ENTERPRISE SOCIAL MEDIA MODERATION AND USER GENERATED CONTENT QUALITY: A CRITICAL DISCUSSION AND NEW INSIGHTS

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ENTERPRISE SOCIAL MEDIA MODERATION AND USER-GENERATED CONTENT QUALITY: A CRITICAL DISCUSSION AND NEW INSIGHTS

Research paper

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Abstract

Social network platforms in enterprises are an increasingly important phenomenon. Thus, the participation and content generation of users are critical aspects of the sustainable use of these enterprise social media (ESM) services. However, at the same time, organizations need to ensure the quality of user-generated content (UGC), which remains a challenge for ESM moderation. In this structured literature review, we investigate measures to identify high-quality UGC and organizational approaches to promote such UGC. We categorize our findings as textual-, content appraisal, network- and author-based measures. We follow up by assigning each measure to a motivation and localization approach. We reflect on opportunities to transfer public social media measures into an ESM environment. We conclude our examination of UGC quality by integrating the UGC quality dimension into an ESM moderation framework and by outlining implications for research and practice.

Keywords: enterprise social media, user-generated content, content quality, moderation, public social media.
1 Introduction

Enterprise social media (ESM) is an evolving field of information systems (IS) research. ESM services are divided into intraorganizational deployments restricted to an employee’s audience or to the use of social media for interaction with external parties (Richter et al., 2011). In this research article, we focus on intraorganizational ESM services, as these fundamentally challenge organizational settings (Behrendt et al., 2015; Treem and Leonardi, 2012). Organizations are investing in intraorganizational ESM services to facilitate better organizational collaboration and knowledge-sharing environments (von Krogh, 2012). ESM services are based on social media technologies – e.g., microblogs, blogs, social networking sites, wikis, and communities (Treem and Leonardi, 2012) – that allow organizational users to maintain profile pages, build and explore networks or share and consume user-generated content (UGC) (Boyd and Ellison, 2007). The central concept behind intraorganizational ESM deployment is to enable employee-driven communication, collaboration, innovation, and knowledge sharing through the open display of the UGC (Leonardi et al., 2013). Here, the unrestricted visibility of UGC plays a crucial role for organizations. This unrestricted visibility can be beneficial and useful in bridging gaps between employee knowledge silos and making hidden organizational knowledge economies visible (Gray et al., 2011; Riemer et al., 2015). It is therefore essential that ESM services are used by a wide range of users (functional or structural) to expose employees to a broad scope of UGC (Chin et al., 2015; Cummings, 2004). However, exposing employees to UGC bears the risk of spreading false information or poor quality content within the organization (Fulk and Yuan, 2013). Due to the uncontrolled nature of ESM, the shared UGC may not achieve the level of quality required to be considered beneficial (Beck et al., 2014).

With regard to the intraorganizational ESM context, the current body of knowledge is driven by the discussion of critical success factors influencing employees’ motivation to engage with or reject such platforms (Chin et al., 2015; Mettler and Winter, 2016; Trier et al., 2017) or how such tools act as substitutes for traditional communication, collaboration, and knowledge-sharing practices (Leonardi et al., 2013; Schöndienst et al., 2011). In recent years, the impact of ESM usage on employee performance and knowledge management skills has received more attention (Aboelmaged, 2018; Cetto et al., 2018; Kuegler et al., 2015). The organizational perspective on these collaboration technologies is an intriguing research field that demands more attention (Högberg, 2018; Wehner et al., 2017). In this respect, there has been little research on the organizational moderation of ESM information channels, even though these technologies challenge or even contrast with current organizational structures (Karoui et al., 2015; Nolte et al., 2017). The quality of user-generated ESM content is considered to be a crucial factor for ESM usage, acceptance, and the legitimation of information by users. However, little is known about how organizations can ensure quality in this medium (Beck et al., 2014; Chin et al., 2015; Fulk and Yuan, 2013). Unfortunately, this interesting research topic is mentioned only marginally within the current ESM research discourse, and without the focus it deserves. Examining UGC quality assurance mechanisms will help organizations achieve the desired benefits, and the combination of the UGC quality dimension with moderation approaches will enable better decision-making on ESM interventions. As prior research has mainly focused on the user or technical perspective (Wehner et al., 2017), we want to theoretically contribute to the research discussion from an organizational perspective with the following research question:

“How can organizations moderate UGC quality in ESM?”

