest arise when firms use their intrinsic performance measures to actively control their BUs in order to satisfy their own and shareholders' demands, and that this leads to value-reduction in the EE. In response, the EE could develop performance measures that highlight such actions and relate them to value reduction, such as the number of EE conflicts induced by

intrinsic firm-centric performance measures, and the time involved in resolving them, and the effect this has on the customer’s value creation.

However using co-created flexible performance measures as a formalized means is only possible when we change the design of the presently known performance management and measurement systems for EEs too. As we have visualized in Fig. 2 sustaining EE performance is based on having an open modular architecture in the firms involved, and the horizontal integration of these modules (BUs) (Mathews 2012) in the EE. In the existing performance management and measurement situation, a structure that allows the flexibility to establish such a closed integral system has to be provided by the strategic goal and related contractual agreements of the firms involved. Simultaneously, regulations are required to prevent firm managers renegeing on their delegated responsibility (Stea et al. 2015). In turn, firm managers and meta-EE representatives have to provide a service (Lusch et al. 2010) to EEs, for example through facilitating the process of articulating the co-sensing process between BUs, or changing the contractual agreements between firms when they no longer sustain the EE’s value co-creation. Further, they can enable the acquisition of additional knowledge and skills through education and recruitment.

To sustain the performance of an EE, its BUs engage in a sense-making and co-sensing process whose subsequent articulation and formalization support the meaning-giving process of value co-creating changes. Co-created flexible performance measures indirectly support this learning and improvement process and the strategic goals of the meta-EE and the firms involved.



**Fig. 2** Sustained Extended Enterprise performance model



### Conclusions, implications and avenues for further research

The present phenomenon of employing relationship-supporting mechanisms to address the impeding effect of firm-centric performance management and measurement systems on collaboration in an EE is necessary because the Goods-Dominant Logic principle, that value is embedded in products and services and the exchange thereof, is applied. We have argued that changing this to the Service Logic principle, where the value is in *the use of* the service or good, reduces this need because it enables a focus on value co-creation, that then supports the collaboration between and appropriate performance by the involved parties and, most importantly, sustains the overall performance of the EE. The development of a performance measurement system that supports the translation and transformation of the inter-organizational knowledge, skills and practices, through co-created flexible performance measures, can support both value co-creation and a move towards the Service Logic.

We would encourage those researching inter-organizational collaboration, supply-chains and performance management and measurement to adopt the value co-creation perspective of the Service Logic to confirm its validity as an appropriate economic logic for addressing EEs and other forms of meta-organizations. However, in line with Ng et al. (2013), we realize this might be challenging because *traditional disciplinary boundaries of operations, management, marketing and strategy... and ...the discussion of linear or sequential joint-supply chains...* (Ibid, p. 471 refers to Ng et al.) that are supported by current mainstream organizational design practice would lose their relevance.

We look forward to research that offers practical insights into how value can be co-created, but also reduced if one is not careful, in EEs and into the development and use of co-created flexible performance measures. A challenge here is that this will require both longitudinal qualitative and action research in multi-organizational settings, and these are difficult to come by. Those who succeed will contribute to further broadening and changing the scope of organization design science and practice for meta-organizations.

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#### Authors' contributions

All authors read and approved the final manuscript.

#### Competing interests

The authors declare that they have no competing interests.

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