In the first section, we provide the theoretical background of the study. Then, the research design and methodology are described. After presenting the analysis procedure, we report the results and findings. Through a systematic literature review, we derive implications on how organizations can influence UGC quality in organizational ESM services. After a brief discussion, we extend an ESM moderation framework and give implications for research and practice. We conclude by pointing out limitations and offering an outlook for future research.
2 Theoretical Foundation

2.1 UGC Quality in ESM

Quality is an entity-centric concept that describes a relational meaning of a particular desired need and its reconciliation of an actual experienced function with specific quality dimensions of the entity (Tilly et al., 2017). The more a target level and an actual level align with all quality dimension metrics, the higher the perceived quality level. Over decades, data and information quality (DIQ) research has developed a profound understanding of traditional specific user-group-driven IS (Lee et al., 2002; Madnick et al., 2009), leading to the incorporation of the DIQ construct into IS success research (DeLone and McLean, 1992, 2003; Venkatesh et al., 2016). In human information behavior research, the focus is on individual behavior rather than on collective information behavior of collaborative IS (Hansen and Järvelin, 2005), which calls into question the applicability of the conceptualization of data and information quality for social software (Tilly et al., 2017). Generally, data are stated facts from which information can be derived. When information is put into context and given meaning by a recipient, it is personalized and processed into knowledge in the consciousness of an individual (Boisot and Canals, 2004; English, 1999). When we speak of ESM, we define a social IS that encourages users to produce and consume UGC in collective collaboration processes (von Krogh, 2012; Leonard et al., 2013). Therefore, UGC is personalized knowledge expressed by displaying information in ESM services. With the sociability property of ESM and its induced reciprocity of data and information exchange, the role of users changes from just ‘content consumers’ with clear quality assumptions to ‘content producers’, who are opposed to others’ UGC quality assumptions. The reciprocity of a heterogeneous ESM audience defines a rather dynamic understanding of UGC quality, as the content is interpreted at unknown times, in unknown context situations, and by an unknown audience (Tilly et al., 2017). Therefore, the quality of UGC can be better captured as a match between content demand and supply among multiple users in their dual role and is further characterized by uncertainty.

2.2 UGC Quality – The Contradictory Critical Success Factors in ESM

Several intraorganizational ESM research studies (e.g., Chin et al., 2015; Kugler et al., 2013) have developed a multitude of critical success factors (CSF) (or barriers) for successful ESM implementation. Those CSF are grouped into technological (e.g., ESM properties fit to the workplace), social (e.g., reciprocity, critical mass, quality of content), organizational (e.g., facilitating conditions such as policies, top management support, uncertainty management), and individual (e.g., time availability, personality traits, privacy concerns) dimensions (Chin et al., 2015; Högborg, 2018; Kugler et al., 2013; Trier et al., 2017). The comparison of CSF reveals contradictions. Looking at the social dimension, critical mass, which is relevant to sustaining ESM services alongside other organizational information and communication technology (Chin et al., 2015; Denyer et al., 2011; Harden, 2012; Herzog et al., 2015; Jackson et al., 2007), demands reciprocity in interactions with UGC by a broad variety of organizational users. In addition to critical mass, the quality of ESM content is considered a major asset of an ESM service. In the public social media business model, content quality attracts and retains users for the creation and consumption of UGC (Liu and Feng, 2015; Zeng and Wei, 2013). The concept of maintaining user attention also applies to ESM as UGC gains organizational relevance through repeated ESM use that reflects the quality of UGC (Annabi et al., 2012; Huang et al., 2010; Mansour et al., 2011; Turban et al., 2011). The growing volume of UGC also leads to irrelevant information or an overload of information that conflicts with the perceived quality of UGC and its use (Chin et al., 2015; Giermindl et al., 2017; Osch et al., 2015). Content quality controls can serve as countermeasures that form a barrier to content creators and hinder the achievement of the desired critical mass (Annabi et al., 2012; Huang et al., 2010; Mansour et al., 2011; Nolte et al., 2017; Turban et al., 2011). Additional issues about the level of content quality originate from an open communication culture. An organizational culture that promotes high permissiveness leads to a certain failure tolerance, which reduces the accountability barrier for UGC providers (Treem, 2014). If incorrect information is recorded alongside valid information, users must be sufficiently competent to select the right source...
(Richter et al., 2016), and the credibility of an ESM service may be compromised by false information (Chin et al., 2015; Strong et al., 1997; Wagner, 2004). UGC content quality is an ambiguous but essential CSF for an ESM service that requires the establishment of quality assurance that fits the ESM context.

### 2.3 A First ESM Moderation Concept and its Missing UGC Quality Dimension

In an organizational setting, the use of ESM services can be mandatory, encouraged or voluntarily organized (Ellison et al., 2015). Several ESM studies have articulated approaches that organizations can use to moderate ESM interactions to achieve the intended use. A classification of the moderation approaches mentioned in the literature was developed by Nolte et al. (2017), whose study ultimately provides a two-dimensional perspective on ESM moderation, reflecting on the degree of organizational interference and the impact of these interferences on UGC encouragement. The first dimension of the proposed moderation frame originates in an adverse understanding of organizations to either supervise or let the employee crowd self-organize ESM, including UGC creation. The topics were grouped by the degree of organizational engagement, forming two diametric approaches, 'corporate supervision' and 'employee self-organization'. The high organizational engagement approach of 'corporate supervision' “tries to overcome the unstructured nature of social technology in a corporate context with strict policing, content monitoring and compliance characteristics” (Nolte et al., 2017, p. 8). The low corporate engagement approach of ‘employee self-organization’ leverages the “transparency induced” (Nolte et al., 2017, p. 8) accountability of ESM services to self-regulate the exchange process. A third approach synthesized from the literature - characterized by the ability of context-dependent ambidexterity in organizational moderation - was labeled the ‘corporate guidance’ approach. The corporate guidance approach relies on user education about ESM “properties and possibilities to change the current work practices” (Nolte et al., 2017, p. 8). After establishing the three approaches, the authors critically discussed the outcome of deploying each approach and added the dimension of UGC encouragement to their assessment. By discussing the CSFs of ESM services, the authors ranked ‘corporate guidance’ highest and ‘corporate supervision’ lowest regarding UGC encouragement. The main argument for their ranking was provided by the cultural-technical fit of ESM to the approaches, where the ‘corporate supervision’ approach is deemed to conflict most with the properties of openness and transparency, thus hindering UGC contributions. The ‘corporate guidance’ approach, on the other hand, could provide the best fit or compromise in a hierarchically defined organizational context. Despite the limitation of the dependencies of ESM maturity phases and national cultural influences on the framework, UGC quality was not adequately addressed in the developed two-dimensional framework. As identified in the paragraph above, UGC quality is a CSF for organizational ESM service sustainability. UGC quality was partly addressed in the corporate supervision approach with organizational quality controls but failed to leverage the quality assurance perspective for this or the other two approaches. The other two approaches indirectly addressed the topic with the stewardship phenomenon. Content controls demand active corporate supervision, and the stewardship phenomenon counts on a collective understanding of ESM users to voluntary execute bottom-up control functions (e.g., such as wiki-gardeners) (Huang et al., 2015). The importance of UGC quality from an organizational perspective has been neglected and has not received the attention and reflection required to make a profound assessment of quality assurance approaches. Consequently, organizations need to know how to moderate UGC quality in an ESM to increase the satisfaction of ESM users with the UGC, leading us to the research question of this article.

### 3 Methodology

To address the research question, we performed a rigorous and structured literature review to identify, analyze, and conceptualize the relevant research literature (Webster and Watson, 2002). According to (Gaß et al., 2015) we outlined a four-phase process for this research paper: (1) problem formulation
and database collection, (2) initial screening, (3) clustering and (4) in-depth evaluation, analysis and presentation of the data to synthesize and extend the current body of knowledge. Describing these steps enables us to avoid possible pitfalls associated with each step of this literature review (von Krogh et al., 2012). The initial phase (1) entails the examination of authoritative sources to specify and formulate the problem, taking the proposed focus and scope into account (Madnick et al., 2009). To create an appropriate pool of research papers, Webster & Watson (2002) argue that researchers should employ a high-quality selection of papers. Due to the very young research field, we expand our literature database from mainly top-ranked IS publications (Lowry et al., 2004) to other journals and conferences that are not highly rated. For this reason, we performed a full database search in the databases mentioned below. This decision was made to include novel and innovative ideas, often presented at conferences, which establish starting points for discussions (Te’eni et al., 2015) or in lower-ranked journals (Loebbecke and Leidner, 2012). Only a partial restriction on research areas (e.g., computer science) has been made while using the selected databases. For example, research areas such as medicine were excluded. To ensure reliability, which refers to the replicability of the search process (Brocke et al., 2009), the literature search process was comprehensively documented. Validity is based on the selected databases, covered period, keywords used and the application of a forward and backward search (Brocke et al., 2009). To meet the requirement for validity, we searched different databases: ACM, AISeL, arXiv, IEEEExplore, JSTOR, SAGEpub, SemanticScholar, Science Direct (Elsevier), SpringerLink, Wiley, Emerald, InformsOnline, and Taylor & Francis. To account for different abstraction levels occurring in the literature, we used different search terms in word pairs as well as corresponding combinations and synonyms (e.g., query 1 “user generated content” “quality” “enterprise social media”; query 2: “user generated content” “quality” (“enterprise social” AND (“network” OR “media” OR “networks”)) query 3: “user generated content” “quality” (“public social” AND (“network” OR “media” OR “networks”). The number of hits achieved is shown in Table 1. From there, a forward and backward search was conducted. Both searches were performed manually.

<table>
<thead>
<tr>
<th>Database</th>
<th>Field and Access*</th>
<th>Document Type</th>
<th>Search terms</th>
</tr>
</thead>
<tbody>
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<td>Journal, Conference</td>
<td>Query1 2 1</td>
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<tr>
<td>AISeL</td>
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<td>32 51 24</td>
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<td>arXiv</td>
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<td>Computer Science</td>
<td>Journal, Conference</td>
<td>48 140 149</td>
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<tr>
<td>ScienceDirect (Elsevier)</td>
<td>All</td>
<td>Journal, Conference</td>
<td>11 31 36</td>
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<td>Journal, Conference</td>
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<td>Emerald</td>
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<td>0 0 4</td>
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<tr>
<td>Taylor&amp;Francis</td>
<td>All</td>
<td>Journal</td>
<td>10 17 22</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
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<td><strong>133 339 303</strong></td>
</tr>
</tbody>
</table>

* Articles searched using all search criteria fields with full text and limited access.  

Table 1. Literature review database search results.

For quality appraisal purposes, analyzing and coding are accomplished by two coders at various stages in our systematic literature review. This applies both to the multiple stages of the inclusion or exclusion of the articles within the literature selection process and to the final classification of the articles. The interrater reliability is assessed at each stage of this process, generating different measures at each stage to ensure consistency and accuracy. There are various methods of calculating the interrater reliability (Belur et al., 2018). Simple methods include the percentage of agreement between coders, while advanced methods include Scott’s π, Krippendorff’s α, and Cohen’s κ (Lombard et al., 2002). We...
choose Cohen’s $\kappa$ because it is precise and accurate (Belur et al., 2018). Once the coders agreed on the inclusion or exclusion criteria and on the classification categories that are described in the individual stages of the literature analysis process below, the two coders each coded the articles separately (Belanger and Carter, 2012).

To select relevant publications in the considered research field, inclusion and exclusion criteria were defined. First, only literature in English with a strong focus on ESM was gathered. Second, non-academic publications (such as white papers) and those that did not specifically deal with ESM (e.g., intranet) were excluded. As the research field is quite young (Kane et al., 2014), no past time interval restriction was applied. Upon completion of the research process, the period was fourteen years (from 2004 to 2018). The second phase corresponds to an initial examination of the displayed publications that are considered potentially relevant due to their title, abstract or keywords. A full-text search was required at this point if the title, abstract or keywords did not provide a clear indication about the relevance of the paper with regard to the research question. We therefore downloaded and checked these papers for relevance again. In most cases, papers that we omitted either did not yield any insights for our research question or used the keywords differently. After application of the previously mentioned exclusion criteria, a final set of 10 papers resulted. Because this number was so small, we expanded our literature search to UGC quality in public social media platforms with the same procedure and exclusion criteria. This decision was made because the generation of high-quality UGC is part of the public social media business model; thus, including papers on this research field could enrich the literature base and allow research transfers concerning UGC quality (see query 3). This expansion resulted in a total of 81 papers. Following the methodological guidelines of Ryan and Bernard (2000), we derived a preliminary set of two themes relating to UGC quality measures and UGC content quality moderation approaches, based on the theoretical insights described above. Therefore, in phase 3, these remaining papers are grouped separately for papers concerning the ESM and public social media contexts, and they are grouped according to their search aspects, measures, and approach. In turn, each group is clustered according to additional subtopics/concepts. Subsequently, after an in-depth evaluation, an additional 30 papers were eliminated, mainly due to their limited references to UGC quality. Ultimately, this expanded search strategy yielded a total of 51 relevant papers (from 13 different databases published between 2004 and 2017). The coding was performed by two authors, with an interrater reliability of 0.62 (P-value < 0.000). The $k$ statistics indicated that the agreement between both coders was substantial (Landis and Koch, 1977). The final phase 4 includes activities such as connecting, comparing and explaining (Levy and Ellis, 2006). We analyzed both the initially identified papers and the papers derived from the additional clustering process. In the last step, the 51 articles were then reviewed in depth by the two coders, who focused on their implications from a corporate perspective. This review led to further eliminations from the publication base. Interrater reliability was $\kappa = 0.83$ (P-value < 0.000), suggesting a high level of agreement between the coders (Landis and Koch, 1977). The $k$ statistics indicated that agreement was near perfect (Landis and Koch, 1977). Table 1 shows the final overview of 35 articles that are synthesized in their respective clusters, separately for ESM and public social media papers.

4 Research Findings and Discussion

A two-step approach is required to conceptualize UGC quality as a mutual adaption of demand and supply and to conceptualize the dual role of users in the ESM context. First, organizations need to enable a supply of high-quality UGC. Second, organizations need to ensure that quality expectations are met in order to create the desired match between demand and supply of UGC. We screened the literature based on these two scenarios dividing the literature review into two parts. The first part is concerned with the localization of quality content within ESM services to moderate a resupply of already existing content. The second part is concerned with organizational approaches that can encourage the supply of high-quality content. As mentioned in Section 3, the papers are analyzed and grouped according to these two aspects, measures and approaches. This approach is applied to papers dealing with public social media and to papers dealing with ESM. In turn, each group is clustered according to
topics/concepts. For the first group, “measures”, this clustering resulted in a typology consisting of four measurement concepts: textual-based, content-appraisal, network-based, and author-based, whereas the second group, “approach”, is divided into a motivational and a localization approach. An overview of the literature review result matrix is shown in Table 2 on the next page. The results and category insights will be presented in the following two paragraphs.

<table>
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<tr>
<th>Context</th>
<th>Authors</th>
<th>Measures</th>
<th>Approach</th>
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<td>Textual-based</td>
<td>Content-appraisal</td>
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<td>Braun et al., 2012)</td>
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<td>PSM</td>
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<td>Zheng et al., 2015)</td>
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Table 2. Overview of measure categories and quality assurance approaches.

### 4.1 UGC Quality Measures

In the literature, we could identify four quality identification measures. The first are textual-based measures that address visible textual features of UGC. Based on textual appearances of UGC, the thoroughness of such UGC can be assessed (Lee and Whinston, 2015; Lin et al., 2012). For ESM services (Viol et al., 2015; Ye et al., 2016), text metrics were used to determine the complexity of UGC based on the number of words or characters. The length of contributions is a proxy for UGC quality.
Despite these measures, public social media research came up with more distinct textual dimensions for UGC quality assessment, such as mistakes (e.g., typos or missing words) (Agichtein et al., 2008; Petz et al., 2013), punctuation use (e.g., excessive use of punctuation) (Agichtein et al., 2008) and use of emoticons or internet slang (Petz et al., 2013). Additionally, more complex measures including similarity of replies (e.g., the average ratio of common words between a post and each reply) or vocabulary complexity (e.g., number of distinct terms in each post) (Lee and Whinston, 2015; Lin et al., 2012) are identified. Those more universal measures are promising for an ESM setting, as they do not rely on social design features that might contrast with business users’ agendas (Mettler and Winter, 2016).

The content-appraisal category relies on peer judgment (users or experts) of the UGC about the relevance or richness of a contribution (Blooma et al., 2010). In ESM studies, content-appraisal is mainly used for user-generated idea evaluation by either experts or general content rating systems (Malsbender et al., 2013; Ye et al., 2016). Additionally, in an ESM knowledge-sharing context, both rating options are considered (Archer-Brown and Kietzmann, 2018; Mansour et al., 2011). The dimensions for ESM content appraisal are rather unspecified or simple (e.g., relevance or novelty). The public social media field provides a detailed and diverse UGC quality assessment with broader evaluation criteria (Lee and Kim, 2017). UGC accuracy, recency and topic relatedness (Chen et al., 2010; Petz et al., 2013) as well as objectivity, verifiability, and understandability (Chen et al., 2010; Ingawale et al., 2013; Kim and Han, 2009) are considered to be relevant criteria by public social media users or experts.

The network-based category generates a UGC quality status based on UGC reuse (e.g., re-editing, updating, forwarding, replying or recommending) (Yaari et al., 2011). The ESM literature has established roots utilizing feedback systems such as ‘likes’ or ‘thread to reply’ ratios for comparison of relevant UGC (Brzozowski et al., 2009; Viol et al., 2015; Ye et al., 2016). Additionally, text mining for praise or thanks messages are considered by Viol et al. (2015) and can help evaluate whether UGC meets the quality expectations of the recipients. Other measures of public social media are the dwell times of users on specific UGC to derive trending topics (Chai et al., 2011), or the number of reports of abuse that act as UGC quality exclusion criteria (Agichtein et al., 2008). The additional measures, which are based on public social media networks, are in turn universal enough to be transferred to ESM.

Unlike network-based measures, the author-based category focuses not on the UGC but on its creator, suggesting that an author’s acquired ESM reputation replaces content quality assurance (Lee and Whinston, 2015; Wang et al., 2017). The evaluation of an author in an ESM focuses on user activity metrics (e.g., number of topics initiated or span of topics contributed to), and an author’s role in bridging a structural gap is also considered (Farzan et al., 2008; Viol et al., 2015; Ye et al., 2016). Another author-based measure is social tagging, where tags are assigned to ESM users by other users to certify expertise. Based on tags and their confirmation, ESM users can be judged as reliable UGC authors (Braun et al., 2012). As in ESM, the public social media domain also relates to user rankings, which are based on user activity or content ratings received in the social network, building a history of UGC trustworthiness (Chai et al., 2011; Lin et al., 2012).

4.2 UGC Quality Moderation Approaches

After identifying measures to assess UGC quality, organizations need approaches that enable them to moderate UGC quality in an ESM service. The first approach follows a motivational understanding and encourages contributors to create high-quality UGC, and the second approach moderates UGC quality with the specific localization and promotion of high-quality UGC.

The motivational approach in the ESM literature follows a nonfinancial gamification approach that proposes point-based ranking systems for users and content. With points earned via content appraisal or author-based measures, users can achieve status classes (Farzan et al., 2008). The motivational aspect of earning a social status encourages UGC providers to contribute to higher UGC quality, count-
ing on the desired gratification from the ESM audience or the desire to improve their ESM status (Farzan et al., 2008). In the public social media context, a deeper understanding of financial motivational aspects was explored. The effect of financial rewards in public social media is accounted for high amounts of UGC, but the effect on UGC quality is not entirely clear. In public social media, the combination of financial and social measurement dimensions is considered to be the most appropriate because the dimension of social reward serves as a quality reputation threshold against the maximization of the financial reward of UGC floods (Burch et al., 2015; Chen et al., 2011, 2010; Cheng and Vassileva, 2005; Ling et al., 2005; Wang et al., 2012; Wiertz and de Ruyter, 2007). Translating the ambiguous effect of financial rewards into the organizational context will be difficult. ESM users are already in a financial relationship with the ESM service owner. Therefore, the social status or social reward mechanism seems more appropriate. Despite efforts to initiate a ranking infrastructure in an ESM service, the degree of organizational engagement is low because the UGC contributors are self-motivated by competition. This manipulation of ESM user behavior requires a deeper theoretical understanding (e.g., Warnock and Gantz, 2017) as it might conflict with organizational culture, team dynamics or individual norms.

The second approach to locating and identifying content is often found in the ESM literature. The idea is to use content appraisal, textual-, network- and author-based measures to promote selected high-quality UGC or contributors (Turban et al., 2011; Ye et al., 2016). In particular, feedback from organizational experts or users of ESM UGC is applied (Farzan et al., 2008; Ye et al., 2016). When looking for experts, assigning official tags to users can help to select the right ESM user in ranking mechanisms (Braun et al., 2012; Liu et al., 2013). The promotion of high-quality UGC can have a secondary function as an incentive for creators (Mansour et al., 2011). Additionally, we could identify the approach of using algorithm-driven filter systems in public social media, suggesting the use of mainly textual or network analysis metrics to select whether UGC is spam or of low relevance (e.g., high repetition of the same text) (Zheng et al., 2015). A negative-quality search is a valid option for an ESM context to separate conversation posts from meaningful content. However, the risk of promoting spam in an ESM service is relatively low, as ESM is a closed system. Reconsidering the localization approach, organizations will not only provide the infrastructure but will also actively evaluate UGC and authors, which will require personnel and organizational efforts to manage such a localization process (Turban et al., 2011).

### 4.3 Integration of the Quality Dimension into Corporate ESM Moderation

![Figure 1. Extended Corporate Moderation Approach Assessment based on Nolte et al. (2017).](image-url)
The original ESM moderation concept is based on the organization’s commitment to and encouragement of the creation of UGC. However, this concept neglects the fact that content quality assurance is an important CSF for sustaining ESM usage. Figure 1 integrates the quality dimension and identified measures into the organizational ESM moderation framework. The literature review did not produce an entirely new moderation approach. Instead, existing approaches have been refined to give the quality dimension the required recognition. The two newly identified quality assurance approaches are in line with the ‘corporate guidance’ approach, as they provide user guidance for qualitatively highly ranked UGC through localization and motivation from an organizational perspective. As a result, the review identified different levels of organizational engagement for both approaches. The localization approach requires more organizational engagement due to its rigor and continued need for organizational infrastructure (e.g., IT resource allocation to install and update rating features). All four identified quality measure categories have capabilities that can be utilized to help ESM’s target audience localize relevant topics and posts (e.g., textual-based, content appraisal or network-based measures) or identify high-quality UGC producers within the network (e.g., network-based and author-based measures). The localization approach will be best suited to match the social UGC quality conceptualization, as it connects UGC demand and supply. However, it should be mentioned that a user-centered approach is needed to avoid the shortcomings of existing content filtering and aggregating methods (Vu et al., 2015). As we focus on an intraorganizational business context, users’ perceptions of relevance are often topic-driven (e.g., the case study of Trier and Richter (2015)). Therefore, separating user topics, related topics and general topics might provide a differentiated view and empower content consumers to make their choices. The motivational approach also needs an organizational infrastructure and support organization, but once content appraisal, network- and author-based measures are in place, dynamics from gamification should be self-sustaining (Farzan et al., 2008; Hamari et al., 2014; Thom et al., 2012). Gamification in this context needs special attention, as the use of this strategy yields mixed results in other domains (Warnock and Gantz, 2017). The motivational aspects of gamification argue for stronger encouragement of UGC because the localization of a single posting does not act as a constant motivator. Due to the typology, active content producers (e.g., those initiating topics or providing feedback) will gain popularity with their higher-quality contributions and will also try to improve their social network status by interacting with higher-ranked individuals. Higher-quality content is required for this interaction to be recognized as mutually beneficial by the higher-ranked counterpart (Beck et al., 2014; Hacker et al., 2017b; Schöndienst et al., 2011). Additionally, organizations can use the ratings to recognize high-quality content, encouraging authors to motivate other content producers to achieve the same organizational acknowledgment.

The original framework has assigned UGC controls to the supervision approach, which has a high degree of organizational engagement and low user encouragement (Nolte et al., 2017). We highlighted this special characteristic of the original ‘corporate supervision’ approach (e.g., mentioned by (Annabi et al., 2012; Huang et al., 2010; Mansour et al., 2011; Turban et al., 2011)) and added it to Figure 1 as it is directly concerned with UGC quality. The main difference to the localization approach is that it does restrictive prefILTERing of the UGC instead of locating and selecting valuable content. Because only peer-reviewed UGC is shared, we assign high-quality assurance to this approach, provided that the review process follows transparent criteria and ensures the social audit of UGC (Scott, 2007). The encouragement to contribute will be relatively low, as the effort barrier is high. In addition, explicit content verification may be perceived as a performance audit, thereby contradicting the democratic roots of Web 2.0 services and transforming ESM into a corporate knowledge database. Textual measures can assist organizational UGC reviewers by acting as a first automated response system and ensuring predefined text quality levels before starting an organizational review process. We acknowledge that this approach works best in restricted areas of ESM service, such as official department blogs or department wikis that require certified content (Mansour et al., 2011).

The ‘employee self-organization’ approach does not require any organizational controls because users have a common set of norms about the purpose of ESM and the quality of its UGC. Therefore, users will monitor UGC quality through content appraisal (or dis-appraisal) measures (Davis et al., 1997; Huang et al., 2015; Jackson et al., 2007; Nolte et al., 2017). Here, the degree of corporate engagement...
is the lowest, but the quality assurance of UGC is questionable because the organizational ownership norms and governance are to some extent missing (Mettler and Winter, 2016). Although accountability and the elimination of anonymity in a professional context minimize the intentionally unjustified sharing of UGC, the efficiency of organization-supported moderation approaches to UGC quality cannot be achieved through democratic employee processes (Danis and Singer, 2008; Fulk and Yuan, 2013; Smith and McKeen, 2011). The content appraisal measures are clearly assigned to this approach as they put the decision about UGC relevance (= user perception of quality) in the hand of the user. Nevertheless, network- and author-based measures are part of standard ESM software packages. We are not associating those two measures primarily with this approach; however, the concepts of the measures could be applied in self-organized ways, e.g., by allowing users to recommend authors as well as to propose or pull content to and from their network. These measures can provide users with the opportunity to find their target audience via network analysis and enable user self-tracking of ESM activities. However, when providing such measures, the organization must hold back and not actively promote or appreciate specific authors, for example, so as not to decouple from the ‘employee self-organization’ mindset.

As our discussion shows the organizational applicability of the framework is context-dependent. We argue that each approach offers organizations a valid scenario of UGC quality assurance. The ‘corporate supervision’, with its UGC controls, will be best suited to verified organizational communities, forums, or blogs in which the ESM service acts more like an intranet or official knowledge-sharing database. The idea is to contribute a task-driven piece of correct UGC and not fragmented content cues or interactions that yield the desired information. The organizational drive behind this scenario is not the ESM benefit of innovation but the benefit of a secured and verified content channel, e.g., policies, process documentation or internal communications. In this context, UGC creation is a clear work-related task of the employee who generates and publishes it in the ESM service for the organizational audience. The ‘employee self-organization’ approach, on the other hand, can find its applicability in scenarios of a more recreational or social bonding context. Here, organizations and users are more interested in the social connection (e.g., coordination of after work sports groups) than in UGC itself. The content is therefore clearly not task- or work-related. However, the UGC allows social capital to be built that originates in the online ESM context. Another scenario of the ‘employee self-organization’ approach would be expert communities or forums in which the experts follow the stewardship principle and co-create UGC of relevance for a specific expert group. In this scenario, quality assurance steered by the organization will not be needed or may even harm the creative process of such experts. For the ‘corporate guidance’ approach, the scenario is UGC-focused and targets creation and spreading of relevant UGC in the organization for the purpose of structural gap-bridging and knowledge diffusion. Organizations will provide educated users with an environment that empowers and guides their ESM interaction. On the one hand, this approach targets knowledge workers’ role perception to encourage them to contribute and advance high-quality UGC via UGC motivation, and on the other hand, it enables ESM observers to follow and read user-centric content based on UGC localization. The scenarios show that organizations must be able to switch between approaches and therefore need inherent ambidexterity capabilities for UGC quality moderation. If only one moderation approach is executed, organizations will not be able to react to a different context appropriately, e.g., applying UGC controls to a social exchange context will impact the encouragement to contribute more significantly because user expectations about UGC quality and its creation process will be different in that context. Consequently, organizations need to assess how much quality assurance is needed in the ESM use scenario before taking moderation action.

5 Implications for Research and Practice

Theoretically, this study advances the understanding of organizational moderation capabilities of ESM services and examines an underrepresented UGC quality assurance perspective. Regarding the latter, our research provides a comprehensive overview of UGC quality measures that are primarily discussed individually in the ESM and public social media literatures. The systematic categorization of
measures will allow a more structured discussion about UGC quality enhancement potentials in future research and provide orientation for the development of new measures or for the validation of existing public social media measures in the ESM context. Furthermore, we add a behavioral perspective to the measures, as we distinguish them by organizational application approaches that describe different moderation modes. The synthesis of the categorization and the approach matching is that ESM research lacks knowledge of the motivational aspects and of UGC quality measures overall. We encourage the transfer of insights from public social media to these fuzzy ESM research areas if there is no concern with explaining user sense-making of the ESM service. This caution is warranted because several studies (e.g., Trier and Richter 2015, Mettler and Winter 2016) acknowledge a fundamental difference in users’ sense-making in the business context. However, this study can provide the basis for an in-depth review of measures on the individual level in the ESM context. In addition, we contribute to the scientific discussion of ESM moderation. The research discourse in an intraorganizational ESM context acknowledges the goal conflict of losing control over the direction of communication and the need to encourage the creation of relevant UGC (Baptista and Galliers, 2012). We address the paradoxical role of UGC quality in that particular CSF goal conflict and add the critical ESM success dimension of quality assurance to the moderation framework of Nolte et al. (2017). The new quality assurance dimension integrates a more holistic organizational perspective to the ESM moderation discussion and allows researchers to better position their future research contributions in this regard while at the same time allowing them to derive clear practical implications of such measures or approaches. Finally, our study emphasizes the context-dependent nature of ESM, as we show the importance of ambidexterity for organizational ESM moderation.

For practitioners, this study demonstrates the importance of UGC quality in manifesting the relevance and reliability of ESM services in addition to other organizational information and knowledge sharing channels. We draw attention to the complex interplay of CSF, underline areas of conflict in organizational moderation actions and provide organizations with an understanding of ESM moderation beyond “just” encouraging UGC and its relation to organizational efforts. The more holistic operationalization has been achieved by adding the UGC quality assurance dimension and assigning four measurement categories to the existing two-dimensional moderation framework of Nolte et al. (2017). Embedded in the degree of organizational engagement and encouragement of the UGC perspective, practitioners can now operationalize the framework as a quality assurance tool and evaluate whether their particular ESM service is utilized in this regard. As the need to moderate ESM services will change according to the context of communication within the ESM services and its applied context (e.g., Gibbs et al., 2015; Nolte et al., 2017), organizations can derive situational quality measures that fit with a chosen moderation approach. Furthermore, we provide guidance to practitioners by presenting a first set of scenarios in which the framework can be applied, and we underline the need for situational ambidexterity. We also highlight that popular public social media topics, e.g., gamification, need to be treated with caution, as the effects are ambiguous and need to be carefully treated and monitored when applied in a professional context.

6 Limitations

Reflecting the nature of our study, our investigation has several limitations that offer opportunities for future studies. First, to achieve this degree of coverage, some critical trade-offs were necessary. In taking such a top-down view of research papers published in journals and conference proceedings, we have inevitably been unable to capture all the details. Moreover, the literature review was conducted by the authors of the paper. While the literature review results were discussed in several meetings and iteratively adapted to minimize subjective biases, certain subjectivities, especially regarding the assessment of relevance, clustering, and synthesis, cannot be eliminated. Furthermore, to assure the quality of the study, mostly peer-reviewed sources were selected. Although most articles are quality reviewed publications, some smaller conference proceedings were included due to relevance of their topics. Furthermore, the initial keyword search utilized search terms in combination. Therefore, publications might have been neglected that would have been included if an inductive second keyword
search had been performed after the clustering. As this literature review aimed to identify implications
given for researchers and practitioners, we compared findings of studies that used different
methodologies, including single case study results. As the topics ESM moderation and ESM UGC
quality are quite young, we reviewed those publications together to provide a first overview.
Furthermore, UGC quality moderation was not always the primary research subject of the reviewed
articles, but the discussions and implications delivered insights about specific measures or approaches.
Therefore, we might lack the validation of our own collected empirical data. Additionally, we trans-
ferred findings from the more mature public social media domain but acknowledge shortcomings that
may not work in an ESM context.

7 Conclusions and Outlook

In this study, we investigated ESM services from an organizational perspective to advance the organ-
izational possibilities and need to moderate social communication and information channels. We fo-
cused on the quality assurance of UGC because the CSF ‘content quality’ lies in an area of conflict
between other CSF, and it also challenges organizations’ ESM management capabilities. We critically
discussed an existing ESM moderation framework and addressed the importance of a missing UGC
quality dimension. Based on the assessment, we performed a structured literature review to deliver
insights into how organizations can moderate UGC quality in intraorganizational ESM services.
Summarizing the findings of the literature review, we first identify four categories of UGC measures
and derive two UGC quality moderation approaches. The UGC quality measure categories are content
appraisal-, textual-, network- and author-based. The UGC quality moderation approaches are divided
into high-quality UGC localization or UGC quality motivation. In addition, we transferred insights for
the identified clusters from public social media research to the ESM context. Based on the approaches,
we extended an existing organizational moderation framework by the UGC quality dimension and fur-
ther synthesized a connection matrix between UGC quality measures and moderation approaches.
With this study, we provide a more holistic understanding of ESM moderation opportunities and relate
UGC quality as a CSF that is contradictory to the degree of organizational engagement and to the en-
couragement to contribute. Based on these findings, practitioners will be able to find a suitable ap-
proach to UGC quality outcomes and assess the effort needed to achieve it. From a theoretical per-
spective, we advance the ESM moderation discussion and highlight that UGC quality is still an un-
derrepresented research topic within the ESM field. We recommend that future research validate this
assessment, e.g., by applying the framework in a qualitative study. Our discussion provides scenarios
that can build the basis for practical validation (e.g., in a case study). Furthermore, it is of interest to
select single mechanisms such as gamification that are relatively unexplored for ESM services and to
evaluate them in greater detail. The sustaining effect of such competitive approaches in a professional
environment can have unintended consequences for users’ sharing behavior. In addition to the per-
formance rating character of user rankings, privacy concerns could be amplified by such mecha-
nisms and potentially affect ESM usage or conflict with data protection acts (Buettnner, 2015;
Giermindl et al., 2017). Finally, the contradiction of applying ESM features in areas where they create
conflict with existing organizational structures and processes (e.g., Karou et al., 2015; McAfee, 2006)
should encourage rethinking of the identified CSF. Future research should evaluate such areas of con-

cflict in greater depth from an organizational perspective to provide insights on the ordering principles
and develop concepts to support organizational goal achievement with the implementation of such
technologies (Behrendt et al., 2014; Kane, 2014; Nolte et al., 2017; Trier and Richter, 2015).

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